

Chemical Analysis Report

NE-DIST-2019-12-04-01

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

Event Description: **Suwannee North**
Request ID: **RQ-2019-12-02-24**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
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Liang-Tsair Lin, Ph.D.
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Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-DEC-2019 17:57

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

NON-CONFORMANCE REPORT INCLUDED

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 CREEK AT US 441

Collection Date/Time: 12/03/2019 10:15

Field ID: 21010033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140237	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P375262	
	EPA 300.0 Rev. 2.1	Chloride	6.9		mg Cl/L	P375407	
		Sulfate	3.5		mg SO4/L	P375411	
	SM 2120 B	Color (true)	180		PCU	P375293	
	SM 2320 B-97	Total Alkalinity	49		mg CaCO3/L	P375319	
	SM 2540 C-97	TDS	101		mg/L	P375773	
	SM 2540 D-97	TSS	2	U	mg/L	P375885	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P375322	
2140238	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	UY	mg N/L	P375581	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47	Y	mg N/L	P375343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P375429	
	EPA 365.1 Rev. 2.0	Total-P	0.49	Y	mg P/L	P375338	
	SM 5310 B-00	Organic Carbon	17	Y	mg C/L	P375412	
2140239	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.44		mg P/L	P375233	
2140260	EPA 8321B	2,4-D	0.0020	U	ug/L	P375140	
		Acesulfame K**	0.10	U	ug/L	P375209	
		AMPA**	0.10	UJ	ug/L	P375209	SUR
		Sucralose**	0.010	U	ug/L	P375209	MS
		Acetaminophen**	0.0080	U	ug/L	P375140	
		Acetamiprid**	0.0020	U	ug/L	P375140	
		Endothall**	0.25	U	ug/L	P375209	
		Glufosinate**	0.10	UJ	ug/L	P375209	SUR
		Glyphosate**	0.10	UJ	ug/L	P375209	SUR
		Afidopyropen**	0.0020	UJ	ug/L	P375140	
		Bentazon	8.0E-04	U	ug/L	P375140	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375140	
		Carbamazepine**	8.0E-04	U	ug/L	P375140	
		Clothianidin**	0.0020	U	ug/L	P375140	
		Dinotefuran**	0.0020	U	ug/L	P375140	
		Diuron	0.0020	U	ug/L	P375140	
		Fenuron	0.016	U	ug/L	P375140	
		Fluridone**	8.0E-04	U	ug/L	P375140	
		Imazapyr**	0.0040	U	ug/L	P375140	
		Hydrocodone**	0.0020	U	ug/L	P375140	
		Ibuprofen**	0.020	U	ug/L	P375140	
		Imidacloprid	0.0020	U	ug/L	P375140	
		Linuron	0.0040	U	ug/L	P375140	
		Mandestrobin**	0.0020	UJ	ug/L	P375140	
		MCP	0.0020	U	ug/L	P375140	
		Naproxen**	0.0080	U	ug/L	P375140	
		Primidone**	0.0040	U	ug/L	P375140	
		Pyraclostrobin**	0.0020	U	ug/L	P375140	
		Thiamethoxam**	0.0020	U	ug/L	P375140	

Field ID: 21010033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140260	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375140	
		Triclopyr**	0.0040	U	ug/L	P375140	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-00: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

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

EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: LAKE KANAPAHA-300M N OF 56TH

Collection Date/Time: 12/03/2019 12:35

Field ID: 20030925

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140240	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P375262	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P375407	
		Sulfate	8.2		mg SO4/L	P375411	
	SM 2120 B	Color (true)	21		PCU	P375293	
	SM 2320 B-97	Total Alkalinity	258		mg CaCO3/L	P375319	
	SM 2540 C-97	TDS	312		mg/L	P375773	
	SM 2540 D-97	TSS	2	I	mg/L	P375885	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P375322	
2140241	EPA 350.1 Rev. 2.0	Ammonia-N	0.34		mg N/L	P375581	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P375343	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375429	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P375338	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P375412	
2140242	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P375233	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 8048

