

Chemical Analysis Report

SW-DIST-2019-12-27-01

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

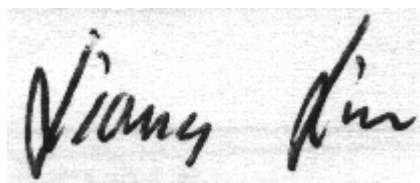
Event Description: **SMP - Lil Man North, Sims**
Request ID: **RQ-2019-12-16-48**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 17-JAN-2020 16:24

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Sims Branch @ Port Redwing

Collection Date/Time: 12/26/2019 10:55

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146163	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P377144	
	EPA 300.0 Rev. 2.1	Chloride	9.7E+03		mg Cl/L	P376811	
		Sulfate	1.4E+03		mg SO4/L	P376815	
	SM 2120 B-2011	Color (true)	6.1	A	PCU	P376487	
	SM 2320 B-2011	Total Alkalinity	161		mg CaCO3/L	P376671	
	SM 2540 C-2011	TDS	1.65E+04		mg/L	P376703	
	SM 2540 D-2011	TSS	4	IA	mg/L	P376615	
	SM 4500 F-C-2011	Fluoride	0.88		mg F/L	P376923	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P376742	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P376667	
2146164	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P376524	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P376655	
	SM 5310 B-2011	Organic Carbon	4.3		mg C/L	P376572	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.089		mg P/L	P376485	
	dissolved						

Ref. Method and Comment:

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

Sample Location: Little Manatee River N.Fork

Collection Date/Time: 12/26/2019 12:10

Field ID: TPLMAN01F

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146178	EPA 8321B	2,4-D	0.0023	I	ug/L	P376470	
		Acesulfame K**	0.10	U	ug/L	P376543	
		AMPA**	1.2		ug/L	P376543	
		Sucralose**	0.032	I	ug/L	P376543	
		Acetaminophen**	0.0080	U	ug/L	P376470	
		Acetamiprid**	0.0020	U	ug/L	P376470	
		Endothall**	0.25	U	ug/L	P376543	
		Glufosinate**	0.10	U	ug/L	P376543	
		Glyphosate**	0.86		ug/L	P376543	
		Afidopyropen**	0.0020	UJ	ug/L	P376470	
		Bentazon	8.0E-04	U	ug/L	P376470	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P376470	
		Carbamazepine**	8.0E-04	U	ug/L	P376470	
		Clothianidin**	0.0079	I	ug/L	P376470	
		Dinotefuran**	0.024		ug/L	P376470	
		Diuron	0.0049	I	ug/L	P376470	
		Fenuron	0.016	U	ug/L	P376470	
		Fluridone**	8.0E-04	U	ug/L	P376470	
		Imazapyr**	0.17		ug/L	P376470	
		Hydrocodone**	0.0020	U	ug/L	P376470	
		Ibuprofen**	0.020	U	ug/L	P376470	
		Imidacloprid	0.034		ug/L	P376470	
		Linuron	0.0040	U	ug/L	P376470	
		Mandestrobin**	0.0020	UJ	ug/L	P376470	
		MCPP	0.0020	U	ug/L	P376470	
		Naproxen**	0.0080	U	ug/L	P376470	
		Primidone**	0.0040	U	ug/L	P376470	RPD
		Pyraclostrobin**	0.0062	I	ug/L	P376470	
		Thiamethoxam**	0.030		ug/L	P376470	
		Tolfenpyrad**	0.0020	U	ug/L	P376470	
		Triclopyr**	0.0040	U	ug/L	P376470	

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: Lil Manatee River N.Fork @ Carlton Lake Rd

