Chemical Analysis Report

NE-DIST-2019-11-05-01

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-2019-11-04-61**
Customer: **NE-DIST**
Project ID: **SMP**

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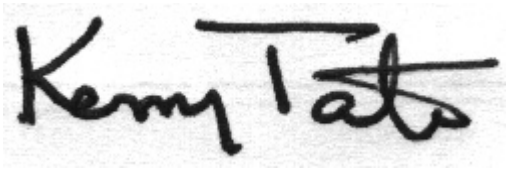
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 27-NOV-2019 08:50



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: 11/04/2019 10:15**

Field ID: 23020032 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133284	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P373751	
	EPA 300.0 Rev. 2.1	Chloride	5.4		mg Cl/L	P374077	
		Sulfate	1.4		mg SO4/L	P374082	
	SM 2120 B	Color (true)	26		PCU	P373730	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P374210	
	SM 2540 C-97	TDS	116		mg/L	P374059	
	SM 2540 D-97	TSS	2	I	mg/L	P374030	
	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P374213	
2133285	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P373980	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20		mg N/L	P373895	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.91		mg N/L	P373935	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P373871	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P374198	
2133286	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P373713	
2133300	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P373836	
		2,4-D	0.0020	U	ug/L	P373553	MS
		AMPA**	0.10	U	ug/L	P373836	
		Sucralose**	0.010	U	ug/L	P373836	
		Acetaminophen**	0.0080	U	ug/L	P373553	
		Acetamiprid**	0.0020	U	ug/L	P373553	
		Endothall**	0.25	U	ug/L	P373836	
		Glufosinate**	0.10	U	ug/L	P373836	
		Glyphosate**	0.10	U	ug/L	P373836	
		Afidopyropen**	0.0020	UJ	ug/L	P373553	
		Bentazon	8.0E-04	U	ug/L	P373553	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373553	
		Carbamazepine**	8.0E-04	U	ug/L	P373553	
		Clothianidin**	0.0020	U	ug/L	P373553	
		Dinotefuran**	0.0020	U	ug/L	P373553	
		Diuron	0.0020	U	ug/L	P373553	
		Fenuron	0.016	U	ug/L	P373553	
		Fluridone**	8.0E-04	U	ug/L	P373553	
		Imazapyr**	0.0040	U	ug/L	P373553	
		Hydrocodone**	0.0020	U	ug/L	P373553	
		Ibuprofen**	0.020	U	ug/L	P373553	
		Imidacloprid	0.0020	U	ug/L	P373553	MS
		Linuron	0.0040	U	ug/L	P373553	
		Mandestrobin**	0.0020	UJ	ug/L	P373553	
		MCPP	0.0020	U	ug/L	P373553	MS
		Naproxen**	0.0080	U	ug/L	P373553	
		Primidone**	0.0040	U	ug/L	P373553	
		Pyraclostrobin**	0.0020	U	ug/L	P373553	

Field ID: 23020032 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133300	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P373553	
		Tolfenpyrad**	0.0020	U	ug/L	P373553	
		Triclopyr**	0.0040	U	ug/L	P373553	

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.

Sample Location: Lake Kanapaha-300M N of 56th **Collection Date/Time: 11/04/2019 11:00**

Field ID: 20030925 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2133287	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P373751	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P374077	
		Sulfate	8.1		mg SO4/L	P374082	
	SM 2120 B	Color (true)	22		PCU	P373730	
	SM 2320 B-97	Total Alkalinity	248		mg CaCO3/L	P374211	
	SM 2540 C-97	TDS	276		mg/L	P374059	
	SM 2540 D-97	TSS	3	I	mg/L	P374030	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P374214	
2133288	EPA 350.1 Rev. 2.0	Ammonia-N	0.33		mg N/L	P373980	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P373895	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P373935	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P373871	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P374199	
2133289	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P373713	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373751