Event(s)

NE-DIST-2019-12-04-01

Job(s)

TLH-2019-12-04-03

Sample(s)

2140238

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory with sulfuric acid.
H2SO4 Lot#9203100 | Expiration Date: 07/22/2020
Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 12/17/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375262

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375407

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375411

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375581

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375343

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375429

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375338

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

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

Reference Method: EPA 8321B
Batch ID: P375140

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: P375140

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: P375209

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: P375293

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P375319

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

Reference Method: SM 2540 C-97
Batch ID: P375773

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P375885

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375412

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: P375407

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P375411

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P375581

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P375343

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P375429

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: P375338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375233

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

Reference Method: EPA 8321B
 Batch ID: P375140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	139		P	40 - 160
Acetaminophen	65.9		P	30 - 160
Acetamiprid	89.7		P	40 - 160
Afidopyropen	91.5		P	40 - 160
Bentazon	84.8		P	30 - 160
Benzovindiflupyr	74.2		P	40 - 160
Carbamazepine	94.3		P	40 - 160
Clothianidin	77.6		P	40 - 160
Dinotefuran	81.7		P	40 - 160
Diuron	85.3		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P375140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	102		P	40 - 160
Fluridone	104		P	40 - 160
Hydrocodone	83.1		P	40 - 160
Ibuprofen	80.0		P	30 - 160
Imazapyr	93.9		P	40 - 160
Imidacloprid	104		P	40 - 160
Linuron	67.4		P	40 - 160
Mandestrobin	96.0		P	40 - 160
MCPP	140		P	40 - 160
Naproxen	77.8		P	40 - 160
Primidone	75.2		P	40 - 160
Pyraclostrobin	79.7		P	30 - 160
Thiamethoxam	91.9		P	40 - 160
Tolfenpyrad	54.6		P	40 - 160
Triclopyr	92.1		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P375209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	105		P	40 - 150
AMPA	113		P	40 - 150
Endothall	81.0		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	124		P	40 - 140
Sucralose	90.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P375293

