

Chemical Analysis Report

SE-DIST-2017-09-27-01

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

Event Description: **SMP-G1 Extra samples**

Request ID: **RQ-2017-09-25-55**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 16-OCT-2017 11:24



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: Oak Creek @ SR68

Collection Date/Time: 09/26/2017 11:35

Field ID: G4SE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931910	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P332343	
	EPA 300.0 Rev. 2.1	Chloride	7.6	A	mg Cl/L	P332364	
		Sulfate	0.74	A	mg SO4/L	P332367	
	SM 2120 B	Color (true)	400		PCU	P332373	
	SM 2320 B-97	Total Alkalinity	9.6		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	87		mg/L	P332921	
	SM 2540 D-97	TSS	6	I	mg/L	P332914	
	SM 4500 F-C-97	Fluoride	0.047	I	mg F/L	P332636	RPD
1931912	EPA 350.1 Rev. 2.0	Ammonia-N	0.063		mg N/L	P332758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P332526	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P332612	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P332461	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P332614	
1931914	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P332329	
1931931	EPA 8321B	Sucralose**	0.010	U	ug/L	P332314	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332316	
		Diuron	8.0E-04	U	ug/L	P332316	
		Fenuron	0.0080	U	ug/L	P332316	
		Imidacloprid	8.0E-04	U	ug/L	P332316	
		Bentazon	8.0E-04	U	ug/L	P332316	MS
		Linuron	0.0040	U	ug/L	P332316	
		Acetaminophen**	0.0080	U	ug/L	P332316	
		MCP	0.0020	U	ug/L	P332316	
		Carbamazepine**	4.0E-04	U	ug/L	P332316	
		Triclopyr**	0.0040	U	ug/L	P332316	
		Primidone**	0.0040	U	ug/L	P332316	
		Fluridone**	4.0E-04	U	ug/L	P332316	

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: Results confirmed in re-extraction.

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

Sample Location: Otter Creek @ 441

Collection Date/Time: 09/26/2017 11:00

Field ID: G1SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931911	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P332343	
	EPA 300.0 Rev. 2.1	Chloride	70		mg Cl/L	P332364	
		Sulfate	18		mg SO4/L	P332367	
	SM 2120 B	Color (true)	250	A	PCU	P332373	
	SM 2320 B-97	Total Alkalinity	78		mg CaCO3/L	P332632	
	SM 2540 C-97	TDS	295	A	mg/L	P332922	
	SM 2540 D-97	TSS	6	IA	mg/L	P332915	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P332636	RPD

Field ID: G1SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931913	EPA 350.1 Rev. 2.0	Ammonia-N	1.1		mg N/L	P332758	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P332526	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P332612	
	EPA 365.1 Rev. 2.0	Total-P	0.68		mg P/L	P332461	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P332614	
1931915	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.59		mg P/L	P332329	
1931932	EPA 8321B	Sucralose**	0.039	I	ug/L	P332314	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P332316	
		Diuron	8.0E-04	U	ug/L	P332316	
		Fenuron	0.0080	U	ug/L	P332316	
		Imidacloprid	0.0013	I	ug/L	P332316	
		Bentazon	8.0E-04	U	ug/L	P332316	MS
		Linuron	0.0040	U	ug/L	P332316	
		Acetaminophen**	0.0084	I	ug/L	P332316	
		MCP	0.0020	U	ug/L	P332316	
		Carbamazepine**	4.0E-04	U	ug/L	P332316	
		Triclopyr**	0.0040	U	ug/L	P332316	
		Primidone**	0.0040	U	ug/L	P332316	
		Fluridone**	4.0E-04	U	ug/L	P332316	

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 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: P332343

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332364

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332367

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P332758

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332526

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332612

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332461

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332329

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

Reference Method: EPA 8321B
Batch ID: P332314

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332373

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P332632

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

Reference Method: SM 2540 C-97
Batch ID: P332921

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P332922

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P332914

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P332915

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P332614

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

Reference Method: USGS O-2060-01
Batch ID: P332316

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
MCPP	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: P332364

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332367

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332758

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: P332526

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332612

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332329

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

Reference Method: EPA 8321B
Batch ID: P332314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.6		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P332632

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

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P332614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P332316

