

Chemical Analysis Report

SO-DIST-2019-10-31-01

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

Event Description: **2019 SMP : Little Charlie Bowlegs HA**
Request ID: **RQ-2019-10-28-72**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

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

Date Certified: 19-NOV-2019 11:44

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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 Charlie Bowlegs

Collection Date/Time: 10/30/2019 12:00

Field ID: G3SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132682	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P373529	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P374074	
		Sulfate	1.6		mg SO4/L	P374079	
	SM 2120 B	Color (true)	440		PCU	P373534	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P373971	
	SM 2540 C-97	TDS	158		mg/L	P373882	
	SM 2540 D-97	TSS	2	U	mg/L	P373640	
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P373975	
2132683	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P373638	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P373809	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P373565	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P373920	
	SM 5310 B-00	Organic Carbon	39		mg C/L	P373609	
2132684	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.31		mg P/L	P373549	
2132702	EPA 8321B	2,4-D	0.0020	U	ug/L	P373393	
		Acesulfame K**	0.10	U	ug/L	P373607	
		AMPA**	0.23	I	ug/L	P373607	
		Sucralose**	0.035	I	ug/L	P373607	
		Acetaminophen**	0.0080	U	ug/L	P373393	
		Acetamiprid**	0.0020	U	ug/L	P373393	
		Endothall**	0.25	U	ug/L	P373607	
		Glufosinate**	0.10	U	ug/L	P373607	
		Glyphosate**	0.10	U	ug/L	P373607	
		Afidopyropen**	0.0020	UJ	ug/L	P373393	
		Bentazon	8.0E-04	U	ug/L	P373393	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373393	
		Carbamazepine**	8.0E-04	U	ug/L	P373393	
		Clothianidin**	0.0020	U	ug/L	P373393	
		Dinotefuran**	0.0020	U	ug/L	P373393	
		Diuron	0.0020	U	ug/L	P373393	
		Fenuron	0.016	U	ug/L	P373393	
		Fluridone**	8.0E-04	U	ug/L	P373393	
		Imazapyr**	0.0051	I	ug/L	P373393	
		Hydrocodone**	0.0020	U	ug/L	P373393	
		Ibuprofen**	0.020	U	ug/L	P373393	
		Imidacloprid	0.0020	U	ug/L	P373393	MS
		Linuron	0.0040	U	ug/L	P373393	
		Mandestrobin**	0.0020	UJ	ug/L	P373393	
		MCP	0.0020	U	ug/L	P373393	
		Naproxen**	0.0080	U	ug/L	P373393	
		Primidone**	0.0040	U	ug/L	P373393	
		Pyraclostrobin**	0.0020	U	ug/L	P373393	
		Thiamethoxam**	0.0020	U	ug/L	P373393	

Field ID: G3SD0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132702	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P373393	
		Triclopyr**	0.0040	U	ug/L	P373393	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes 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: P373529

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374074

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374079

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373638

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373809

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373565

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373549

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

Reference Method: EPA 8321B
Batch ID: P373393

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: P373393

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: P373607

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: P373534

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P373971

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

Reference Method: SM 2540 C-97
Batch ID: P373882

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P373640

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P373609

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: P374074

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P374079

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P373638

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P373809

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P373565

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: P373920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P373549

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

Reference Method: EPA 8321B
 Batch ID: P373393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	125		P	40 - 160
Acetaminophen	64.0		P	30 - 160
Acetamiprid	73.7		P	40 - 160
Afidopyropen	102		P	40 - 160
Bentazon	97.6		P	30 - 160
Benzovindiflupyr	91.5		P	40 - 160
Carbamazepine	93.5		P	40 - 160
Clothianidin	74.7		P	40 - 160
Dinotefuran	76.6		P	40 - 160
Diuron	88.5		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P373393

