

Chemical Analysis Report

SO-DIST-2020-02-11-01

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

Event Description: **2020 SMP : Alva to LaBelle**
Request ID: **RQ-2020-02-10-56**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Date Certified: 04-MAR-2020 12:47



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: Cypress Creek @NRiverRd

Collection Date/Time: 02/10/2020 11:10

Field ID: G3SD0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156391	EPA 8321B	2,4-D	0.0032	I	ug/L	P378656	
		Acesulfame K**	0.10	U	ug/L	P378657	
		AMPA**	0.27	I	ug/L	P378657	
		Sucralose**	0.039	I	ug/L	P378657	
		Acetaminophen**	0.0080	U	ug/L	P378656	
		Acetamiprid**	0.0020	U	ug/L	P378656	
		Endothall**	0.25	U	ug/L	P378657	
		Glufosinate**	0.10	U	ug/L	P378657	
		Glyphosate**	0.44		ug/L	P378657	
		Afidopyropen**	0.0020	UJ	ug/L	P378656	
		Bentazon	0.0045		ug/L	P378656	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378656	
		Carbamazepine**	8.0E-04	U	ug/L	P378656	
		Clothianidin**	0.013		ug/L	P378656	
		Dinotefuran**	0.0024	I	ug/L	P378656	
		Diuron	0.0040	I	ug/L	P378656	
		Fenuron	0.016	U	ug/L	P378656	
		Fluridone**	0.0020	I	ug/L	P378656	
		Imazapyr**	0.022		ug/L	P378656	
		Hydrocodone**	0.0020	U	ug/L	P378656	
		Ibuprofen**	0.020	U	ug/L	P378656	
		Imidacloprid	0.011		ug/L	P378656	MS
		Linuron	0.0040	U	ug/L	P378656	
		Mandestrobin**	0.0020	UJ	ug/L	P378656	
		MCPP	0.0020	U	ug/L	P378656	
		Naproxen**	0.0080	U	ug/L	P378656	
		Primidone**	0.0040	U	ug/L	P378656	
		Pyraclostrobin**	0.0020	U	ug/L	P378656	
		Thiamethoxam**	0.010		ug/L	P378656	
		Tolfenpyrad**	0.0020	U	ug/L	P378656	
		Triclopyr**	0.0040	U	ug/L	P378656	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: BeeBranch@LoblollyBayRd

Collection Date/Time: 02/10/2020 11:50

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156381	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P378690	
	EPA 300.0 Rev. 2.1	Chloride	38	A	mg Cl/L	P379492	
		Sulfate	22	A	mg SO4/L	P379495	
	SM 2120 B-2011	Color (true)	160		PCU	P378703	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P379405	
	SM 2540 C-2011	TDS	176		mg/L	P379103	
	SM 2540 D-2011	TSS	2	U	mg/L	P378962	
	SM 4500 F-C-2011	Fluoride	0.094	I	mg F/L	P379408	
2156382	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P379082	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P378924	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P379428	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P379278	MS
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P378968	
2156383	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P378695	
2156390	EPA 8321B	2,4-D	0.0020	U	ug/L	P378656	
		Acesulfame K**	0.10	U	ug/L	P378657	
		AMPA**	0.34	I	ug/L	P378657	
		Sucralose**	0.010	U	ug/L	P378657	
		Acetaminophen**	0.0080	U	ug/L	P378656	
		Acetamiprid**	0.0020	U	ug/L	P378656	
		Endothall**	0.25	U	ug/L	P378657	
		Glufosinate**	0.10	U	ug/L	P378657	
		Glyphosate**	0.37	I	ug/L	P378657	
		Afidopyropen**	0.0020	UJ	ug/L	P378656	
		Bentazon	8.0E-04	U	ug/L	P378656	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378656	
		Carbamazepine**	8.0E-04	U	ug/L	P378656	
		Clothianidin**	0.0020	U	ug/L	P378656	
		Dinotefuran**	0.0020	U	ug/L	P378656	
		Diuron	0.0032	I	ug/L	P378656	
		Fenuron	0.016	U	ug/L	P378656	
		Fluridone**	8.0E-04	U	ug/L	P378656	
		Imazapyr**	0.0040	U	ug/L	P378656	
		Hydrocodone**	0.0020	U	ug/L	P378656	
		Ibuprofen**	0.020	U	ug/L	P378656	
		Imidacloprid	0.0085		ug/L	P378656	MS
		Linuron	0.0040	U	ug/L	P378656	
		Mandestrobin**	0.0020	UJ	ug/L	P378656	
		MCP	0.0020	U	ug/L	P378656	
		Naproxen**	0.0080	U	ug/L	P378656	
		Primidone**	0.0040	U	ug/L	P378656	
		Pyraclostrobin**	0.0020	U	ug/L	P378656	
		Thiamethoxam**	0.0020	U	ug/L	P378656	