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P375319

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

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P375412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140086	Chloride	102		P	90 - 110
2140215	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140086	Sulfate	103		P	90 - 110
2140215	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140218	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140218	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140238	NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140201	Total-P	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140219	O-Phosphate-P	96.9	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P375140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140108	2,4-D	114	119	P/P	40 - 160
2140108	Acetaminophen	76.3	69.1	P/P	30 - 160
2140108	Acetamiprid	92.1	100	P/P	40 - 160
2140108	Afidopyropen	100	96.3	P/P	40 - 160
2140108	Benzovindiflupyr	69.4	80.6	P/P	40 - 160
2140108	Carbamazepine	76.9	72.4	P/P	40 - 160
2140108	Clothianidin	78.4	81.8	P/P	40 - 160
2140108	Dinotefuran	106	116	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P375140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140108	Diuron	59.8	65.0	P/P	40 - 160
2140108	Fenuron	92.0	89.9	P/P	40 - 160
2140108	Fluridone	84.4	89.6	P/P	40 - 160
2140108	Hydrocodone	95.6	83.0	P/P	40 - 160
2140108	Ibuprofen	62.5	65.7	P/P	30 - 160
2140108	Imazapyr	72.4	84.0	P/P	40 - 160
2140108	Imidacloprid	151	159	P/P	40 - 160
2140108	Linuron	57.4	54.0	P/P	40 - 160
2140108	Mandestrobin	87.2	95.3	P/P	40 - 160
2140108	MCPP	120	126	P/P	40 - 160
2140108	Naproxen	79.2	92.9	P/P	40 - 160
2140108	Primidone	87.2	79.5	P/P	40 - 160
2140108	Pyraclostrobin	75.3	91.0	P/P	30 - 160
2140108	Thiamethoxam	118	117	P/P	40 - 160
2140108	Tolfenpyrad	54.1	54.2	P/P	40 - 160
2140108	Triclopyr	95.8	85.9	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P375209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140044	Acesulfame K	145	140	P/P	40 - 150
2140044	AMPA	141	115	P/P	40 - 150
2140044	Endothall	97.2	108	P/P	40 - 150
2140044	Glufosinate	135	124	P/P	40 - 150
2140044	Glyphosate	82.7	72.3	P/P	40 - 140
2140044	Sucralose	16.1	17.2	F/F	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140216	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P375412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140341	Organic Carbon	98.2	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140243	Turbidity	2.72	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140086	Chloride	1.01	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140086	Sulfate	1.45	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140218	Ammonia-N	1.52	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140218	Kjeldahl Nitrogen	3.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140238	NO2NO3-N	0.509	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140201	Total-P	0.341	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140219	O-Phosphate-P	0.0661	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P375140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140108	2,4-D	3.90	Spike	P	0 - 30
2140108	Acetaminophen	9.96	Spike	P	0 - 30
2140108	Acetamiprid	8.50	Spike	P	0 - 30
2140108	Afidopyropen	3.80	Spike	P	0 - 30
2140108	Bentazon	18.4	Spike	P	0 - 30
2140108	Benzovindiflupyr	14.9	Spike	P	0 - 30
2140108	Carbamazepine	5.20	Spike	P	0 - 30
2140108	Clothianidin	4.21	Spike	P	0 - 30
2140108	Dinotefuran	8.05	Spike	P	0 - 30
2140108	Diuron	7.89	Spike	P	0 - 30
2140108	Fenuron	2.33	Spike	P	0 - 30
2140108	Fluridone	3.38	Spike	P	0 - 30
2140108	Hydrocodone	14.1	Spike	P	0 - 30
2140108	Ibuprofen	4.94	Spike	P	0 - 30
2140108	Imazapyr	8.53	Spike	P	0 - 30
2140108	Imidacloprid	5.14	Spike	P	0 - 30
2140108	Linuron	6.09	Spike	P	0 - 30
2140108	Mandestrobin	8.87	Spike	P	0 - 30
2140108	MCPP	4.80	Spike	P	0 - 30
2140108	Naproxen	16.0	Spike	P	0 - 30
2140108	Primidone	7.41	Spike	P	0 - 30
2140108	Pyraclostrobin	18.9	Spike	P	0 - 30
2140108	Thiamethoxam	1.21	Spike	P	0 - 30
2140108	Tolfenpyrad	0.163	Spike	P	0 - 30
2140108	Triclopyr	10.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P375209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140044	Acesulfame K	3.77	Spike	P	0 - 30
2140044	AMPA	15.2	Spike	P	0 - 30
2140044	Endothall	10.5	Spike	P	0 - 30
2140044	Glufosinate	8.38	Spike	P	0 - 30
2140044	Glyphosate	3.84	Spike	P	0 - 30
2140044	Sucralose	4.29	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P375293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140249	Color (true)	1.81	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P375319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140216	Total Alkalinity	0.0597	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P375773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140199	TDS	4.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P375322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140216	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P375412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140341	Organic Carbon	0.229	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2140260
Field Sample ID: 21010033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.9	P	30 - 160
EPA 8321B	Diuron-d6	80.0	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	171	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	171	F	30 - 160
EPA 8321B	Ibuprofen-d3	78.2	P	30 - 160
EPA 8321B	Primidone-d5	79.5	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96087