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	88.6		P	40 - 160
Fluridone	92.6		P	40 - 160
Hydrocodone	68.4		P	40 - 160
Ibuprofen	94.2		P	30 - 160
Imazapyr	73.5		P	40 - 160
Imidacloprid	86.6		P	40 - 160
Linuron	80.0		P	40 - 160
Mandestrobin	91.9		P	40 - 160
MCPP	134		P	40 - 160
Naproxen	76.7		P	40 - 160
Primidone	78.2		P	40 - 160
Pyraclostrobin	83.3		P	30 - 160
Thiamethoxam	91.2		P	40 - 160
Tolfenpyrad	59.8		P	40 - 160
Triclopyr	99.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	51.3		P	40 - 150
AMPA	85.5		P	40 - 150
Endothall	97.1		P	40 - 150
Glufosinate	103		P	40 - 150
Glyphosate	89.7		P	40 - 140
Sucralose	86.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P373534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P373971

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

Reference Method: SM 4500 F-C-97
Batch ID: P373975

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

Reference Method: SM 5310 B-00
Batch ID: P373609

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: P374074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132547	Chloride	99.4	99.3	P/P	90 - 110
2132648	Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132547	Sulfate	99.5	99.0	P/P	90 - 110
2132648	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132692	Ammonia-N	97.7	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132692	Kjeldahl Nitrogen	103	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132620	NO2NO3-N	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132712	O-Phosphate-P	96.6	97.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P373393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132432	2,4-D	115	115	P/P	40 - 160
2132432	Acetaminophen	66.6	66.1	P/P	30 - 160
2132432	Acetamiprid	98.8	89.8	P/P	40 - 160
2132432	Afidopyropen	117	117	P/P	40 - 160
2132432	Benzovindiflupyr	93.6	90.1	P/P	40 - 160
2132432	Carbamazepine	82.2	81.7	P/P	40 - 160
2132432	Clothianidin	95.1	93.5	P/P	40 - 160
2132432	Dinotefuran	109	110	P/P	40 - 160
2132432	Diuron	80.4	66.4	P/P	40 - 160
2132432	Fenuron	86.0	85.4	P/P	40 - 160
2132432	Hydrocodone	71.6	74.0	P/P	40 - 160
2132432	Ibuprofen	90.0	87.1	P/P	30 - 160
2132432	Imidacloprid	161	170	F/F	40 - 160
2132432	Linuron	66.7	59.1	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132432	Mandestrobin	89.7	88.5	P/P	40 - 160
2132432	MCP	126	123	P/P	40 - 160
2132432	Naproxen	64.6	71.1	P/P	40 - 160
2132432	Primidone	90.0	86.8	P/P	40 - 160
2132432	Pyraclostrobin	90.1	83.2	P/P	30 - 160
2132432	Thiamethoxam	120	123	P/P	40 - 160
2132432	Tolfenpyrad	66.6	59.1	P/P	40 - 160
2132432	Triclopyr	105	105	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132580	Acesulfame K	79.0	80.8	P/P	40 - 150
2132580	AMPA	94.5	91.7	P/P	40 - 150
2132580	Endothall	83.3	87.3	P/P	40 - 150
2132580	Glufosinate	100	98.0	P/P	40 - 150
2132580	Glyphosate	80.5	88.8	P/P	40 - 140
2132580	Sucralose	73.8	96.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132775	Fluoride	100	97.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P373609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132647	Organic Carbon	105	105	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P373529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132618	Turbidity	2.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132547	Chloride	0.0781	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P374079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132547	Sulfate	0.518	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P373638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132692	Ammonia-N	1.82	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P373809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132692	Kjeldahl Nitrogen	2.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P373565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132620	NO2NO3-N	0.245	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P373920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132663	Total-P	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P373549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132712	O-Phosphate-P	0.494	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132432	2,4-D	0.211	Spike	P	0 - 30
2132432	Acetaminophen	0.667	Spike	P	0 - 30
2132432	Acetamiprid	9.60	Spike	P	0 - 30
2132432	Afidopyropen	0.235	Spike	P	0 - 30
2132432	Bentazon	11.7	Spike	P	0 - 30
2132432	Benzovindiflupyr	3.80	Spike	P	0 - 30
2132432	Carbamazepine	0.562	Spike	P	0 - 30
2132432	Clothianidin	1.64	Spike	P	0 - 30
2132432	Dinotefuran	0.667	Spike	P	0 - 30
2132432	Diuron	13.3	Spike	P	0 - 30
2132432	Fenuron	0.679	Spike	P	0 - 30
2132432	Fluridone	2.88	Spike	P	0 - 30
2132432	Hydrocodone	3.22	Spike	P	0 - 30
2132432	Ibuprofen	3.18	Spike	P	0 - 30
2132432	Imazapyr	6.38	Spike	P	0 - 30
2132432	Imidacloprid	4.15	Spike	P	0 - 30
2132432	Linuron	12.0	Spike	P	0 - 30
2132432	Mandestrobin	1.36	Spike	P	0 - 30
2132432	MCPP	2.30	Spike	P	0 - 30
2132432	Naproxen	9.60	Spike	P	0 - 30
2132432	Primidone	3.64	Spike	P	0 - 30
2132432	Pyraclostrobin	8.00	Spike	P	0 - 30
2132432	Thiamethoxam	2.10	Spike	P	0 - 30
2132432	Tolfenpyrad	11.8	Spike	P	0 - 30
2132432	Triclopyr	0.747	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132580	Acesulfame K	2.30	Spike	P	0 - 30
2132580	AMPA	2.41	Spike	P	0 - 30
2132580	Endothall	4.67	Spike	P	0 - 30
2132580	Glufosinate	2.47	Spike	P	0 - 30
2132580	Glyphosate	9.89	Spike	P	0 - 30
2132580	Sucralose	25.5	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P373534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132618	Color (true)	0.665	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P373971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132775	Total Alkalinity	0.249	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P373882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132662	TDS	5.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P373975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132775	Fluoride	1.99	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P373609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132647	Organic Carbon	0.291	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2132702
Field Sample ID: G3SD0155

