

Chemical Analysis Report

SW-DIST-2019-11-15-02

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

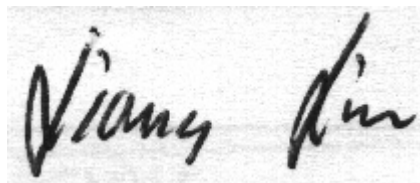
Event Description: **English, Pemberton, Baker, Spartman, Mustang, Poley**
Request ID: **RQ-2019-10-21-05**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-DEC-2019 11:43

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: English Creek above SR 60

Collection Date/Time: 11/14/2019 10:00

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136545	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P374352	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P374401	
		Sulfate	17		mg SO4/L	P374404	
	SM 2120 B	Color (true)	75		PCU	P374314	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P374661	
	SM 2540 C-97	TDS	183		mg/L	P374862	
	SM 2540 D-97	TSS	9	I	mg/L	P374854	
	SM 4500 F-C-97	Fluoride	0.58		mg F/L	P374663	
2136546	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P374676	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P374618	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.1		mg N/L	P374476	
	EPA 365.1 Rev. 2.0	Total-P	0.84		mg P/L	P374586	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P374428	
2136547	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.64		mg P/L	P374379	
2136557	EPA 8321B	2,4-D	0.0084		ug/L	P374219	
		Acesulfame K**	0.10	U	ug/L	P374431	
		AMPA**	2.1		ug/L	P374431	
		Sucralose**	0.10		ug/L	P374431	MS
		Acetaminophen**	0.0080	U	ug/L	P374219	
		Acetamiprid**	0.060		ug/L	P374219	
		Endothall**	0.25	U	ug/L	P374431	
		Glufosinate**	0.10	U	ug/L	P374431	
		Glyphosate**	0.91		ug/L	P374431	
		Afidopyropen**	0.0020	UJ	ug/L	P374219	
		Bentazon	0.013		ug/L	P374219	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P374219	
		Carbamazepine**	0.0015	I	ug/L	P374219	
		Clothianidin**	0.015		ug/L	P374219	
		Dinotefuran**	0.0075	I	ug/L	P374219	
		Diuron	0.035		ug/L	P374219	
		Fenuron	0.016	U	ug/L	P374219	
		Fluridone**	0.0070		ug/L	P374219	
		Imazapyr**	0.081		ug/L	P374219	
		Hydrocodone**	0.0020	U	ug/L	P374219	
		Ibuprofen**	0.020	U	ug/L	P374219	
		Imidacloprid	0.014		ug/L	P374219	
		Linuron	0.0040	U	ug/L	P374219	
		Mandestrobin**	0.0020	UJ	ug/L	P374219	
		MCP	0.0020	U	ug/L	P374219	
		Naproxen**	0.0080	U	ug/L	P374219	
		Primidone**	0.0040	U	ug/L	P374219	
		Pyraclostrobin**	0.0020	U	ug/L	P374219	
		Thiamethoxam**	0.039		ug/L	P374219	

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136557	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P374219	
		Triclopyr**	0.0040	U	ug/L	P374219	

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. MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374352

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374401

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374404

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374676

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374618

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374476

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374586

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374379

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

Reference Method: EPA 8321B
Batch ID: P374219

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: P374219

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: P374431

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: P374314

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P374661

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

Reference Method: SM 2540 C-97
Batch ID: P374862

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P374854

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P374428

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: P374401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374618

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374586

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374379

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P374219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 160
Acetaminophen	84.7		P	30 - 160
Acetamiprid	100		P	40 - 160
Afidopyropen	89.8		P	40 - 160
Bentazon	82.3		P	30 - 160
Benzovindiflupyr	83.2		P	40 - 160
Carbamazepine	112		P	40 - 160
Clothianidin	83.9		P	40 - 160
Dinotefuran	83.6		P	40 - 160
Diuron	85.9		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P374219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	110		P	40 - 160
Fluridone	97.7		P	40 - 160
Hydrocodone	102		P	40 - 160
Ibuprofen	75.0		P	30 - 160
Imazapyr	77.4		P	40 - 160
Imidacloprid	111		P	40 - 160
Linuron	71.3		P	40 - 160
Mandestrobin	91.9		P	40 - 160
MCPP	106		P	40 - 160
Naproxen	99.8		P	40 - 160
Primidone	84.8		P	40 - 160
Pyraclostrobin	80.0		P	30 - 160
Thiamethoxam	103		P	40 - 160
Tolfenpyrad	51.7		P	40 - 160
Triclopyr	88.1		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P374431