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	145		P	30 - 150
Bentazon	40.2		P	40 - 150
Carbamazepine	117		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	110		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	107		P	40 - 150
MCPP	75.7		P	40 - 150
Primidone	109		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: P332364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931910	Chloride	105		P	90 - 110
1932028	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931910	Sulfate	104		P	90 - 110
1932028	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931807	Ammonia-N	103	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931879	Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931879	NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931879	Total-P	96.7	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931880	O-Phosphate-P	96.1	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P332314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1932057	Sucralose	42.3	42.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931805	Fluoride	96.0	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P332614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931818	Organic Carbon	95.2	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931788	2,4-D	64.1	66.9	P/P	40 - 150
1931788	Acetaminophen	82.5	90.5	P/P	30 - 150
1931788	Bentazon	22.3	29.7	F/F	40 - 150
1931788	Carbamazepine	82.1	84.7	P/P	40 - 150
1931788	Diuron	57.4	62.9	P/P	40 - 150
1931788	Fenuron	82.6	83.1	P/P	40 - 150
1931788	Fluridone	66.1	58.8	P/P	40 - 150
1931788	Linuron	80.7	85.4	P/P	40 - 150
1931788	MCPP	50.0	51.8	P/P	40 - 150
1931788	Primidone	91.9	91.9	P/P	40 - 150
1931788	Triclopyr	50.6	52.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931817	Turbidity	7.64	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931910	Chloride	1.87	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931910	Sulfate	7.60	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P332758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931807	Ammonia-N	3.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931879	Kjeldahl Nitrogen	0.0329	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P332612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931879	NO2NO3-N	0.332	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P332461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931879	Total-P	0.524	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931880	O-Phosphate-P	0.790	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P332314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1932057	Sucralose	0.283	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P332373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931911	Color (true)	1.88	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P332632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931805	Total Alkalinity	0.258	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P332921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931805	TDS	5.00	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P332922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931911	TDS	6.10	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P332636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931805	Fluoride	4.04	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P332614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931818	Organic Carbon	0.118	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P332316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931788	2,4-D	3.28	Spike	P	0 - 30
1931788	Acetaminophen	9.20	Spike	P	0 - 30
1931788	Bentazon	11.2	Spike	P	0 - 30
1931788	Carbamazepine	2.99	Spike	P	0 - 30
1931788	Diuron	6.74	Spike	P	0 - 30
1931788	Fenuron	0.652	Spike	P	0 - 30
1931788	Fluridone	11.1	Spike	P	0 - 30
1931788	Imidacloprid	0.905	Spike	P	0 - 30
1931788	Linuron	5.66	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P332316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931788	MCP	3.10	Spike	P	0 - 30
1931788	Primidone	0.0440	Spike	P	0 - 30
1931788	Triclopyr	3.91	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: 1931931
 Field Sample ID: G4SE0080

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	99.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.7	P	30 - 160
EPA 8321B	Diuron-d6	40.2	P	30 - 160
EPA 8321B	Primidone-d5	59.5	P	30 - 160
EPA 8321B	Sucralose-d6	46.3	P	40 - 160
USGS O-2060-01	2,4-D-d3	58.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	99.4	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	51.7	P	30 - 160
USGS O-2060-01	Diuron-d6	40.2	P	30 - 160
USGS O-2060-01	Primidone-d5	59.5	P	30 - 160
USGS O-2060-01	Sucralose-d6	46.3	P	40 - 160

Lab Sample ID: 1931932
 Field Sample ID: G1SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	89.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.9	P	30 - 160
EPA 8321B	Diuron-d6	50.2	P	30 - 160
EPA 8321B	Primidone-d5	70.1	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	64.9	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	89.0	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	62.9	P	30 - 160
USGS O-2060-01	Diuron-d6	50.2	P	30 - 160
USGS O-2060-01	Primidone-d5	70.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	92.4	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A79194
 Included Lab Sample IDs: 1931914, 1931915

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79194

Included Lab Sample IDs: 1931914, 1931915

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79197

Included Lab Sample IDs: 1931910, 1931911

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79203

Included Lab Sample IDs: 1931910, 1931911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.3	94.3	P/P	90 - 110
Sulfate	95.8	93.8	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A79205

Included Lab Sample IDs: 1931910, 1931911

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79263

Included Lab Sample IDs: 1931912, 1931913

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

Reference Method: EPA 8321B

Run ID: A79290

Included Lab Sample IDs: 1931931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	126	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79298

Included Lab Sample IDs: 1931912, 1931913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	105	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79302

Included Lab Sample IDs: 1931912, 1931913

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

Reference Method: SM 5310 B-00

Run ID: A79302

Included Lab Sample IDs: 1931912, 1931913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79305