Included Lab Sample IDs: 2140237, 2140240

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

Reference Method: EPA 8321B

Run ID: A96104

Included Lab Sample IDs: 2140260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.5	100	P/P	50 - 150
Acetaminophen	85.8	78.5	P/P	60 - 160
Acetamiprid	103	98.9	P/P	50 - 150
Afidopyropen	99.9	94.0	P/P	50 - 150
Bentazon	75.2	77.5	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 150
Carbamazepine	94.5	98.3	P/P	60 - 150
Clothianidin	92.6	83.0	P/P	60 - 150
Dinotefuran	89.8	87.7	P/P	50 - 150
Diuron	103	100	P/P	60 - 150
Fenuron	80.7	85.3	P/P	60 - 150
Fluridone	117	114	P/P	60 - 160
Hydrocodone	89.4	87.3	P/P	60 - 150
Ibuprofen	84.6	78.5	P/P	50 - 160
Imazapyr	97.9	97.5	P/P	50 - 150
Imidacloprid	97.7	86.1	P/P	60 - 150
Linuron	91.8	94.1	P/P	60 - 150
Mandestrobin	109	107	P/P	50 - 150
MCPP	98.7	106	P/P	50 - 150
Naproxen	69.5	111	P/P	50 - 160
Primidone	87.8	75.5	P/P	60 - 150
Pyraclostrobin	103	96.7	P/P	60 - 150
Thiamethoxam	93.3	86.2	P/P	50 - 150
Tolfenpyrad	104	95.1	P/P	60 - 150
Triclopyr	99.2	93.5	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96116

Included Lab Sample IDs: 2140239, 2140242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.5	94.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96120

Included Lab Sample IDs: 2140237, 2140240

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96122

Included Lab Sample IDs: 2140238, 2140241

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

Reference Method: SM 2120 B

Run ID: A96139

Included Lab Sample IDs: 2140237, 2140240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115
Color (true)	104	103	P/P	90 - 115

Reference Method: SM 2320 B-97

Run ID: A96148

Included Lab Sample IDs: 2140237, 2140240

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

Reference Method: SM 4500 F-C-97

Run ID: A96148

Included Lab Sample IDs: 2140237, 2140240

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A96190

Included Lab Sample IDs: 2140238, 2140241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96193

Included Lab Sample IDs: 2140238, 2140241

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

Reference Method: EPA 8321B

Run ID: A96195

Included Lab Sample IDs: 2140260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	135	112	P/P	60 - 160
Glufosinate	112	114	P/P	60 - 160
Glyphosate	124	129	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A96196
Included Lab Sample IDs: 2140260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	98.7	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A96215
Included Lab Sample IDs: 2140260

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	83.0	P/P	60 - 160
Endothall	95.2	95.5	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A96219
Included Lab Sample IDs: 2140238, 2140241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A96246
Included Lab Sample IDs: 2140238, 2140241

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

* 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					2.72	
EPA 300.0 Rev. 2.1	Chloride	104	102	103		1.01	
	Sulfate	103	103	99.6		1.45	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	104			1.52
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	107	104			3.34
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	98.5	98.0			0.509
EPA 365.1 Rev. 2.0	Total-P	98.4	105	105			0.341
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	96.9	97.0			0.0661
EPA 8321B	2,4-D	139	119	114			3.90
	Acesulfame K	105	145	140			3.77
	Acetaminophen	65.9	76.3	69.1			9.96
	Acetamiprid	89.7	92.1	100			8.50
	Afidopyropen	91.5	100	96.3			3.80
	AMPA	113	141	115			15.2
	Bentazon	84.8					18.4
	Benzovindiflupyr	74.2	69.4	80.6			14.9
	Carbamazepine	94.3	76.9	72.4			5.20
	Clothianidin	77.6	78.4	81.8			4.21
	Dinotefuran	81.7	106	116			8.05
	Diuron	85.3	59.8	65.0			7.89
	Endothall	81.0	97.2	108			10.5
	Fenuron	102	92.0	89.9			2.33
	Fluridone	104	84.4	89.6			3.38
	Glufosinate	125	135	124			8.38
	Glyphosate	124	82.7	72.3			3.84
	Hydrocodone	83.1	95.6	83.0			14.1
	Ibuprofen	80.0	65.7	62.5			4.94
	Imazapyr	93.9	84.0	72.4			8.53
	Imidacloprid	104	151	159			5.14
	Linuron	67.4	57.4	54.0			6.09
	Mandestrobin	96.0	87.2	95.3			8.87
	MCPP	140	126	120			4.80
	Naproxen	77.8	92.9	79.2			16.0
	Primidone	75.2	87.2	79.5			7.41
	Pyraclostrobin	79.7	75.3	91.0			18.9
	Sucralose	90.1	16.1	17.2			4.29
	Thiamethoxam	91.9	118	117			1.21
	Tolfenpyrad	54.6	54.2	54.1			0.163
	Triclopyr	92.1	85.9	95.8			10.9
SM 2120 B	Color (true)	102				1.81	
SM 2320 B-97	Total Alkalinity	103				0.0597	
SM 2540 C-97	TDS					4.99	
SM 4500 F-C-97	Fluoride	97.2	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	99.0	98.2	98.6			0.229