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374077

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374082

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373980

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373895

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373935

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373871

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373713

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

Reference Method: EPA 8321B
Batch ID: P373553

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: P373553

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: P373836

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: P373730

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374210

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

Reference Method: SM 2320 B-97
Batch ID: P374211

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P374059

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P374030

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374213

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374198

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

Reference Method: SM 5310 B-00
Batch ID: P374199

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: P374077

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374082

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373935

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: P373871

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373713

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.1		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	136		P	40 - 160
Acetaminophen	83.8		P	30 - 160
Acetamiprid	92.7		P	40 - 160
Afidopyropen	97.4		P	40 - 160
Bentazon	105		P	30 - 160
Benzovindiflupyr	94.2		P	40 - 160
Carbamazepine	103		P	40 - 160
Clothianidin	92.3		P	40 - 160
Dinotefuran	93.2		P	40 - 160
Diuron	100		P	40 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P373553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	99.4		P	40 - 160
Fluridone	96.4		P	40 - 160
Hydrocodone	89.0		P	40 - 160
Ibuprofen	93.5		P	30 - 160
Imazapyr	92.6		P	40 - 160
Imidacloprid	111		P	40 - 160
Linuron	82.0		P	40 - 160
Mandestrobin	93.1		P	40 - 160
MCPP	149		P	40 - 160
Naproxen	73.0		P	40 - 160
Primidone	92.3		P	40 - 160
Pyraclostrobin	83.8		P	30 - 160
Thiamethoxam	98.8		P	40 - 160
Tolfenpyrad	52.0		P	40 - 160
Triclopyr	117		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373836

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.1		P	40 - 150
AMPA	76.9		P	40 - 150
Endothall	85.0		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	106		P	40 - 140
Sucralose	115		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P373730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P374210

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P374211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374213

