

Chemical Analysis Report

NE-DIST-2019-08-07-02

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

Event Description: **Suwannee South**
Request ID: **RQ-2019-08-05-23**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-AUG-2019 13:37

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: LITTLE WACCASASSA RIVER 0.5 MILE DOWN FROM BLUE SPRINGS **Collection Date/Time: 08/06/2019 11:00**

Field ID: 23020032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109115	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P368631	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P369055	
		Sulfate	1.2		mg SO4/L	P369057	
	SM 2120 B	Color (true)	56		PCU	P368613	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO3/L	P369140	
	SM 2540 C-97	TDS	121		mg/L	P369206	
	SM 2540 D-97	TSS	2	I	mg/L	P369314	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P369144	
2109116	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P369084	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P368697	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.83		mg N/L	P368951	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P368711	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P368743	
2109117	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P368626	
2109129	EPA 8321B	2,4-D	0.0020	U	ug/L	P368283	
		Acesulfame K**	0.10	U	ug/L	P368683	
		AMPA**	0.10	U	ug/L	P368683	
		Sucralose**	0.010	U	ug/L	P368683	
		Acetaminophen**	0.0080	U	ug/L	P368283	
		Endothall**	0.25	U	ug/L	P368683	
		Acetamiprid**	0.0020	U	ug/L	P368283	
		Glufosinate**	0.10	U	ug/L	P368683	
		Glyphosate**	0.10	U	ug/L	P368683	
		Afidopyropen**	0.0020	UJ	ug/L	P368283	
		Bentazon	8.0E-04	U	ug/L	P368283	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P368283	
		Carbamazepine**	8.0E-04	U	ug/L	P368283	
		Clothianidin**	0.0020	U	ug/L	P368283	
		Dinotefuran**	0.0020	U	ug/L	P368283	
		Diuron	0.0020	U	ug/L	P368283	
		Fenuron	0.016	U	ug/L	P368283	
		Fluridone**	8.0E-04	U	ug/L	P368283	
		Imazapyr**	0.0040	U	ug/L	P368283	
		Hydrocodone**	0.0020	U	ug/L	P368283	
		Ibuprofen**	0.020	U	ug/L	P368283	
		Imidacloprid	0.0020	U	ug/L	P368283	MS
		Linuron	0.0040	U	ug/L	P368283	
		Mandestrobin**	0.0020	UJ	ug/L	P368283	
		MCP	0.0020	U	ug/L	P368283	
		Naproxen**	0.0080	U	ug/L	P368283	
		Primidone**	0.0040	U	ug/L	P368283	
		Pyraclostrobin**	0.0020	U	ug/L	P368283	

Field ID: 23020032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109129	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P368283	
		Tolfenpyrad**	0.0020	UJ	ug/L	P368283	LCS, MS, RPD
		Triclopyr**	0.0040	U	ug/L	P368283	

Ref. Method and Comment:

SM 2540 D-97: 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. 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: P368631

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369055

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369057

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369084

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368697

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368951

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368711

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368626

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

Reference Method: EPA 8321B
Batch ID: P368283

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: P368283

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: P368683

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
 Batch ID: P368613

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
 Batch ID: P369140

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

Reference Method: SM 2540 C-97
 Batch ID: P369206

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P369314

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P369144

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368743

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: P369055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369084

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368697

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368951

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368711

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: P368626

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

Reference Method: EPA 8321B
Batch ID: P368283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	40 - 160
Acetaminophen	82.3		P	30 - 160
Acetamiprid	95.7		P	40 - 160
Afidopyropen	87.3		P	40 - 160
Bentazon	135		P	30 - 160
Benzovindiflupyr	67.6		P	40 - 160
Carbamazepine	106		P	40 - 160
Clothianidin	95.2		P	40 - 160
Dinotefuran	99.0		P	40 - 160
Diuron	91.5		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P368283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	99.2		P	40 - 160
Fluridone	88.0		P	40 - 160
Hydrocodone	95.2		P	40 - 160
Ibuprofen	88.7		P	30 - 160
Imazapyr	98.3		P	40 - 160
Imidacloprid	85.1		P	40 - 160
Linuron	77.0		P	40 - 160
Mandestrobin	84.6		P	40 - 160
MCPP	121		P	40 - 160
Naproxen	67.2		P	40 - 160
Primidone	93.6		P	40 - 160
Pyraclostrobin	58.2		P	30 - 160
Thiamethoxam	98.3		P	40 - 160
Tolfenpyrad	22.5		F	40 - 160
Triclopyr	94.1		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P368683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.2		P	40 - 150
AMPA	122		P	40 - 150
Endothall	144		P	40 - 150
Glufosinate	96.3		P	40 - 150
Glyphosate	111		P	40 - 140
Sucralose	96.0		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P368613

