

Chemical Analysis Report

SO-DIST-2019-01-30-01

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

Event Description: **SMP - Pemberton, Spartman & Bellows**

Request ID: **RQ-2019-01-28-35**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
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FLDEP Southwest District Office
13051 N. Telecom Parkway
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Date Certified: 20-FEB-2019 14:33



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: SPARTMAN BRANCH AT HARVEY TEW RD

Collection Date/Time: 01/29/2019 13:40

Field ID: G2SW0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058107	EPA 8321B	2,4-D	0.013		ug/L	P358017	MS
		Sucralose**	0.22		ug/L	P358749	
		Bentazon	0.051		ug/L	P358017	
		MCP	0.0020	U	ug/L	P358017	MS
		Triclopyr**	0.0040	U	ug/L	P358017	
		Imidacloprid	0.012		ug/L	P358017	
		Diuron	0.0020	U	ug/L	P358017	MS
		Pyraclostrobin**	0.0020	U	ug/L	P358017	
		Primidone**	0.0040	U	ug/L	P358017	
		Linuron	0.0040	U	ug/L	P358017	MS
		Acetaminophen**	0.0080	U	ug/L	P358017	
		Fenuron	0.016	UJ	ug/L	P358017	LCS
		Imazapyr**	0.034		ug/L	P358017	
		Carbamazepine**	8.0E-04	U	ug/L	P358017	
		Fluridone**	0.0011	I	ug/L	P358017	
		Hydrocodone**	0.0020	U	ug/L	P358017	
		Naproxen**	0.0080	U	ug/L	P358017	
		Ibuprofen**	0.020	U	ug/L	P358017	
		Glyphosate**	0.55		ug/L	P358146	MS
		AMPA**	0.76		ug/L	P358146	
		Endothall**	0.25	U	ug/L	P358146	
		Glufosinate**	0.10	U	ug/L	P358146	RPD
		Acesulfame K**	0.10	U	ug/L	P358146	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Sample Location: BELLOWS LAKE OUTLET

Collection Date/Time: 01/29/2019 12:10

Field ID: G1SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058093	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P358075	
	EPA 300.0 Rev. 2.1	Chloride	7.4		mg Cl/L	P358483	
		Sulfate	6.1		mg SO4/L	P358484	
	SM 2120 B	Color (true)	24	A	PCU	P358068	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P358555	
	SM 2540 C-97	TDS	108		mg/L	P358707	
	SM 2540 D-97	TSS	24	I	mg/L	P358709	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P358558	
2058094	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P358207	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P358191	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P358111	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P358266	
2058095	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358071	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BELLOWS LAKE OUTLET

Collection Date/Time: 01/29/2019 12:10

Field ID: G1SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058108	EPA 8321B	2,4-D	0.061		ug/L	P358017	MS
		Sucralose**	0.035	I	ug/L	P358574	
		Bentazon	8.0E-04	U	ug/L	P358017	
		MCP	0.0027	I	ug/L	P358017	MS
		Triclopyr**	0.0040	U	ug/L	P358017	
		Imidacloprid	0.0045	I	ug/L	P358017	
		Diuron	0.0021	I	ug/L	P358017	MS
		Pyraclostrobin**	0.0020	U	ug/L	P358017	
		Primidone**	0.0040	U	ug/L	P358017	
		Linuron	0.0040	U	ug/L	P358017	MS
		Acetaminophen**	0.0080	U	ug/L	P358017	
		Fenuron	0.016	UJ	ug/L	P358017	LCS
		Imazapyr**	0.0062	I	ug/L	P358017	
		Carbamazepine**	8.0E-04	U	ug/L	P358017	
		Fluridone**	0.032		ug/L	P358017	
		Hydrocodone**	0.0020	U	ug/L	P358017	
		Naproxen**	0.0080	U	ug/L	P358017	
		Ibuprofen**	0.020	U	ug/L	P358017	
		Glyphosate**	0.10	U	ug/L	P358146	MS
		AMPA**	0.10	U	ug/L	P358146	
		Endothall**	0.25	U	ug/L	P358146	
		Glufosinate**	0.10	U	ug/L	P358146	RPD
		Acesulfame K**	0.10	U	ug/L	P358146	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358075

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358483

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358484

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358207

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358111

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

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

Reference Method: EPA 8321B
Batch ID: P358017

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P358017

Component	Result	Code	Units
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P358146