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374198

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

Reference Method: SM 5310 B-00
Batch ID: P374199

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: P374077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133162	Chloride	101		P	90 - 110
2133216	Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133162	Sulfate	100		P	90 - 110
2133216	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133285	Ammonia-N	97.6	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133285	Kjeldahl Nitrogen	92.3	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133221	NO2NO3-N	95.6	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133285	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133276	O-Phosphate-P	98.7	99.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132728	2,4-D	157	162	P/F	40 - 160
2132728	Acetaminophen	92.6	92.4	P/P	30 - 160
2132728	Acetamiprid	123	119	P/P	40 - 160
2132728	Afidopyropen	118	114	P/P	40 - 160
2132728	Bentazon	83.7	85.5	P/P	30 - 160
2132728	Benzovindiflupyr	101	105	P/P	40 - 160
2132728	Carbamazepine	117	116	P/P	40 - 160
2132728	Clothianidin	113	105	P/P	40 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132728	Dinotefuran	124	123	P/P	40 - 160
2132728	Diuron	103	105	P/P	40 - 160
2132728	Fenuron	104	103	P/P	40 - 160
2132728	Fluridone	106	111	P/P	40 - 160
2132728	Hydrocodone	108	111	P/P	40 - 160
2132728	Ibuprofen	106	112	P/P	30 - 160
2132728	Imazapyr	130	121	P/P	40 - 160
2132728	Imidacloprid	188	186	F/F	40 - 160
2132728	Linuron	85.2	93.8	P/P	40 - 160
2132728	Mandestrobin	102	104	P/P	40 - 160
2132728	MCPP	169	165	F/F	40 - 160
2132728	Naproxen	106	105	P/P	40 - 160
2132728	Primidone	112	117	P/P	40 - 160
2132728	Pyraclostrobin	99.9	98.6	P/P	30 - 160
2132728	Thiamethoxam	153	153	P/P	40 - 160
2132728	Tolfenpyrad	65.6	64.9	P/P	40 - 160
2132728	Triclopyr	136	130	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133300	Acesulfame K	98.3	95.1	P/P	40 - 150
2133300	AMPA	102	103	P/P	40 - 150
2133300	Endothall	67.6	85.1	P/P	40 - 150
2133300	Glufosinate	104	99.2	P/P	40 - 150
2133300	Glyphosate	93.0	96.4	P/P	40 - 140
2133300	Sucralose	96.1	103	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P374213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134358	Fluoride	98.5	98.5	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133723	Fluoride	99.1	98.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2133271	Organic Carbon	106	103	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P374199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134837	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133345	Turbidity	9.81	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133162	Chloride	0.205	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133162	Sulfate	0.681	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133285	Ammonia-N	0.538	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133285	Kjeldahl Nitrogen	7.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133221	NO2NO3-N	0.752	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133285	Total-P	0.730	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133276	O-Phosphate-P	0.707	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P373553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132728	2,4-D	2.60	Spike	P	0 - 30
2132728	Acetaminophen	0.200	Spike	P	0 - 30
2132728	Acetamiprid	3.31	Spike	P	0 - 30
2132728	Afidopyropen	3.22	Spike	P	0 - 30
2132728	Bentazon	2.08	Spike	P	0 - 30
2132728	Benzovindiflupyr	3.56	Spike	P	0 - 30
2132728	Carbamazepine	1.08	Spike	P	0 - 30
2132728	Clothianidin	7.10	Spike	P	0 - 30
2132728	Dinotefuran	0.679	Spike	P	0 - 30
2132728	Diuron	1.39	Spike	P	0 - 30
2132728	Fenuron	0.564	Spike	P	0 - 30
2132728	Fluridone	4.57	Spike	P	0 - 30
2132728	Hydrocodone	3.01	Spike	P	0 - 30
2132728	Ibuprofen	6.06	Spike	P	0 - 30
2132728	Imazapyr	4.31	Spike	P	0 - 30
2132728	Imidacloprid	1.18	Spike	P	0 - 30
2132728	Linuron	9.63	Spike	P	0 - 30
2132728	Mandestrobin	2.60	Spike	P	0 - 30
2132728	MCPP	2.31	Spike	P	0 - 30
2132728	Naproxen	1.36	Spike	P	0 - 30
2132728	Primidone	4.71	Spike	P	0 - 30
2132728	Pyraclostrobin	1.31	Spike	P	0 - 30
2132728	Thiamethoxam	0.0825	Spike	P	0 - 30
2132728	Tolfenpyrad	0.963	Spike	P	0 - 30
2132728	Triclopyr	4.56	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133300	Acesulfame K	3.35	Spike	P	0 - 30
2133300	AMPA	0.954	Spike	P	0 - 30
2133300	Endothall	22.9	Spike	P	0 - 30
2133300	Glufosinate	4.84	Spike	P	0 - 30
2133300	Glyphosate	3.57	Spike	P	0 - 30
2133300	Sucralose	6.80	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P373730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133265	Color (true)	6.85	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134358	Total Alkalinity	0.339	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P374211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Total Alkalinity	0.251	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P374059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133268	TDS	3.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P374213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134358	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P374214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133723	Fluoride	0.524	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2133271	Organic Carbon	2.24	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P374199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134837	Organic Carbon	0.221	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2133300
Field Sample ID: 23020032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	134	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.4	P	30 - 160
EPA 8321B	Diuron-d6	92.6	P	30 - 160
EPA 8321B	Endothall-d6	97.4	P	30 - 160
EPA 8321B	Endothall-d6	97.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	70.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	111	P	30 - 160
EPA 8321B	Primidone-d5	90.4	P	30 - 160
EPA 8321B	Sucralose-d6	91.4	P	30 - 160
EPA 8321B	Sucralose-d6	91.4	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A95489
Included Lab Sample IDs: 2133286, 2133289

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.9	P/P	90 - 110
O-Phosphate-P	98.5	98.4	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A95502
Included Lab Sample IDs: 2133284, 2133287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A95510
Included Lab Sample IDs: 2133284, 2133287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A95511
Included Lab Sample IDs: 2133284, 2133287