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

Reference Method: SM 2320 B-97
Batch ID: P369140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P369144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368743

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108839	Chloride	94.1		P	90 - 110
2109087	Chloride	93.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108839	Sulfate	99.6		P	90 - 110
2109087	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109098	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108906	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109089	NO2NO3-N	97.0	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109116	Total-P	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109146	O-Phosphate-P	98.2	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P368283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108501	2,4-D	125	136	P/P	40 - 160
2108501	Acetaminophen	87.4	103	P/P	30 - 160
2108501	Acetamiprid	108	114	P/P	40 - 160
2108501	Afidopyrophen	97.5	103	P/P	40 - 160
2108501	Bentazon	93.2	97.8	P/P	30 - 160
2108501	Benzovindiflupyr	84.4	102	P/P	40 - 160
2108501	Carbamazepine	111	118	P/P	40 - 160
2108501	Clothianidin	107	119	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P368283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2108501	Dinotefuran	120	129	P/P	40 - 160
2108501	Diuron	78.7	88.7	P/P	40 - 160
2108501	Fenuron	103	105	P/P	40 - 160
2108501	Fluridone	97.8	105	P/P	40 - 160
2108501	Hydrocodone	113	117	P/P	40 - 160
2108501	Ibuprofen	86.9	88.1	P/P	30 - 160
2108501	Imazapyr	133	144	P/P	40 - 160
2108501	Imidacloprid	144	161	P/F	40 - 160
2108501	Linuron	77.8	94.4	P/P	40 - 160
2108501	Mandestrobin	93.3	111	P/P	40 - 160
2108501	MCP	150	151	P/P	40 - 160
2108501	Naproxen	102	97.0	P/P	40 - 160
2108501	Primidone	99.5	110	P/P	40 - 160
2108501	Pyraclostrobin	73.0	91.8	P/P	30 - 160
2108501	Thiamethoxam	138	154	P/P	40 - 160
2108501	Tolfenpyrad	30.8	53.2	F/P	40 - 160
2108501	Triclopyr	90.4	96.4	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P368683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109110	Acesulfame K	63.6	83.3	P/P	40 - 150
2109110	AMPA	96.7	88.3	P/P	40 - 150
2109110	Endothall	112	115	P/P	40 - 150
2109110	Glufosinate	104	103	P/P	40 - 150
2109110	Glyphosate	77.0	94.5	P/P	40 - 140
2109110	Sucralose	97.7	92.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P369144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109610	Fluoride	101	99.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109307	Organic Carbon	99.3	99.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109086	Turbidity	8.00	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108839	Chloride	0.605	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P369057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108839	Sulfate	0.688	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P369084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109098	Ammonia-N	0.540	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108906	Kjeldahl Nitrogen	0.558	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109089	NO2NO3-N	0.147	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109116	Total-P	2.20	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109146	O-Phosphate-P	0.102	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P368283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2108501	2,4-D	8.08	Spike	P	0 - 30
2108501	Acetaminophen	13.7	Spike	P	0 - 30
2108501	Acetamiprid	5.39	Spike	P	0 - 30
2108501	Afidopyropen	5.07	Spike	P	0 - 30
2108501	Bentazon	4.37	Spike	P	0 - 30
2108501	Benzovindiflupyr	18.7	Spike	P	0 - 30
2108501	Carbamazepine	6.53	Spike	P	0 - 30
2108501	Clothianidin	10.8	Spike	P	0 - 30
2108501	Dinotefuran	7.20	Spike	P	0 - 30
2108501	Diuron	10.1	Spike	P	0 - 30
2108501	Fenuron	1.76	Spike	P	0 - 30
2108501	Fluridone	6.06	Spike	P	0 - 30
2108501	Hydrocodone	3.53	Spike	P	0 - 30
2108501	Ibuprofen	1.43	Spike	P	0 - 30
2108501	Imazapyr	7.76	Spike	P	0 - 30
2108501	Imidacloprid	6.99	Spike	P	0 - 30
2108501	Linuron	19.3	Spike	P	0 - 30
2108501	Mandestrobin	17.3	Spike	P	0 - 30
2108501	MCPP	0.712	Spike	P	0 - 30
2108501	Naproxen	5.24	Spike	P	0 - 30
2108501	Primidone	10.3	Spike	P	0 - 30
2108501	Pyraclostrobin	22.8	Spike	P	0 - 30
2108501	Thiamethoxam	10.7	Spike	P	0 - 30
2108501	Tolfenpyrad	53.3	Spike	F	0 - 30
2108501	Triclopyr	6.43	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P368683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109110	Acesulfame K	26.9	Spike	P	0 - 30
2109110	AMPA	6.28	Spike	P	0 - 30
2109110	Endothall	2.75	Spike	P	0 - 30
2109110	Glufosinate	1.06	Spike	P	0 - 30
2109110	Glyphosate	16.9	Spike	P	0 - 30
2109110	Sucralose	5.16	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P368613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109087	Color (true)	1.28	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P369140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109610	Total Alkalinity	0.209	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P369206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109087	TDS	0.580	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P369144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109610	Fluoride	0.940	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P368743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109307	Organic Carbon	0.0	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: 2109129
Field Sample ID: 23020032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	136	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	97.9	P	30 - 160
EPA 8321B	Endothall-d6	140	P	30 - 160
EPA 8321B	Endothall-d6	140	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	141	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	141	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	96.6	P	30 - 160
EPA 8321B	Sucralose-d6	96.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
 Run ID: A93335
 Included Lab Sample IDs: 2109115