Collection Date/Time: 12/26/2019 11:45

Field ID: G2SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2146179	EPA 8321B	2,4-D	0.0035	I	ug/L	P376470	
		Acesulfame K**	0.10	U	ug/L	P376543	
		AMPA**	1.5		ug/L	P376543	
		Sucralose**	0.010	U	ug/L	P376543	
		Acetaminophen**	0.0080	U	ug/L	P376470	
		Acetamiprid**	0.0020	U	ug/L	P376470	
		Endothall**	0.25	U	ug/L	P376543	
		Glufosinate**	0.10	U	ug/L	P376543	
		Glyphosate**	0.91		ug/L	P376543	
		Afidopyropen**	0.0020	UJ	ug/L	P376470	
		Bentazon	8.0E-04	U	ug/L	P376470	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P376470	
		Carbamazepine**	8.0E-04	U	ug/L	P376470	
		Clothianidin**	0.0063	I	ug/L	P376470	
		Dinotefuran**	0.012		ug/L	P376470	
		Diuron	0.0049	I	ug/L	P376470	
		Fenuron	0.016	U	ug/L	P376470	
		Fluridone**	8.0E-04	U	ug/L	P376470	
		Imazapyr**	0.18		ug/L	P376470	
		Hydrocodone**	0.0020	U	ug/L	P376470	
		Ibuprofen**	0.020	U	ug/L	P376470	
		Imidacloprid	0.019		ug/L	P376470	
		Linuron	0.0040	U	ug/L	P376470	
		Mandestrobin**	0.0020	UJ	ug/L	P376470	
		MCPP	0.0020	U	ug/L	P376470	
		Naproxen**	0.0080	U	ug/L	P376470	
		Primidone**	0.0040	U	ug/L	P376470	RPD
		Pyraclostrobin**	0.0030	I	ug/L	P376470	
		Thiamethoxam**	0.0086		ug/L	P376470	
		Tolfenpyrad**	0.0020	U	ug/L	P376470	
		Triclopyr**	0.0040	U	ug/L	P376470	