Included Lab Sample IDs: 1931910, 1931911

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

Reference Method: SM 4500 F-C-97

Run ID: A79305

Included Lab Sample IDs: 1931910, 1931911

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79314

Included Lab Sample IDs: 1931912, 1931913

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79344

Included Lab Sample IDs: 1931912, 1931913

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

Reference Method: USGS O-2060-01

Run ID: A79377

Included Lab Sample IDs: 1931931, 1931932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.7	99.6	P/P	50 - 150
Acetaminophen	97.6	105	P/P	60 - 150
Bentazon	118	115	P/P	50 - 150
Carbamazepine	106	106	P/P	60 - 150
Diuron	103	105	P/P	60 - 150
Fenuron	99.4	100	P/P	60 - 150
Fluridone	100	102	P/P	60 - 160
Imidacloprid	92.2	93.1	P/P	60 - 150
Linuron	104	103	P/P	60 - 150
MCPP	99.8	97.8	P/P	50 - 150
Primidone	99.4	95.3	P/P	60 - 150
Triclopyr	98.9	107	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A79451
Included Lab Sample IDs: 1931932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	81.6	90.4	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				7.64	
EPA 300.0 Rev. 2.1	Chloride	102	105 99.0		1.87	
	Sulfate	103	104 101		7.60	
EPA 350.1 Rev. 2.0	Ammonia-N	103	103 99.9			3.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	106 106			0.0329
EPA 353.2 Rev. 2.0	NO2NO3-N	106	104 104			0.332
EPA 365.1 Rev. 2.0	Total-P	98.1	96.7 96.0			0.524
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	96.1 97.3			0.790
EPA 8321B	Sucralose	92.6	42.3 42.5			0.283
SM 2120 B	Color (true)				1.88	
SM 2320 B-97	Total Alkalinity	102			0.258	
SM 2540 C-97	TDS				5.00	
	TDS				6.10	
SM 4500 F-C-97	Fluoride	98.2	96.0 100			4.04
SM 5310 B-00	Organic Carbon	97.8	95.2 95.4			0.118
USGS O-2060-01	2,4-D	74.3	64.1 66.9			3.28
	Acetaminophen	145	82.5 90.5			9.20
	Bentazon	40.2	22.3 29.7			11.2
	Carbamazepine	117	82.1 84.7			2.99
	Diuron	103	57.4 62.9			6.74
	Fenuron	112	82.6 83.1			0.652
	Fluridone	110	66.1 58.8			11.1
	Imidacloprid	102				0.905
	Linuron	107	80.7 85.4			5.66
	MCPP	75.7	50.0 51.8			3.10
	Primidone	109	91.9 91.9			0.0440
	Triclopyr	72.5	50.6 52.6			3.91

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1931910, 1931911
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1931910, 1931911
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1931910, 1931911
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1931912, 1931913

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1931912, 1931913
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1931912, 1931913
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1931912, 1931913
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1931914, 1931915
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1931931, 1931932
SM 2120 B / E31780	True Color measured at 450 nm	1931910, 1931911
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1931910, 1931911
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1931910, 1931911
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1931910, 1931911
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1931910, 1931911
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1931912, 1931913
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1931931, 1931932
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1931931, 1931932

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	09/27/2017			09/27/2017 17:33	Tanya Welborn	1931910, 1931911
EPA 300.0 Rev. 2.1	09/27/2017			09/28/2017	Julia Storbeck	1931910, 1931911
EPA 350.1 Rev. 2.0	09/27/2017			10/04/2017	Sofia Elnemr	1931912, 1931913
EPA 351.2 Rev. 2.0	09/27/2017	10/02/2017	Sofia Elnemr	10/03/2017	Joseph Suarez	1931912, 1931913
EPA 353.2 Rev. 2.0	09/27/2017			10/03/2017	Beverly Y. Sanders	1931912, 1931913
EPA 365.1 Rev. 2.0	09/27/2017	09/29/2017	Sima Feizi	10/02/2017	Lipi Saha	1931912, 1931913
EPA 365.1 Rev. 2.0 dissolved	09/27/2017			09/27/2017 14:55	Megan Treadwell	1931915
	09/27/2017			09/27/2017 15:07	Megan Treadwell	1931914
EPA 8321B	09/27/2017	10/02/2017	Hoor Shaik	10/02/2017	Juyoung Kim	1931931
	09/27/2017	10/02/2017	Hoor Shaik	10/09/2017	Juyoung Kim	1931932
SM 2120 B	09/27/2017			09/27/2017 16:00	DeAsia Armster	1931910
	09/27/2017			09/27/2017 16:02	DeAsia Armster	1931911
SM 2320 B-97	09/27/2017			10/03/2017	Dale L. Simmons	1931910, 1931911
SM 2540 C-97	09/27/2017			09/29/2017	Yijie Li	1931910, 1931911
SM 2540 D-97	09/27/2017			09/29/2017	Yijie Li	1931910, 1931911
SM 4500 F-C-97	09/27/2017			10/03/2017	Dale L. Simmons	1931910, 1931911
SM 5310 B-00	09/27/2017			10/02/2017	Ping Hua	1931912, 1931913
USGS O-2060-01	09/27/2017	10/02/2017	Hoor Shaik	10/06/2017	Julie Michelle Frank	1931931, 1931932