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.8		P	40 - 150
AMPA	144		P	40 - 150
Endothall	97.7		P	40 - 150
Glufosinate	98.8		P	40 - 150
Glyphosate	117		P	40 - 140
Sucralose	123		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P374314

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

Reference Method: SM 2320 B-97
Batch ID: P374661

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

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P374428

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136471	Chloride	99.8		P	90 - 110
2136626	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136471	Sulfate	100		P	90 - 110
2136626	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136430	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136474	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136478	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136455	Total-P	102	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136479	O-Phosphate-P	95.2	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P374219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136201	2,4-D	93.1	68.8	P/P	40 - 160
2136201	Acetaminophen	93.7	77.5	P/P	30 - 160
2136201	Acetamiprid	107	98.5	P/P	40 - 160
2136201	Afidopyropen	92.8	85.9	P/P	40 - 160
2136201	Bentazon	47.4	40.4	P/P	30 - 160
2136201	Benzovindiflupyr	86.8	77.6	P/P	40 - 160
2136201	Carbamazepine	98.5	88.7	P/P	40 - 160
2136201	Clothianidin	91.4	76.6	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P374219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136201	Dinotefuran	112	96.9	P/P	40 - 160
2136201	Diuron	73.3	63.5	P/P	40 - 160
2136201	Fenuron	93.7	81.8	P/P	40 - 160
2136201	Fluridone	99.5	88.4	P/P	40 - 160
2136201	Hydrocodone	110	90.2	P/P	40 - 160
2136201	Ibuprofen	68.9	56.5	P/P	30 - 160
2136201	Imazapyr	64.6	50.9	P/P	40 - 160
2136201	Linuron	75.9	69.6	P/P	40 - 160
2136201	Mandestrobin	102	89.4	P/P	40 - 160
2136201	MCPP	100	80.2	P/P	40 - 160
2136201	Naproxen	102	87.1	P/P	40 - 160
2136201	Primidone	95.0	74.9	P/P	40 - 160
2136201	Pyraclostrobin	91.4	80.1	P/P	30 - 160
2136201	Thiamethoxam	130	114	P/P	40 - 160
2136201	Tolfenpyrad	68.4	57.9	P/P	40 - 160
2136201	Triclopyr	94.2	77.6	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P374431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136497	Acesulfame K	104	109	P/P	40 - 150
2136497	AMPA	121	120	P/P	40 - 150
2136497	Endothall	90.7	83.8	P/P	40 - 150
2136497	Glufosinate	103	111	P/P	40 - 150
2136497	Glyphosate	101	94.1	P/P	40 - 140
2136497	Sucralose	38.7	48.3	F/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136533	Fluoride	97.9	98.8	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P374428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136271	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P374352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136533	Turbidity	7.44	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136471	Chloride	0.0552	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136471	Sulfate	0.271	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136430	Ammonia-N	0.981	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136474	Kjeldahl Nitrogen	1.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136478	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136455	Total-P	2.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136479	O-Phosphate-P	1.06	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P374219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136201	2,4-D	19.2	Spike	P	0 - 30
2136201	Acetaminophen	18.9	Spike	P	0 - 30
2136201	Acetamiprid	8.41	Spike	P	0 - 30
2136201	Afidopyropen	7.68	Spike	P	0 - 30
2136201	Bentazon	15.9	Spike	P	0 - 30
2136201	Benzovindiflupyr	11.2	Spike	P	0 - 30
2136201	Carbamazepine	10.5	Spike	P	0 - 30
2136201	Clothianidin	11.0	Spike	P	0 - 30
2136201	Dinotefuran	14.8	Spike	P	0 - 30
2136201	Diuron	8.64	Spike	P	0 - 30
2136201	Fenuron	13.6	Spike	P	0 - 30
2136201	Fluridone	11.8	Spike	P	0 - 30
2136201	Hydrocodone	19.6	Spike	P	0 - 30
2136201	Ibuprofen	19.7	Spike	P	0 - 30
2136201	Imazapyr	18.6	Spike	P	0 - 30
2136201	Imidacloprid	6.98	Spike	P	0 - 30
2136201	Linuron	8.71	Spike	P	0 - 30
2136201	Mandestrobin	13.1	Spike	P	0 - 30
2136201	MCPP	22.3	Spike	P	0 - 30
2136201	Naproxen	15.8	Spike	P	0 - 30
2136201	Primidone	23.7	Spike	P	0 - 30
2136201	Pyraclostrobin	13.1	Spike	P	0 - 30
2136201	Thiamethoxam	8.45	Spike	P	0 - 30
2136201	Tolfenpyrad	16.7	Spike	P	0 - 30
2136201	Triclopyr	19.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P374431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136497	Acesulfame K	3.73	Spike	P	0 - 30
2136497	AMPA	1.14	Spike	P	0 - 30
2136497	Endothall	7.91	Spike	P	0 - 30
2136497	Glufosinate	6.89	Spike	P	0 - 30
2136497	Glyphosate	6.75	Spike	P	0 - 30
2136497	Sucralose	17.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P374314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136533	Color (true)	4.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P374661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136533	Total Alkalinity	0.443	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P374862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136477	TDS	4.18	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P374663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136533	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P374428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136271	Organic Carbon	0.565	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2136557
Field Sample ID: G2SW0006