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: P377144

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376811

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376815

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376742

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376667

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376524

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376655

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376485

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

Reference Method: EPA 8321B
Batch ID: P376470

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: P376470

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: P376543

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: P376487

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P376671

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

Reference Method: SM 2540 C-2011
Batch ID: P376703

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P376615

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P376923

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P376572

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: P376811

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376815

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376667

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376655

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: P376485

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

Reference Method: EPA 8321B
Batch ID: P376470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	150		P	40 - 160
Acetaminophen	94.9		P	30 - 160
Acetamiprid	90.8		P	40 - 160
Afidopyropen	93.4		P	40 - 160
Bentazon	75.4		P	30 - 160
Benzovindiflupyr	102		P	40 - 160
Carbamazepine	78.8		P	40 - 160
Clothianidin	84.8		P	40 - 160
Dinotefuran	88.7		P	40 - 160
Diuron	75.9		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P376470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	87.5		P	40 - 160
Fluridone	92.6		P	40 - 160
Hydrocodone	90.1		P	40 - 160
Ibuprofen	85.3		P	30 - 160
Imazapyr	116		P	40 - 160
Imidacloprid	97.9		P	40 - 160
Linuron	65.4		P	40 - 160
Mandestrobin	92.1		P	40 - 160
MCPP	139		P	40 - 160
Naproxen	92.7		P	40 - 160
Primidone	87.3		P	40 - 160
Pyraclostrobin	79.8		P	30 - 160
Thiamethoxam	97.6		P	40 - 160
Tolfenpyrad	51.4		P	40 - 160
Triclopyr	105		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P376543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	108		P	40 - 150
AMPA	92.5		P	40 - 150
Endothall	68.8		P	40 - 150
Glufosinate	133		P	40 - 150
Glyphosate	105		P	40 - 140
Sucralose	103		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P376487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.7		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P376671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P376923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P376572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2145829	Chloride	99.7		P	90 - 110
2145968	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2145829	Sulfate	101		P	90 - 110
2145968	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146919	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146212	Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146164	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146546	Total-P	95.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146165	O-Phosphate-P	97.6	98.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P376470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146169	2,4-D	113	82.9	P/P	40 - 160
2146169	Acetaminophen	84.7	97.4	P/P	30 - 160
2146169	Acetamiprid	94.4	89.0	P/P	40 - 160
2146169	Afidopyropen	92.7	86.4	P/P	40 - 160
2146169	Bentazon	26.7	44.1	F/P	30 - 160
2146169	Benzovindiflupyr	91.5	91.2	P/P	40 - 160
2146169	Carbamazepine	78.0	83.4	P/P	40 - 160
2146169	Clothianidin	108	81.6	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P376470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146169	Dinotefuran	103	103	P/P	40 - 160
2146169	Diuron	66.3	69.2	P/P	40 - 160
2146169	Fenuron	69.9	61.3	P/P	40 - 160
2146169	Fluridone	77.0	77.4	P/P	40 - 160
2146169	Hydrocodone	101	103	P/P	40 - 160
2146169	Ibuprofen	70.2	64.4	P/P	30 - 160
2146169	Imidacloprid	139	131	P/P	40 - 160
2146169	Linuron	57.0	56.7	P/P	40 - 160
2146169	Mandestrobin	78.8	82.7	P/P	40 - 160
2146169	MCP	118	109	P/P	40 - 160
2146169	Naproxen	76.5	80.7	P/P	40 - 160
2146169	Primidone	55.6	75.9	P/P	40 - 160
2146169	Pyraclostrobin	74.1	70.9	P/P	30 - 160
2146169	Thiamethoxam	134	139	P/P	40 - 160
2146169	Tolfenpyrad	51.1	48.8	P/P	40 - 160
2146169	Triclopyr	103	84.4	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P376543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146150	Acesulfame K	52.9	53.1	P/P	40 - 150
2146150	AMPA	99.5	90.5	P/P	40 - 150
2146150	Endothall	83.3	102	P/P	40 - 150
2146150	Glufosinate	118	111	P/P	40 - 150
2146150	Glyphosate	111	92.6	P/P	40 - 140
2146150	Sucralose	101	96.8	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P376923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2146755	Fluoride	96.0	98.2	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P376572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2145860	Organic Carbon	101	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146158	Turbidity	0.829	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2145829	Chloride	0.325	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2145829	Sulfate	0.123	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146919	Ammonia-N	1.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146212	Kjeldahl Nitrogen	2.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146164	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146546	Total-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P376485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146165	O-Phosphate-P	0.481	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P376470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146169	2,4-D	22.4	Spike	P	0 - 30
2146169	Acetaminophen	14.0	Spike	P	0 - 30
2146169	Acetamiprid	5.86	Spike	P	0 - 30
2146169	Afidopyropen	7.06	Spike	P	0 - 30
2146169	Bentazon	13.6	Spike	P	0 - 30
2146169	Benzovindiflupyr	0.247	Spike	P	0 - 30
2146169	Carbamazepine	6.71	Spike	P	0 - 30
2146169	Clothianidin	26.3	Spike	P	0 - 30
2146169	Dinotefuran	0.229	Spike	P	0 - 30
2146169	Diuron	3.54	Spike	P	0 - 30
2146169	Fenuron	13.1	Spike	P	0 - 30
2146169	Fluridone	0.295	Spike	P	0 - 30
2146169	Hydrocodone	1.67	Spike	P	0 - 30
2146169	Ibuprofen	8.64	Spike	P	0 - 30
2146169	Imazapyr	1.13	Spike	P	0 - 30
2146169	Imidacloprid	5.07	Spike	P	0 - 30
2146169	Linuron	0.426	Spike	P	0 - 30
2146169	Mandestrobin	4.77	Spike	P	0 - 30
2146169	MCPP	7.45	Spike	P	0 - 30
2146169	Naproxen	5.40	Spike	P	0 - 30
2146169	Primidone	30.8	Spike	F	0 - 30
2146169	Pyraclostrobin	4.40	Spike	P	0 - 30
2146169	Thiamethoxam	3.74	Spike	P	0 - 30
2146169	Tolfenpyrad	4.68	Spike	P	0 - 30
2146169	Triclopyr	19.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P376543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146150	Acesulfame K	0.331	Spike	P	0 - 30
2146150	AMPA	7.44	Spike	P	0 - 30
2146150	Endothall	20.4	Spike	P	0 - 30
2146150	Glufosinate	6.42	Spike	P	0 - 30
2146150	Glyphosate	15.3	Spike	P	0 - 30
2146150	Sucralose	1.34	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P376487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146163	Color (true)	12.0	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P376671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146437	Total Alkalinity	0.201	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P376703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146187	TDS	7.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P376923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146755	Fluoride	1.47	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P376572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2145860	Organic Carbon	1.10	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2146178
Field Sample ID: TPLMAN01F