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P358574

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P358749

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P358068

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P358555

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

Reference Method: SM 2540 C-97
Batch ID: P358707

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358709

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P358709

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P358558

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P358266

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358484

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358207

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358111

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

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

Reference Method: EPA 8321B
Batch ID: P358017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.2		P	40 - 150
Acetaminophen	97.6		P	30 - 150
Bentazon	69.4		P	30 - 150
Carbamazepine	96.0		P	40 - 150
Diuron	82.8		P	40 - 150
Fenuron	171		F	40 - 150
Fluridone	95.0		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	79.6		P	40 - 150
Imazapyr	91.7		P	40 - 150
Imidacloprid	92.7		P	40 - 160
Linuron	77.2		P	40 - 150
MCPP	96.9		P	40 - 150
Naproxen	87.0		P	40 - 150
Primidone	92.8		P	40 - 150
Pyraclostrobin	75.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P358017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Triclopyr	70.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.8		P	40 - 150
AMPA	118		P	40 - 150
Endothall	84.7		P	40 - 150
Glufosinate	114		P	40 - 150
Glyphosate	118		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P358574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	80.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358749

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	99.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P358068

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

Reference Method: SM 2320 B-97
Batch ID: P358555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P358558

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P358483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058077	Chloride	98.8		P	90 - 110
2058415	Chloride	98.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P358484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058077	Sulfate	99.3		P	90 - 110
2058415	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P358207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058094	Ammonia-N	94.0	92.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P358191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058078	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P358111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057986	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057964	O-Phosphate-P	95.5	96.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P358017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057771	2,4-D	122	157	P/F	40 - 150
2057771	Acetaminophen	87.0	75.3	P/P	30 - 150
2057771	Bentazon	42.8	47.3	P/P	30 - 150
2057771	Carbamazepine	51.8	55.7	P/P	40 - 150
2057771	Diuron	35.6	37.9	F/F	40 - 150
2057771	Fenuron	80.6	82.7	P/P	40 - 150
2057771	Fluridone	80.2	85.8	P/P	40 - 150
2057771	Hydrocodone	67.3	67.7	P/P	40 - 150
2057771	Ibuprofen	61.2	69.0	P/P	40 - 150
2057771	Imazapyr	80.3	79.9	P/P	40 - 150
2057771	Imidacloprid	109	113	P/P	40 - 160
2057771	Linuron	37.9	43.5	F/P	40 - 150
2057771	MCP	158	180	F/F	40 - 150
2057771	Naproxen	62.5	65.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P358017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057771	Primidone	70.9	74.4	P/P	40 - 150
2057771	Pyraclostrobin	55.9	68.0	P/P	40 - 150
2057771	Triclopyr	83.2	109	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2057632	Acesulfame K	77.6	76.9	P/P	40 - 150
2057632	AMPA	57.6	85.0	P/P	40 - 150
2057632	Endothall	94.7	84.3	P/P	40 - 150
2057632	Glufosinate	84.7	125	P/P	40 - 150
2057632	Glyphosate	116	153	P/F	40 - 140

Reference Method: EPA 8321B
Batch ID: P358574

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061097	Sucralose	109	87.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P358749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061239	Sucralose	101	109	P/P	40 - 150

Reference Method: SM 5310 B-00
Batch ID: P358266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058019	Organic Carbon	98.7	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058024	Turbidity	17.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058077	Chloride	0.127	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058077	Sulfate	0.316	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058094	Ammonia-N	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058078	Kjeldahl Nitrogen	0.381	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057986	NO2NO3-N	0.442	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057964	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P358017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057771	2,4-D	18.4	Spike	P	0 - 30
2057771	Acetaminophen	14.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P358017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057771	Bentazon	3.20	Spike	P	0 - 30
2057771	Carbamazepine	7.19	Spike	P	0 - 30
2057771	Diuron	5.13	Spike	P	0 - 30
2057771	Fenuron	2.63	Spike	P	0 - 30
2057771	Fluridone	6.31	Spike	P	0 - 30
2057771	Hydrocodone	0.602	Spike	P	0 - 30
2057771	Ibuprofen	12.0	Spike	P	0 - 30
2057771	Imazapyr	0.192	Spike	P	0 - 30
2057771	Imidacloprid	3.67	Spike	P	0 - 30
2057771	Linuron	13.6	Spike	P	0 - 30
2057771	MCPP	12.7	Spike	P	0 - 30
2057771	Naproxen	5.17	Spike	P	0 - 30
2057771	Primidone	4.81	Spike	P	0 - 30
2057771	Pyraclostrobin	19.5	Spike	P	0 - 30
2057771	Triclopyr	26.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057632	Acesulfame K	0.928	Spike	P	0 - 30
2057632	AMPA	22.8	Spike	P	0 - 30
2057632	Endothall	11.6	Spike	P	0 - 30
2057632	Glufosinate	38.1	Spike	F	0 - 30
2057632	Glyphosate	17.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061097	Sucralose	21.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P358749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2061239	Sucralose	5.41	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P358068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058093	Color (true)	3.54	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P358555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058115	Total Alkalinity	0.494	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P358707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058018	TDS	7.65	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P358558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058115	Fluoride	0.509	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P358266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058019	Organic Carbon	1.50	Spike	P	0 - 20