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: A93339
 Included Lab Sample IDs: 2109117

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

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A93340
 Included Lab Sample IDs: 2109115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: SM 5310 B-00
 Run ID: A93373
 Included Lab Sample IDs: 2109116

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

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A93394
 Included Lab Sample IDs: 2109116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	96.8	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A93429
 Included Lab Sample IDs: 2109129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	82.9	89.1	P/P	60 - 160
Endothall	153	153	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A93431
 Included Lab Sample IDs: 2109129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	113	91.5	P/P	60 - 160
Glufosinate	91.1	82.5	P/P	60 - 160
Glyphosate	98.7	81.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93436

Included Lab Sample IDs: 2109116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.5	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93462

Included Lab Sample IDs: 2109116

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

Reference Method: EPA 8321B

Run ID: A93483

Included Lab Sample IDs: 2109129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.4	107	P/P	50 - 150
Acetaminophen	94.7	92.6	P/P	60 - 160
Acetamiprid	97.9	98.4	P/P	50 - 150
Afidopyropen	85.0	99.1	P/P	50 - 150
Bentazon	82.0	127	P/P	50 - 160
Benzovindiflupyr	102	91.9	P/P	50 - 150
Carbamazepine	99.8	98.3	P/P	60 - 150
Clothianidin	81.3	93.4	P/P	60 - 150
Dinotefuran	103	103	P/P	50 - 150
Diuron	95.4	88.1	P/P	60 - 150
Fenuron	101	98.9	P/P	60 - 150
Fluridone	94.4	97.2	P/P	60 - 160
Hydrocodone	95.8	98.5	P/P	60 - 150
Ibuprofen	94.0	97.5	P/P	50 - 160
Imazapyr	103	106	P/P	50 - 150
Imidacloprid	107	97.1	P/P	60 - 150
Linuron	92.6	95.2	P/P	60 - 150
Mandestrobin	92.4	90.7	P/P	50 - 150
MCPP	103	110	P/P	50 - 150
Naproxen	86.1	97.1	P/P	50 - 160
Primidone	98.6	93.7	P/P	60 - 150
Pyraclostrobin	94.4	84.5	P/P	60 - 150
Thiamethoxam	104	103	P/P	50 - 150
Tolfenpyrad	122	119	P/P	60 - 150
Triclopyr	86.6	91.9	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93486

Included Lab Sample IDs: 2109115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	108	107	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93532

Included Lab Sample IDs: 2109116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93545