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

Reference Method: EPA 8321B
Run ID: A95588
Included Lab Sample IDs: 2133300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.5	86.8	P/P	50 - 150
Acetaminophen	106	104	P/P	60 - 160
Acetamiprid	109	105	P/P	50 - 150
Afidopyropen	107	96.8	P/P	50 - 150
Bentazon	98.8	106	P/P	50 - 160
Benzovindiflupyr	115	113	P/P	50 - 150
Carbamazepine	112	110	P/P	60 - 150
Clothianidin	93.7	105	P/P	60 - 150
Dinotefuran	105	99.9	P/P	50 - 150
Diuron	111	112	P/P	60 - 150
Fenuron	110	107	P/P	60 - 150
Fluridone	118	112	P/P	60 - 160
Hydrocodone	110	109	P/P	60 - 150
Ibuprofen	79.8	89.5	P/P	50 - 160
Imazapyr	93.0	80.0	P/P	50 - 150
Imidacloprid	110	108	P/P	60 - 150
Linuron	104	97.3	P/P	60 - 150
Mandestrobin	107	107	P/P	50 - 150
MCPP	97.7	103	P/P	50 - 150
Naproxen	86.0	74.8	P/P	50 - 160
Primidone	100	106	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A95588
Included Lab Sample IDs: 2133300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	99.0	101	P/P	60 - 150
Thiamethoxam	105	102	P/P	50 - 150
Tolfenpyrad	105	105	P/P	60 - 150
Triclopyr	86.4	87.9	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95589
Included Lab Sample IDs: 2133288

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A95595
Included Lab Sample IDs: 2133285, 2133288

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A95597
Included Lab Sample IDs: 2133285

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A95616
Included Lab Sample IDs: 2133285, 2133288

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

Reference Method: EPA 8321B
Run ID: A95640
Included Lab Sample IDs: 2133300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.6	102	P/P	60 - 160
Glufosinate	94.0	100	P/P	60 - 160
Glyphosate	84.8	100	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95655
Included Lab Sample IDs: 2133300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.0	80.1	P/P	60 - 160
Endothall	84.2	93.4	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A95663
Included Lab Sample IDs: 2133285, 2133288

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	101	P/P	90 - 110
Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A95721
Included Lab Sample IDs: 2133285, 2133288

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

Reference Method: SM 2320 B-97
Run ID: A95725
Included Lab Sample IDs: 2133284, 2133287

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.5	P/P	90 - 110
Total Alkalinity	98.5	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A95725
Included Lab Sample IDs: 2133284, 2133287

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

Reference Method: EPA 8321B
Run ID: A95766
Included Lab Sample IDs: 2133300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	117	111	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					9.81	
EPA 300.0 Rev. 2.1	Chloride	100	101	97.9		0.205	
	Sulfate	100	100	97.7		0.681	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	97.6	98.2			0.538
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.2	92.3	101			7.58
EPA 353.2 Rev. 2.0	NO2NO3-N	100	95.6	96.6			0.752
EPA 365.1 Rev. 2.0	Total-P	102	106	105			0.730
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1	98.7	99.4			0.707
EPA 8321B	2,4-D	136	157	162			2.60
	Acesulfame K	89.1	98.3	95.1			3.35
	Acetaminophen	83.8	92.6	92.4			0.200
	Acetamiprid	92.7	123	119			3.31
	Afidopyropen	97.4	118	114			3.22
	AMPA	76.9	102	103			0.954
	Bentazon	105	83.7	85.5			2.08
	Benzovindiflupyr	94.2	101	105			3.56
	Carbamazepine	103	117	116			1.08
	Clothianidin	92.3	113	105			7.10
	Dinotefuran	93.2	124	123			0.679
	Diuron	100	103	105			1.39
	Endothall	85.0	67.6	85.1			22.9
	Fenuron	99.4	104	103			0.564
	Fluridone	96.4	106	111			4.57
	Glufosinate	100	104	99.2			4.84
	Glyphosate	106	93.0	96.4			3.57
	Hydrocodone	89.0	108	111			3.01
	Ibuprofen	93.5	106	112			6.06
	Imazapyr	92.6	130	121			4.31
	Imidacloprid	111	188	186			1.18
	Linuron	82.0	85.2	93.8			9.63
	Mandestrobin	93.1	102	104			2.60
	MCPP	149	169	165			2.31
	Naproxen	73.0	106	105			1.36
	Primidone	92.3	112	117			4.71
	Pyraclostrobin	83.8	99.9	98.6			1.31
	Sucralose	115	96.1	103			6.80
	Thiamethoxam	98.8	153	153			0.0825
	Tolfenpyrad	52.0	65.6	64.9			0.963
	Triclopyr	117	136	130			4.56
SM 2120 B	Color (true)	99.5				6.85	
SM 2320 B-97	Total Alkalinity	100				0.339	
	Total Alkalinity	101				0.251	
SM 2540 C-97	TDS					3.77	
SM 4500 F-C-97	Fluoride	97.8	98.5	98.5			0.0
	Fluoride	98.8	99.1	98.4			0.524
SM 5310 B-00	Organic Carbon	102	106	103			2.24
	Organic Carbon	102	101	102			0.221