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156390	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P378656	
		Triclopyr**	0.0040	U	ug/L	P378656	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: PollywogCreek@SR78

Collection Date/Time: 02/10/2020 12:30

Field ID: G3SD0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156392	EPA 8321B	2,4-D	0.0020	U	ug/L	P378656	
		Acesulfame K**	0.21	I	ug/L	P378657	
		AMPA**	0.10	U	ug/L	P378657	
		Sucralose**	0.48		ug/L	P378657	
		Acetaminophen**	0.0080	U	ug/L	P378656	
		Acetamiprid**	0.0020	U	ug/L	P378656	
		Endothall**	0.25	U	ug/L	P378657	
		Glufosinate**	0.10	U	ug/L	P378657	
		Glyphosate**	0.10	U	ug/L	P378657	
		Afidopyropen**	0.0020	UJ	ug/L	P378656	
		Bentazon	8.0E-04	U	ug/L	P378656	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378656	
		Carbamazepine**	0.0070		ug/L	P378656	
		Clothianidin**	0.0020	U	ug/L	P378656	
		Dinotefuran**	0.0020	U	ug/L	P378656	
		Diuron	0.0020	U	ug/L	P378656	
		Fenuron	0.016	U	ug/L	P378656	
		Fluridone**	8.0E-04	U	ug/L	P378656	
		Imazapyr**	0.0048	I	ug/L	P378656	
		Hydrocodone**	0.0020	U	ug/L	P378656	
		Ibuprofen**	0.020	U	ug/L	P378656	
		Imidacloprid	0.0025	I	ug/L	P378656	MS
		Linuron	0.0040	U	ug/L	P378656	
		Mandestrobin**	0.0020	UJ	ug/L	P378656	
		MCPP	0.0020	U	ug/L	P378656	
		Naproxen**	0.0080	U	ug/L	P378656	
		Primidone**	0.0040	U	ug/L	P378656	
		Pyraclostrobin**	0.0020	U	ug/L	P378656	
		Thiamethoxam**	0.0020	U	ug/L	P378656	
		Tolfenpyrad**	0.0020	U	ug/L	P378656	
		Triclopyr**	0.0040	U	ug/L	P378656	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr 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: P378690

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379492

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379495

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379082

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378924

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379428

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379278

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378695

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

Reference Method: EPA 8321B
Batch ID: P378656

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378656

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P378657

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
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P378703

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P379405

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

Reference Method: SM 2540 C-2011
Batch ID: P379103

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P378962

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P379408

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378968

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: P379492

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379495

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379082

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378924

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379428

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379278

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378695

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

Reference Method: EPA 8321B
Batch ID: P378656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	30 - 160
Acetaminophen	93.0		P	30 - 160
Acetamiprid	89.9		P	30 - 160
Afidopyropen	75.9		P	30 - 160
Bentazon	84.8		P	30 - 160
Benzovindiflupyr	80.0		P	30 - 160
Carbamazepine	89.4		P	30 - 160
Clothianidin	91.1		P	30 - 160
Dinotefuran	90.1		P	30 - 160
Diuron	89.6		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	109		P	30 - 160
Fluridone	87.7		P	30 - 160
Hydrocodone	101		P	30 - 160
Ibuprofen	76.8		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	109		P	30 - 160
Linuron	70.7		P	30 - 160
Mandestrobin	83.6		P	30 - 160
MCPP	122		P	30 - 160
Naproxen	77.0		P	30 - 160
Primidone	98.2		P	30 - 160
Pyraclostrobin	76.4		P	30 - 160
Thiamethoxam	69.0		P	30 - 160
Tolfenpyrad	49.7		P	30 - 160
Triclopyr	95.5		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378657

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	100		P	40 - 150
AMPA	124		P	40 - 150
Endothall	94.3		P	40 - 150
Glufosinate	111		P	40 - 150
Glyphosate	140		P	40 - 140
Sucralose	98.2		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P378703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P379405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P379408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P378968