Included Lab Sample IDs: 2109115

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

Reference Method: SM 4500 F-C-97

Run ID: A93545

Included Lab Sample IDs: 2109115

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

Reference Method: EPA 8321B

Run ID: A93638

Included Lab Sample IDs: 2109129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.6	82.7	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					8.00	
EPA 300.0 Rev. 2.1	Chloride	95.8	94.1	93.6		0.605	
	Sulfate	99.7	99.6	99.8		0.688	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	102			0.540
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104	102			0.558
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.0	96.8			0.147
EPA 365.1 Rev. 2.0	Total-P	104	105	102			2.20
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	98.2	98.1			0.102
EPA 8321B	2,4-D	127	125	136			8.08
	Acesulfame K	74.2	63.6	83.3			26.9
	Acetaminophen	82.3	87.4	103			13.7
	Acetamiprid	95.7	108	114			5.39
	Afidopyropen	87.3	97.5	103			5.07
	AMPA	122	96.7	88.3			6.28
	Bentazon	135	93.2	97.8			4.37
	Benzovindiflupyr	67.6	84.4	102			18.7
	Carbamazepine	106	111	118			6.53
	Clothianidin	95.2	107	119			10.8
	Dinotefuran	99.0	120	129			7.20
	Diuron	91.5	78.7	88.7			10.1
	Endothall	144	112	115			2.75
	Fenuron	99.2	103	105			1.76
	Fluridone	88.0	97.8	105			6.06
	Glufosinate	96.3	104	103			1.06
	Glyphosate	111	77.0	94.5			16.9
	Hydrocodone	95.2	113	117			3.53
	Ibuprofen	88.7	86.9	88.1			1.43
	Imazapyr	98.3	133	144			7.76
	Imidacloprid	85.1	144	161			6.99
	Linuron	77.0	77.8	94.4			19.3
	Mandestrobin	84.6	93.3	111			17.3
	MCPP	121	150	151			0.712
	Naproxen	67.2	102	97.0			5.24
	Primidone	93.6	99.5	110			10.3
	Pyraclostrobin	58.2	73.0	91.8			22.8
	Sucralose	96.0	97.7	92.6			5.16
	Thiamethoxam	98.3	138	154			10.7
	Tolfenpyrad	22.5	30.8	53.2			53.3
	Triclopyr	94.1	90.4	96.4			6.43
SM 2120 B	Color (true)	101				1.28	
SM 2320 B-97	Total Alkalinity	105				0.209	
SM 2540 C-97	TDS					0.580	
SM 4500 F-C-97	Fluoride	97.0	101	99.5			0.940
SM 5310 B-00	Organic Carbon	97.8	99.3	99.3			0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2109115
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2109115

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2109115
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2109116
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2109116
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2109116
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2109116
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2109117
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2109129
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2109129
SM 2120 B / E31780	True Color measured at 450 nm	2109115
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2109115
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2109115
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2109115
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2109115
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2109116

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	08/07/2019			08/07/2019 17:10	Rosalyn Ballman	2109115
EPA 300.0 Rev. 2.1	08/07/2019			08/14/2019 22:17	Jhamieka S. Greenwood	2109115
EPA 350.1 Rev. 2.0	08/07/2019			08/14/2019 11:54	Ping Hua	2109116
EPA 351.2 Rev. 2.0	08/07/2019	08/08/2019 10:30	Adrian Shelby	08/12/2019 14:31	Joseph Suarez	2109116
EPA 353.2 Rev. 2.0	08/07/2019			08/13/2019 11:28	Beverly Y. Sanders	2109116
EPA 365.1 Rev. 2.0	08/07/2019	08/08/2019 13:18	Vijayalakshmi Reddy	08/09/2019 13:25	Lipi Saha	2109116
EPA 365.1 Rev. 2.0 dissolved	08/07/2019			08/07/2019 16:29	Jhamieka S. Greenwood	2109117
EPA 8321B	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/08/2019 20:19	Rebecca Ware	2109129
	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/09/2019 18:28	Rebecca Ware	2109129
	08/07/2019	08/08/2019 15:30	Rebecca Ware	08/19/2019 17:19	Rebecca Ware	2109129
	08/07/2019	08/09/2019 10:00	Fe-Val Siddell	08/13/2019 11:42	Juyoung Kim	2109129
SM 2120 B	08/07/2019			08/07/2019 16:03	Madeline Funaro	2109115
SM 2320 B-97	08/07/2019			08/15/2019 01:15	Dale L. Simmons	2109115
SM 2540 C-97	08/07/2019			08/12/2019 16:08	Yijie Li	2109115
SM 2540 D-97	08/07/2019			08/12/2019 16:08	Yijie Li	2109115
SM 4500 F-C-97	08/07/2019			08/15/2019 01:15	Dale L. Simmons	2109115
SM 5310 B-00	08/07/2019			08/08/2019 17:19	Madeline Funaro	2109116