* 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: 2058107
Field Sample ID: G2SW0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	56.4	P	30 - 160
EPA 8321B	Diuron-d6	51.6	P	30 - 160
EPA 8321B	Endothall-d6	82.5	P	40 - 160
EPA 8321B	Endothall-d6	82.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	71.0	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	71.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	89.3	P	30 - 160
EPA 8321B	Primidone-d5	66.8	P	30 - 160
EPA 8321B	Sucralose-d6	99.4	P	40 - 160
EPA 8321B	Sucralose-d6	97.5	P	40 - 160
EPA 8321B	Sucralose-d6	99.4	P	40 - 160
EPA 8321B	Sucralose-d6	97.5	P	40 - 160

Lab Sample ID: 2058108
Field Sample ID: G1SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	48.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	42.2	P	30 - 160
EPA 8321B	Diuron-d6	37.0	P	30 - 160
EPA 8321B	Endothall-d6	83.2	P	40 - 160
EPA 8321B	Endothall-d6	83.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.9	P	30 - 160
EPA 8321B	Primidone-d5	60.0	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160
EPA 8321B	Sucralose-d6	80.6	P	40 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160
EPA 8321B	Sucralose-d6	80.6	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
 Run ID: A89100
 Included Lab Sample IDs: 2058093

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A89101
 Included Lab Sample IDs: 2058095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A89102
 Included Lab Sample IDs: 2058093

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

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A89117
 Included Lab Sample IDs: 2058094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A89146
 Included Lab Sample IDs: 2058094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	97.9	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A89162
 Included Lab Sample IDs: 2058107, 2058108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	89.0	P/P	50 - 150
Acetaminophen	111	112	P/P	60 - 160
Bentazon	77.5	73.3	P/P	50 - 160
Carbamazepine	100	107	P/P	60 - 150
Diuron	109	106	P/P	60 - 150
Fenuron	104	104	P/P	60 - 150
Fluridone	103	102	P/P	60 - 160
Hydrocodone	96.6	97.6	P/P	60 - 150
Ibuprofen	78.1	86.8	P/P	50 - 160
Imazapyr	85.7	80.9	P/P	50 - 150
Imidacloprid	96.3	98.8	P/P	60 - 150
Linuron	98.7	103	P/P	60 - 150
MCPP	97.9	110	P/P	50 - 150
Naproxen	81.2	101	P/P	50 - 160
Primidone	103	111	P/P	60 - 150
Pyraclostrobin	102	106	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A89162

Included Lab Sample IDs: 2058107, 2058108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	112	121	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A89165

Included Lab Sample IDs: 2058094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89179

Included Lab Sample IDs: 2058107, 2058108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	118	130	P/P	60 - 160
AMPA	123	118	P/P	60 - 160
Glufosinate	91.8	97.8	P/P	60 - 160
Glufosinate	96.1	91.8	P/P	60 - 160
Glyphosate	103	98.2	P/P	60 - 160
Glyphosate	104	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89189

Included Lab Sample IDs: 2058107, 2058108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	91.1	97.0	P/P	60 - 160
Endothall	81.5	85.0	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89205

Included Lab Sample IDs: 2058093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	101	P/P	90 - 110
Sulfate	99.3	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89272

Included Lab Sample IDs: 2058093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89272

Included Lab Sample IDs: 2058093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89283

Included Lab Sample IDs: 2058094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89461