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156270	Chloride	102		P	90 - 110
2156381	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156270	Sulfate	101		P	90 - 110
2156381	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157363	Ammonia-N	96.8	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156338	Kjeldahl Nitrogen	102	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156361	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156285	Total-P	106	110	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156455	O-Phosphate-P	95.6	96.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P378656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156209	2,4-D	133	127	P/P	30 - 160
2156209	Acetaminophen	100	106	P/P	30 - 160
2156209	Acetamiprid	93.4	83.3	P/P	30 - 160
2156209	Afidopyrophen	97.8	86.7	P/P	30 - 160
2156209	Bentazon	72.7	69.3	P/P	30 - 160
2156209	Benzovindiflupyr	84.7	80.7	P/P	30 - 160
2156209	Carbamazepine	88.3	71.8	P/P	30 - 160
2156209	Clothianidin	99.7	83.6	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156209	Dinotefuran	112	103	P/P	30 - 160
2156209	Diuron	77.2	76.9	P/P	30 - 160
2156209	Fenuron	76.7	88.4	P/P	30 - 160
2156209	Fluridone	86.7	85.7	P/P	30 - 160
2156209	Hydrocodone	93.6	107	P/P	30 - 160
2156209	Ibuprofen	81.7	84.0	P/P	30 - 160
2156209	Imidacloprid	163	172	F/F	30 - 160
2156209	Linuron	66.9	65.0	P/P	30 - 160
2156209	Mandestrobin	84.3	83.1	P/P	30 - 160
2156209	MCPP	133	131	P/P	30 - 160
2156209	Naproxen	99.7	102	P/P	30 - 160
2156209	Primidone	103	96.6	P/P	30 - 160
2156209	Pyraclostrobin	81.7	84.6	P/P	30 - 160
2156209	Thiamethoxam	132	113	P/P	30 - 160
2156209	Tolfenpyrad	49.2	55.7	P/P	30 - 160
2156209	Triclopyr	106	108	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156136	Acesulfame K	41.8	42.7	P/P	40 - 150
2156136	AMPA	104	102	P/P	40 - 150
2156136	Endothall	113	112	P/P	40 - 150
2156136	Glufosinate	120	121	P/P	40 - 150
2156136	Glyphosate	120	120	P/P	40 - 140
2156136	Sucralose	109	102	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P379408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157223	Fluoride	98.1	99.9	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156427	Organic Carbon	96.4	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156426	Turbidity	0.443	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156381	Chloride	0.612	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P379495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156381	Sulfate	0.306	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P379082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157363	Ammonia-N	2.60	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156338	Kjeldahl Nitrogen	3.99	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P379428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156361	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156285	Total-P	2.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156455	O-Phosphate-P	0.881	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P378656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156209	2,4-D	4.03	Spike	P	0 - 30
2156209	Acetaminophen	4.95	Spike	P	0 - 30
2156209	Acetamiprid	11.4	Spike	P	0 - 30
2156209	Afidopyropen	12.0	Spike	P	0 - 30
2156209	Bentazon	4.81	Spike	P	0 - 30
2156209	Benzovindiflupyr	4.87	Spike	P	0 - 30
2156209	Carbamazepine	20.5	Spike	P	0 - 30
2156209	Clothianidin	16.4	Spike	P	0 - 30
2156209	Dinotefuran	8.57	Spike	P	0 - 30
2156209	Diuron	0.306	Spike	P	0 - 30
2156209	Fenuron	14.1	Spike	P	0 - 30
2156209	Fluridone	1.17	Spike	P	0 - 30
2156209	Hydrocodone	13.7	Spike	P	0 - 30
2156209	Ibuprofen	2.75	Spike	P	0 - 30
2156209	Imazapyr	0.0409	Spike	P	0 - 30
2156209	Imidacloprid	4.52	Spike	P	0 - 30
2156209	Linuron	2.85	Spike	P	0 - 30
2156209	Mandestrobin	1.43	Spike	P	0 - 30
2156209	MCPP	1.48	Spike	P	0 - 30
2156209	Naproxen	2.70	Spike	P	0 - 30
2156209	Primidone	6.40	Spike	P	0 - 30
2156209	Pyraclostrobin	3.55	Spike	P	0 - 30
2156209	Thiamethoxam	14.7	Spike	P	0 - 30
2156209	Tolfenpyrad	12.5	Spike	P	0 - 30
2156209	Triclopyr	1.73	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P378657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156136	Acesulfame K	2.00	Spike	P	0 - 30
2156136	AMPA	1.82	Spike	P	0 - 30
2156136	Endothall	0.738	Spike	P	0 - 30
2156136	Glufosinate	0.896	Spike	P	0 - 30
2156136	Glyphosate	0.0723	Spike	P	0 - 30
2156136	Sucralose	5.80	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P378703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156451	Color (true)	3.51	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P379405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157223	Total Alkalinity	0.373	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P379103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156336	TDS	2.08	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P379408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157223	Fluoride	1.48	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P378968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156427	Organic Carbon	1.06	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2156390
Field Sample ID: G3SD0085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.6	P	30 - 160
EPA 8321B	Diuron-d6	71.7	P	30 - 160
EPA 8321B	Endothall-d6	98.4	P	30 - 160
EPA 8321B	Endothall-d6	98.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.6	P	30 - 160
EPA 8321B	Primidone-d5	96.9	P	30 - 160
EPA 8321B	Sucralose-d6	40.6	P	30 - 160
EPA 8321B	Sucralose-d6	40.6	P	30 - 160