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.4	P	30 - 160
EPA 8321B	Diuron-d6	72.8	P	30 - 160
EPA 8321B	Endothall-d6	47.5	P	30 - 160
EPA 8321B	Endothall-d6	47.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.9	P	30 - 160
EPA 8321B	Primidone-d5	76.7	P	30 - 160
EPA 8321B	Sucralose-d6	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	99.6	P	30 - 160

Lab Sample ID: 2146179
Field Sample ID: G2SW0100

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.6	P	30 - 160
EPA 8321B	Diuron-d6	75.1	P	30 - 160
EPA 8321B	Endothall-d6	42.6	P	30 - 160
EPA 8321B	Endothall-d6	42.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	88.1	P	30 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	73.3	P	30 - 160
EPA 8321B	Sucralose-d6	73.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96592

Included Lab Sample IDs: 2146165

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.6	99.5	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A96593

Included Lab Sample IDs: 2146163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96612

Included Lab Sample IDs: 2146164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A96639

Included Lab Sample IDs: 2146164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96640

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	113	P/P	50 - 150
Acetaminophen	112	108	P/P	60 - 160
Acetamiprid	102	103	P/P	50 - 150
Afidopyropen	112	113	P/P	50 - 150
Bentazon	96.0	99.7	P/P	50 - 160
Benzovindiflupyr	106	113	P/P	50 - 150
Carbamazepine	95.8	96.7	P/P	60 - 150
Clothianidin	84.3	106	P/P	60 - 150
Dinotefuran	94.7	100	P/P	50 - 150
Diuron	109	108	P/P	60 - 150
Fenuron	73.6	110	P/P	60 - 150
Fluridone	116	106	P/P	60 - 160
Hydrocodone	110	115	P/P	60 - 150
Ibuprofen	88.3	89.6	P/P	50 - 160
Imazapyr	112	109	P/P	50 - 150
Imidacloprid	110	100	P/P	60 - 150
Linuron	94.9	92.1	P/P	60 - 150
Mandestrobin	113	110	P/P	50 - 150
MCPP	110	98.2	P/P	50 - 150
Naproxen	102	107	P/P	50 - 160
Primidone	104	106	P/P	60 - 150
Pyraclostrobin	104	107	P/P	60 - 150
Thiamethoxam	118	113	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A96640

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tolfenpyrad	105	104	P/P	60 - 150
Triclopyr	111	104	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A96653

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	119	112	P/P	60 - 160
Endothall	80.0	88.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96676

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	61.8	63.8	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96677

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	106	102	P/P	60 - 160
Glyphosate	85.8	92.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A96698

Included Lab Sample IDs: 2146178, 2146179

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.9	91.6	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A96714

Included Lab Sample IDs: 2146163

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96755

Included Lab Sample IDs: 2146164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96766

Included Lab Sample IDs: 2146164

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96770

Included Lab Sample IDs: 2146163

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96771

Included Lab Sample IDs: 2146164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A96808

Included Lab Sample IDs: 2146163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96892

Included Lab Sample IDs: 2146163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