Included Lab Sample IDs: 2058107, 2058108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	105	P/P	60 - 160
Sucralose	105	84.8	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				17.5	
EPA 300.0 Rev. 2.1	Chloride	98.9	98.8	98.5	0.127	
	Sulfate	100	99.3	98.3	0.316	
EPA 350.1 Rev. 2.0	Ammonia-N	102	94.0	92.4		1.51
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	106		0.381
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	101		0.442
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	95.5	96.7		1.16
EPA 8321B	2,4-D	83.2	122	157		18.4
	Acesulfame K	95.8	77.6	76.9		0.928
	Acetaminophen	97.6	87.0	75.3		14.4
	AMPA	118	57.6	85.0		22.8
	Bentazon	69.4	42.8	47.3		3.20
	Carbamazepine	96.0	51.8	55.7		7.19
	Diuron	82.8	35.6	37.9		5.13
	Endothall	84.7	94.7	84.3		11.6
	Fenuron	171	80.6	82.7		2.63
	Fluridone	95.0	80.2	85.8		6.31
	Glufosinate	114	84.7	125		38.1
	Glyphosate	118	116	153		17.3
	Hydrocodone	98.2	67.3	67.7		0.602
	Ibuprofen	79.6	61.2	69.0		12.0
	Imazapyr	91.7	80.3	79.9		0.192
	Imidacloprid	92.7	109	113		3.67
	Linuron	77.2	37.9	43.5		13.6
	MCPP	96.9	158	180		12.7
	Naproxen	87.0	62.5	65.8		5.17
	Primidone	92.8	70.9	74.4		4.81
	Pyraclostrobin	75.4	55.9	68.0		19.5
	Sucralose	80.6	109	87.6		21.3
	Sucralose	99.4	101	109		5.41
	Triclopyr	70.5	83.2	109		26.7
SM 2120 B	Color (true)	101			3.54	
SM 2320 B-97	Total Alkalinity	102			0.494	
SM 2540 C-97	TDS				7.65	
SM 4500 F-C-97	Fluoride	98.4				0.509
SM 5310 B-00	Organic Carbon	97.5	98.7	96.4		1.50

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2058093
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2058093
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2058093
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2058094
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2058094
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2058094
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2058095

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2058107, 2058108
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2058107, 2058108
SM 2120 B / E31780	True Color measured at 450 nm	2058093
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2058093
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2058093
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2058093
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2058093
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2058094

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	01/30/2019			01/30/2019 16:34	Adrian Shelby	2058093
EPA 300.0 Rev. 2.1	01/30/2019			02/06/2019 16:19	Lipi Saha	2058093
EPA 350.1 Rev. 2.0	01/30/2019			02/01/2019 13:29	Ping Hua	2058094
EPA 351.2 Rev. 2.0	01/30/2019	02/07/2019 10:50	Adrian Shelby	02/08/2019 09:29	Joseph Suarez	2058094
EPA 353.2 Rev. 2.0	01/30/2019			01/31/2019 10:34	Beverly Y. Sanders	2058094
EPA 365.1 Rev. 2.0 dissolved	01/30/2019			01/30/2019 15:29	Jhamieka S. Greenwood	2058095
EPA 8321B	01/30/2019	02/01/2019 09:00	Hoor Shaik	02/02/2019 04:33	Juyoung Kim	2058107
	01/30/2019	02/01/2019 09:00	Hoor Shaik	02/02/2019 05:07	Juyoung Kim	2058108
	01/30/2019	02/01/2019 09:00	Rebecca Ware	02/01/2019 14:25	Rebecca Ware	2058107
	01/30/2019	02/01/2019 09:00	Rebecca Ware	02/01/2019 14:46	Rebecca Ware	2058108
	01/30/2019	02/01/2019 09:00	Rebecca Ware	02/03/2019 03:12	Rebecca Ware	2058107
	01/30/2019	02/01/2019 09:00	Rebecca Ware	02/03/2019 03:25	Rebecca Ware	2058108
	01/30/2019	02/08/2019 12:30	Mohammad Ghaffari	02/16/2019 01:25	Mohammad Ghaffari	2058108
	01/30/2019	02/13/2019 14:30	Rebecca Ware	02/16/2019 06:01	Mohammad Ghaffari	2058107
SM 2120 B	01/30/2019			01/30/2019 16:05	Chelsea Hernandez	2058093
SM 2320 B-97	01/30/2019			02/07/2019 13:21	Dale L. Simmons	2058093
SM 2540 C-97	01/30/2019			02/01/2019 13:08	Yijie Li	2058093
SM 2540 D-97	01/30/2019			02/01/2019 13:08	Yijie Li	2058093
SM 4500 F-C-97	01/30/2019			02/07/2019 13:21	Dale L. Simmons	2058093
SM 5310 B-00	01/30/2019			02/02/2019 00:22	Julia Storbeck	2058094