Lab Sample ID: 2156391
Field Sample ID: G3SD0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	117	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.7	P	30 - 160
EPA 8321B	Diuron-d6	69.1	P	30 - 160
EPA 8321B	Endothall-d6	115	P	30 - 160
EPA 8321B	Endothall-d6	115	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	66.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	66.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	90.4	P	30 - 160
EPA 8321B	Primidone-d5	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2156392
Field Sample ID: G3SD0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.6	P	30 - 160
EPA 8321B	Diuron-d6	73.5	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.2	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	87.5	P	30 - 160
EPA 8321B	Sucralose-d6	87.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97441

Included Lab Sample IDs: 2156381

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97443

Included Lab Sample IDs: 2156383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97448

Included Lab Sample IDs: 2156381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A97533

Included Lab Sample IDs: 2156390, 2156391, 2156392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.7	91.4	P/P	50 - 150
Acetaminophen	107	103	P/P	60 - 160
Acetamiprid	103	104	P/P	50 - 150
Afidopyropen	106	90.8	P/P	50 - 150
Bentazon	106	106	P/P	50 - 160
Benzovindiflupyr	102	96.9	P/P	50 - 150
Carbamazepine	106	103	P/P	60 - 150
Clothianidin	114	97.4	P/P	60 - 150
Dinotefuran	115	95.1	P/P	50 - 150
Diuron	118	119	P/P	60 - 150
Fenuron	107	90.1	P/P	60 - 150
Fluridone	99.3	106	P/P	60 - 160
Hydrocodone	112	107	P/P	60 - 150
Ibuprofen	106	100	P/P	50 - 160
Imazapyr	118	100	P/P	50 - 150
Imidacloprid	101	109	P/P	60 - 150
Linuron	110	102	P/P	60 - 150
Mandestrobin	99.5	94.6	P/P	50 - 150
MCPP	86.1	86.3	P/P	50 - 150
Naproxen	74.5	146	P/P	50 - 160
Primidone	113	105	P/P	60 - 150
Pyraclostrobin	105	104	P/P	60 - 150
Thiamethoxam	111	95.6	P/P	50 - 150
Tolfenpyrad	99.5	98.2	P/P	60 - 150
Triclopyr	98.5	92.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A97553

Included Lab Sample IDs: 2156382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97582

Included Lab Sample IDs: 2156382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.1	93.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97592

Included Lab Sample IDs: 2156382

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

Reference Method: EPA 8321B

Run ID: A97601

Included Lab Sample IDs: 2156390, 2156391, 2156392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	101	P/P	60 - 160
Endothall	92.4	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97612

Included Lab Sample IDs: 2156390, 2156391, 2156392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	129	128	P/P	60 - 160
Glufosinate	118	124	P/P	60 - 160
Glyphosate	143	133	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97638

Included Lab Sample IDs: 2156381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.8	97.9	P/P	90 - 110
Sulfate	97.4	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97722

Included Lab Sample IDs: 2156382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A97738