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	76.1	P	30 - 160
EPA 8321B	Endothall-d6	121	P	30 - 160
EPA 8321B	Endothall-d6	121	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	121	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.7	P	30 - 160
EPA 8321B	Primidone-d5	88.9	P	30 - 160
EPA 8321B	Sucralose-d6	40.7	P	30 - 160
EPA 8321B	Sucralose-d6	40.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95765

Included Lab Sample IDs: 2136545

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

Reference Method: SM 2120 B

Run ID: A95771

Included Lab Sample IDs: 2136545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	99.6	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95786

Included Lab Sample IDs: 2136545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95799

Included Lab Sample IDs: 2136547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	98.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95823

Included Lab Sample IDs: 2136546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95835

Included Lab Sample IDs: 2136546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A95901

Included Lab Sample IDs: 2136545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A95901

Included Lab Sample IDs: 2136545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95904

Included Lab Sample IDs: 2136546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95908

Included Lab Sample IDs: 2136546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95917

Included Lab Sample IDs: 2136557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	154	93.6	P/P	60 - 160
Endothall	87.3	96.9	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A95918

Included Lab Sample IDs: 2136557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	138	126	P/P	60 - 160
Glufosinate	99.5	118	P/P	60 - 160
Glyphosate	88.4	97.1	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A95927

Included Lab Sample IDs: 2136557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.3	79.5	P/P	50 - 150
Acetaminophen	95.1	94.6	P/P	60 - 160
Acetamiprid	108	101	P/P	50 - 150
Afidopyropen	98.0	96.9	P/P	50 - 150
Bentazon	77.6	75.3	P/P	50 - 160
Benzovindiflupyr	105	109	P/P	50 - 150
Carbamazepine	106	107	P/P	60 - 150
Clothianidin	89.4	91.3	P/P	60 - 150
Dinotefuran	90.4	88.2	P/P	50 - 150
Diuron	98.0	99.1	P/P	60 - 150
Fenuron	105	104	P/P	60 - 150
Fluridone	107	109	P/P	60 - 160
Hydrocodone	105	112	P/P	60 - 150
Ibuprofen	95.0	87.2	P/P	50 - 160
Imazapyr	91.8	90.9	P/P	50 - 150
Imidacloprid	105	98.9	P/P	60 - 150
Linuron	89.7	91.7	P/P	60 - 150
Mandestrobin	109	109	P/P	50 - 150
MCPP	83.8	78.1	P/P	50 - 150
Naproxen	115	114	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95927

Included Lab Sample IDs: 2136557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	88.4	85.5	P/P	60 - 150
Pyraclostrobin	102	100	P/P	60 - 150
Thiamethoxam	102	102	P/P	50 - 150
Tolfenpyrad	77.1	75.1	P/P	60 - 150
Triclopyr	95.8	91.8	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95943

Included Lab Sample IDs: 2136546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96055