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2133284, 2133287

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2133284, 2133287
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2133284, 2133287
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2133285, 2133288
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2133285, 2133288
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2133285, 2133288
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2133285, 2133288
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2133286, 2133289
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2133300
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2133300
SM 2120 B / E31780	True Color measured at 450 nm	2133284, 2133287
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2133284, 2133287
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2133284, 2133287
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2133284, 2133287
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2133284, 2133287
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2133285, 2133288

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	11/05/2019			11/05/2019 17:26	Rosalyn Ballman	2133284, 2133287
EPA 300.0 Rev. 2.1	11/05/2019			11/07/2019 20:26	Jhamieka S. Greenwood	2133284
	11/05/2019			11/07/2019 20:38	Jhamieka S. Greenwood	2133287
EPA 350.1 Rev. 2.0	11/05/2019			11/06/2019 11:18	Ping Hua	2133285
	11/05/2019			11/06/2019 13:44	Ping Hua	2133288
EPA 351.2 Rev. 2.0	11/05/2019	11/08/2019 09:35	Sima Feizi	11/12/2019 15:36	Jhamieka S. Greenwood	2133285
	11/05/2019	11/08/2019 09:35	Sima Feizi	11/12/2019 15:53	Jhamieka S. Greenwood	2133288
EPA 353.2 Rev. 2.0	11/05/2019			11/07/2019 11:39	Beverly Y. Sanders	2133285
	11/05/2019			11/07/2019 11:40	Beverly Y. Sanders	2133288
EPA 365.1 Rev. 2.0	11/05/2019	11/07/2019 14:35	Yen Ta	11/08/2019 11:28	Benjamin T. Nordmann	2133288
	11/05/2019	11/07/2019 14:35	Yen Ta	11/08/2019 13:54	Benjamin T. Nordmann	2133285
EPA 365.1 Rev. 2.0 dissolved	11/05/2019			11/05/2019 14:14	Ping Hua	2133286
	11/05/2019			11/05/2019 14:24	Ping Hua	2133289
EPA 8321B	11/05/2019	11/06/2019 08:00	Hoor Shaik	11/09/2019 18:26	Juyoung Kim	2133300
	11/05/2019	11/07/2019 10:30	Rebecca Ware	11/07/2019 17:57	Rebecca Ware	2133300
	11/05/2019	11/07/2019 10:30	Rebecca Ware	11/08/2019 17:25	Rebecca Ware	2133300
	11/05/2019	11/07/2019 10:30	Rebecca Ware	11/13/2019 19:41	Rebecca Ware	2133300
SM 2120 B	11/05/2019			11/05/2019 17:25	Madeline Funaro	2133284
	11/05/2019			11/05/2019 17:26	Madeline Funaro	2133287
SM 2320 B-97	11/05/2019			11/14/2019 02:24	Dale L. Simmons	2133284
	11/05/2019			11/14/2019 03:58	Dale L. Simmons	2133287
SM 2540 C-97	11/05/2019			11/06/2019 14:36	Yijie Li	2133284, 2133287
SM 2540 D-97	11/05/2019			11/06/2019 14:36	Yijie Li	2133284, 2133287
SM 4500 F-C-97	11/05/2019			11/14/2019 02:24	Dale L. Simmons	2133284
	11/05/2019			11/14/2019 03:58	Dale L. Simmons	2133287
SM 5310 B-00	11/05/2019			11/13/2019 22:18	Madeline Funaro	2133285
	11/05/2019			11/14/2019 00:08	Madeline Funaro	2133288