Included Lab Sample IDs: 2156381

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

Reference Method: SM 4500 F-C-2011

Run ID: A97738

Included Lab Sample IDs: 2156381

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97741

Included Lab Sample IDs: 2156382

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

Reference Method: EPA 8321B

Run ID: A97805

Included Lab Sample IDs: 2156390, 2156391, 2156392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.0	98.3	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.443	
EPA 300.0 Rev. 2.1	Chloride	101	100	102		0.612	
	Sulfate	102	101	101		0.306	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.8	99.6			2.60
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	102	109			3.99
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	104	106	110			2.89
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	95.6	96.5			0.881
EPA 8321B	2,4-D	122	133	127			4.03
	Acesulfame K	100	41.8	42.7			2.00
	Acetaminophen	93.0	100	106			4.95
	Acetamiprid	89.9	93.4	83.3			11.4
	Afidopyropen	75.9	97.8	86.7			12.0
	AMPA	124	104	102			1.82
	Bentazon	84.8	72.7	69.3			4.81
	Benzovindiflupyr	80.0	84.7	80.7			4.87
	Carbamazepine	89.4	88.3	71.8			20.5
	Clothianidin	91.1	99.7	83.6			16.4
	Dinotefuran	90.1	112	103			8.57
	Diuron	89.6	77.2	76.9			0.306
	Endothall	94.3	113	112			0.738
	Fenuron	109	76.7	88.4			14.1
	Fluridone	87.7	86.7	85.7			1.17
	Glufosinate	111	120	121			0.896
	Glyphosate	140	120	120			0.0723
	Hydrocodone	101	93.6	107			13.7
	Ibuprofen	76.8	81.7	84.0			2.75
	Imazapyr	105					0.0409
	Imidacloprid	109	163	172			4.52
	Linuron	70.7	66.9	65.0			2.85
	Mandestrobin	83.6	84.3	83.1			1.43
	MCPP	122	133	131			1.48
	Naproxen	77.0	99.7	102			2.70
	Primidone	98.2	103	96.6			6.40
	Pyraclostrobin	76.4	81.7	84.6			3.55
	Sucralose	98.2	109	102			5.80
	Thiamethoxam	69.0	132	113			14.7
	Tolfenpyrad	49.7	49.2	55.7			12.5
	Triclopyr	95.5	106	108			1.73
SM 2120 B-2011	Color (true)	100				3.51	
SM 2320 B-2011	Total Alkalinity	104				0.373	
SM 2540 C-2011	TDS					2.08	
SM 4500 F-C-2011	Fluoride	97.9	98.1	99.9			1.48
SM 5310 B-2011	Organic Carbon	99.6	96.4	97.8			1.06

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2156381
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2156381
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2156381
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2156382
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2156382

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2156382
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2156382
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2156383
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2156390, 2156391, 2156392
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2156390, 2156391, 2156392
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2156381
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2156381
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2156381
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2156381
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2156381
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2156382

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	02/11/2020			02/11/2020 14:57	Yen Ta	2156381
EPA 300.0 Rev. 2.1	02/11/2020			02/21/2020 04:02	Elliott Rodriguez	2156381
EPA 350.1 Rev. 2.0	02/11/2020			02/17/2020 09:45	Ping Hua	2156382
EPA 351.2 Rev. 2.0	02/11/2020	02/14/2020 09:30	Elliott Rodriguez	02/17/2020 15:07	Jhamieka S. Greenwood	2156382
EPA 353.2 Rev. 2.0	02/11/2020			02/20/2020 11:20	Beverly Y. Sanders	2156382
EPA 365.1 Rev. 2.0	02/11/2020	02/20/2020 15:00	Lipi Saha	02/21/2020 14:46	Benjamin T. Nordmann	2156382
EPA 365.1 Rev. 2.0 dissolved	02/11/2020			02/11/2020 15:13	Carlos Miranda	2156383
EPA 8321B	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 00:55	Rebecca Ware	2156390
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 01:09	Rebecca Ware	2156391
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 01:23	Rebecca Ware	2156392
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 20:50	Rebecca Ware	2156390
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 21:01	Rebecca Ware	2156391
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/12/2020 21:12	Rebecca Ware	2156392
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/23/2020 00:31	Rebecca Ware	2156390
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/23/2020 00:45	Rebecca Ware	2156391
	02/11/2020	02/11/2020 13:45	Rebecca Ware	02/23/2020 00:59	Rebecca Ware	2156392
	02/11/2020	02/12/2020 09:30	Hoor Shaik	02/15/2020 05:29	Juyoung Kim	2156390
	02/11/2020	02/12/2020 09:30	Hoor Shaik	02/15/2020 06:03	Juyoung Kim	2156391
	02/11/2020	02/12/2020 09:30	Hoor Shaik	02/15/2020 06:38	Juyoung Kim	2156392
SM 2120 B-2011	02/11/2020			02/11/2020 16:37	Madeline Funaro	2156381
SM 2320 B-2011	02/11/2020			02/21/2020 00:17	Dale L. Simmons	2156381
SM 2540 C-2011	02/11/2020			02/12/2020 17:00	Blanca Fach	2156381
SM 2540 D-2011	02/11/2020			02/12/2020 17:00	Blanca Fach	2156381
SM 4500 F-C-2011	02/11/2020			02/21/2020 00:17	Dale L. Simmons	2156381
SM 5310 B-2011	02/11/2020			02/14/2020 00:55	Lauren Lees	2156382