Included Lab Sample IDs: 2136557

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	130	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					7.44	
EPA 300.0 Rev. 2.1	Chloride	98.9	99.8	102		0.0552	
	Sulfate	98.7	100	101		0.271	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	103	104			0.981
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	102	101			1.24
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	98.5	98.5			0.0
EPA 365.1 Rev. 2.0	Total-P	103	102	99.7			2.55
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	95.2	96.6			1.06
EPA 8321B	2,4-D	111	93.1	68.8			19.2
	Acesulfame K	95.8	104	109			3.73
	Acetaminophen	84.7	93.7	77.5			18.9
	Acetamiprid	100	107	98.5			8.41
	Afidopyropen	89.8	92.8	85.9			7.68
	AMPA	144	121	120			1.14
	Bentazon	82.3	47.4	40.4			15.9
	Benzovindiflupyr	83.2	86.8	77.6			11.2
	Carbamazepine	112	98.5	88.7			10.5
	Clothianidin	83.9	91.4	76.6			11.0
	Dinotefuran	83.6	112	96.9			14.8
	Diuron	85.9	73.3	63.5			8.64
	Endothall	97.7	90.7	83.8			7.91
	Fenuron	110	93.7	81.8			13.6
	Fluridone	97.7	99.5	88.4			11.8
	Glufosinate	98.8	103	111			6.89
	Glyphosate	117	101	94.1			6.75
	Hydrocodone	102	110	90.2			19.6
	Ibuprofen	75.0	68.9	56.5			19.7
	Imazapyr	77.4	64.6	50.9			18.6
	Imidacloprid	111					6.98
	Linuron	71.3	75.9	69.6			8.71
	Mandestrobin	91.9	102	89.4			13.1
	MCPP	106	100	80.2			22.3
	Naproxen	99.8	102	87.1			15.8
	Primidone	84.8	95.0	74.9			23.7
	Pyraclostrobin	80.0	91.4	80.1			13.1
	Sucralose	123	38.7	48.3			17.7
	Thiamethoxam	103	130	114			8.45
	Tolfenpyrad	51.7	68.4	57.9			16.7
	Triclopyr	88.1	94.2	77.6			19.3
SM 2120 B	Color (true)	101				4.05	
SM 2320 B-97	Total Alkalinity	101				0.443	
SM 2540 C-97	TDS					4.18	
SM 4500 F-C-97	Fluoride	95.9	97.9	98.8			0.473
SM 5310 B-00	Organic Carbon	103	103				0.565

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2136545
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2136545

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2136545
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2136546
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2136546
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2136546
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2136546
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2136547
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2136557
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2136557
SM 2120 B / E31780	True Color measured at 450 nm	2136545
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2136545
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2136545
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2136545
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2136545
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2136546

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	11/15/2019			11/15/2019 17:09	Samantha Davila	2136545
EPA 300.0 Rev. 2.1	11/15/2019			11/19/2019 06:16	Lipi Saha	2136545
EPA 350.1 Rev. 2.0	11/15/2019			11/21/2019 14:04	Ping Hua	2136546
EPA 351.2 Rev. 2.0	11/15/2019	11/21/2019 12:36	Sima Feizi	11/22/2019 14:38	Jhamieka S. Greenwood	2136546
EPA 353.2 Rev. 2.0	11/15/2019			11/19/2019 11:04	Beverly Y. Sanders	2136546
EPA 365.1 Rev. 2.0	11/15/2019	11/21/2019 13:00	Yen Ta	11/22/2019 15:37	Benjamin T. Nordmann	2136546
EPA 365.1 Rev. 2.0 dissolved	11/15/2019			11/15/2019 15:08	Ping Hua	2136547
EPA 8321B	11/15/2019	11/20/2019 09:00	Hoor Shaik	11/24/2019 02:02	Juyoung Kim	2136557
	11/15/2019	11/20/2019 10:00	Rebecca Ware	11/20/2019 12:55	Rebecca Ware	2136557
	11/15/2019	11/20/2019 10:00	Rebecca Ware	11/20/2019 15:43	Rebecca Ware	2136557
	11/15/2019	11/20/2019 10:00	Rebecca Ware	11/26/2019 06:16	Rebecca Ware	2136557
SM 2120 B	11/15/2019			11/15/2019 17:22	Madeline Funaro	2136545
SM 2320 B-97	11/15/2019			11/20/2019 21:14	Dale L. Simmons	2136545
SM 2540 C-97	11/15/2019			11/19/2019 15:21	Yijie Li	2136545
SM 2540 D-97	11/15/2019			11/19/2019 15:21	Yijie Li	2136545
SM 4500 F-C-97	11/15/2019			11/20/2019 21:14	Dale L. Simmons	2136545
SM 5310 B-00	11/15/2019			11/18/2019 21:54	Lauren Lees	2136546