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2140237, 2140240
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2140237, 2140240

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2140237, 2140240
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2140238, 2140241
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2140238, 2140241
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2140238, 2140241
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2140238, 2140241
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2140239, 2140242
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2140260
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2140260
SM 2120 B / E31780	True Color measured at 450 nm	2140237, 2140240
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2140237, 2140240
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2140237, 2140240
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2140237, 2140240
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2140237, 2140240
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2140238, 2140241

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	12/04/2019			12/04/2019 16:05	Yen Ta	2140237, 2140240
EPA 300.0 Rev. 2.1	12/04/2019			12/07/2019 14:50	Jhamieka S. Greenwood	2140237
	12/04/2019			12/07/2019 15:02	Jhamieka S. Greenwood	2140240
EPA 350.1 Rev. 2.0	12/04/2019			12/10/2019 12:25	Ping Hua	2140238
	12/04/2019			12/10/2019 13:54	Ping Hua	2140241
EPA 351.2 Rev. 2.0	12/04/2019	12/06/2019 12:22	Sima Feizi	12/09/2019 14:38	Jhamieka S. Greenwood	2140238
	12/04/2019	12/06/2019 12:22	Sima Feizi	12/09/2019 14:40	Jhamieka S. Greenwood	2140241
EPA 353.2 Rev. 2.0	12/04/2019			12/05/2019 11:01	Beverly Y. Sanders	2140238
	12/04/2019			12/05/2019 11:03	Beverly Y. Sanders	2140241
EPA 365.1 Rev. 2.0	12/04/2019	12/06/2019 14:10	Lipi Saha	12/09/2019 13:46	Benjamin T. Nordmann	2140238
	12/04/2019	12/06/2019 14:10	Lipi Saha	12/09/2019 13:47	Benjamin T. Nordmann	2140241
EPA 365.1 Rev. 2.0 dissolved	12/04/2019			12/04/2019 18:03	Samantha Davila	2140242
	12/04/2019			12/04/2019 18:05	Samantha Davila	2140239
EPA 8321B	12/04/2019	12/04/2019 12:00	Hoor Shaik	12/05/2019 06:38	Juyoung Kim	2140260
	12/04/2019	12/05/2019 11:00	Rebecca Ware	12/05/2019 18:22	Rebecca Ware	2140260
	12/04/2019	12/05/2019 11:00	Rebecca Ware	12/06/2019 18:08	Rebecca Ware	2140260
	12/04/2019	12/05/2019 11:00	Rebecca Ware	12/07/2019 16:45	Rebecca Ware	2140260
SM 2120 B	12/04/2019			12/04/2019 18:23	Madeline Funaro	2140240
	12/04/2019			12/04/2019 19:14	Madeline Funaro	2140237
SM 2320 B-97	12/04/2019			12/06/2019 08:40	Dale L. Simmons	2140237
	12/04/2019			12/06/2019 08:54	Dale L. Simmons	2140240
SM 2540 C-97	12/04/2019			12/05/2019 15:36	Yijie Li	2140237, 2140240
SM 2540 D-97	12/04/2019			12/05/2019 15:36	Yijie Li	2140237, 2140240
SM 4500 F-C-97	12/04/2019			12/06/2019 08:40	Dale L. Simmons	2140237
	12/04/2019			12/06/2019 08:54	Dale L. Simmons	2140240
SM 5310 B-00	12/04/2019			12/06/2019 19:57	Madeline Funaro	2140238
	12/04/2019			12/06/2019 20:11	Madeline Funaro	2140241