* 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					0.829	
EPA 300.0 Rev. 2.1	Chloride	103	99.7	99.3		0.325	
	Sulfate	103	101	100		0.123	
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	102	104			1.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.8	104	101			2.85
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.2				0.0
EPA 365.1 Rev. 2.0	Total-P	104	95.0	96.5			1.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	97.6	98.5			0.481
EPA 8321B	2,4-D	150	113	82.9			22.4
	Acesulfame K	108	52.9	53.1			0.331
	Acetaminophen	94.9	84.7	97.4			14.0
	Acetamiprid	90.8	94.4	89.0			5.86
	Afidopyropen	93.4	92.7	86.4			7.06
	AMPA	92.5	99.5	90.5			7.44
	Bentazon	75.4	26.7	44.1			13.6
	Benzovindiflupyr	102	91.5	91.2			0.247
	Carbamazepine	78.8	78.0	83.4			6.71
	Clothianidin	84.8	108	81.6			26.3
	Dinotefuran	88.7	103	103			0.229
	Diuron	75.9	66.3	69.2			3.54
	Endothall	68.8	83.3	102			20.4
	Fenuron	87.5	69.9	61.3			13.1
	Fluridone	92.6	77.0	77.4			0.295
	Glufosinate	133	118	111			6.42
	Glyphosate	105	111	92.6			15.3
	Hydrocodone	90.1	101	103			1.67
	Ibuprofen	85.3	70.2	64.4			8.64
	Imazapyr	116					1.13
	Imidacloprid	97.9	139	131			5.07
	Linuron	65.4	57.0	56.7			0.426
	Mandestrobin	92.1	78.8	82.7			4.77
	MCPP	139	118	109			7.45
	Naproxen	92.7	76.5	80.7			5.40
	Primidone	87.3	55.6	75.9			30.8
	Pyraclostrobin	79.8	74.1	70.9			4.40
	Sucralose	103	101	96.8			1.34
	Thiamethoxam	97.6	134	139			3.74
	Tolfenpyrad	51.4	51.1	48.8			4.68
	Triclopyr	105	103	84.4			19.6
SM 2120 B-2011	Color (true)	98.7				12.0	
SM 2320 B-2011	Total Alkalinity	103				0.201	
SM 2540 C-2011	TDS					7.53	
SM 4500 F-C-2011	Fluoride	97.5	96.0	98.2			1.47
SM 5310 B-2011	Organic Carbon	102	101	99.7			1.10

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2146163
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2146163

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2146163
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2146164
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2146164
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2146164
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2146164
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2146165
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2146178, 2146179
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2146178, 2146179
SM 2120 B-2011 / E31780	True Color measured at 450 nm	2146163
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2146163
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2146163
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2146163
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2146163
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2146164

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	12/27/2019			12/27/2019 15:08	Yen Ta	2146163
EPA 300.0 Rev. 2.1	12/27/2019			01/08/2020 10:58	Jhamieka S. Greenwood	2146163
EPA 350.1 Rev. 2.0	12/27/2019			01/07/2020 14:01	Ping Hua	2146164
EPA 351.2 Rev. 2.0	12/27/2019	01/06/2020 17:22	Jhamieka S. Greenwood	01/08/2020 14:34	Virginia P. Brown	2146164
EPA 353.2 Rev. 2.0	12/27/2019			12/30/2019 09:16	Beverly Y. Sanders	2146164
EPA 365.1 Rev. 2.0	12/27/2019	01/06/2020 14:41	Yen Ta	01/07/2020 13:04	Benjamin T. Nordmann	2146164
EPA 365.1 Rev. 2.0 dissolved	12/27/2019			12/27/2019 15:03	Samantha Davila	2146165
EPA 8321B	12/27/2019	12/30/2019 09:00	Hoor Shaik	12/31/2019 05:26	Juyoung Kim	2146178
	12/27/2019	12/30/2019 09:00	Hoor Shaik	12/31/2019 06:00	Juyoung Kim	2146179
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	01/03/2020 14:09	Rebecca Ware	2146178
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	01/03/2020 14:21	Rebecca Ware	2146179
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	12/30/2019 18:47	Rebecca Ware	2146178
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	12/30/2019 19:01	Rebecca Ware	2146179
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	12/31/2019 16:15	Rebecca Ware	2146178
	12/27/2019	12/30/2019 12:30	Mohammad Ghaffari	12/31/2019 16:25	Rebecca Ware	2146179
SM 2120 B-2011	12/27/2019			12/27/2019 15:13	Madeline Funaro	2146163
SM 2320 B-2011	12/27/2019			01/06/2020 23:23	Dale L. Simmons	2146163
SM 2540 C-2011	12/27/2019			12/30/2019 14:10	Yijie Li	2146163
SM 2540 D-2011	12/27/2019			12/30/2019 14:10	Yijie Li	2146163
SM 4500 F-C-2011	12/27/2019			01/09/2020 02:05	Dale L. Simmons	2146163
SM 5310 B-2011	12/27/2019			12/31/2019 04:57	Madeline Funaro	2146164