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	69.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.6	P	30 - 160
EPA 8321B	Diuron-d6	64.2	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	128	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	128	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.9	P	30 - 160
EPA 8321B	Primidone-d5	69.6	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A95384

Included Lab Sample IDs: 2132682

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

Reference Method: SM 2120 B

Run ID: A95385

Included Lab Sample IDs: 2132682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.8	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95389

Included Lab Sample IDs: 2132684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95392

Included Lab Sample IDs: 2132683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A95422

Included Lab Sample IDs: 2132683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	107	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95438

Included Lab Sample IDs: 2132683

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A95511

Included Lab Sample IDs: 2132682

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

Reference Method: EPA 8321B

Run ID: A95522

Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.4	62.3	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A95522
Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	90.2	94.9	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95523
Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.5	81.7	P/P	60 - 160
Glufosinate	107	102	P/P	60 - 160
Glyphosate	98.2	92.5	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95575
Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	120	111	P/P	60 - 160

Reference Method: SM 2320 B-97
Run ID: A95613
Included Lab Sample IDs: 2132682

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

Reference Method: SM 4500 F-C-97
Run ID: A95613
Included Lab Sample IDs: 2132682

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

Reference Method: EPA 8321B
Run ID: A95629
Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.9	96.9	P/P	50 - 150
Acetaminophen	108	105	P/P	60 - 160
Acetamiprid	114	110	P/P	50 - 150
Afidopyropen	104	105	P/P	50 - 150
Bentazon	107	103	P/P	50 - 160
Benzovindiflupyr	115	114	P/P	50 - 150
Carbamazepine	114	110	P/P	60 - 150
Clothianidin	104	104	P/P	60 - 150
Dinotefuran	98.1	104	P/P	50 - 150
Diuron	110	107	P/P	60 - 150
Fenuron	109	108	P/P	60 - 150
Fluridone	116	115	P/P	60 - 160
Hydrocodone	114	108	P/P	60 - 150
Ibuprofen	73.1	95.7	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A95629

Included Lab Sample IDs: 2132702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	97.1	105	P/P	50 - 150
Imidacloprid	106	103	P/P	60 - 150
Linuron	104	105	P/P	60 - 150
Mandestrobin	108	107	P/P	50 - 150
MCPP	91.0	111	P/P	50 - 150
Naproxen	86.0	90.6	P/P	50 - 160
Primidone	95.0	97.3	P/P	60 - 150
Pyraclostrobin	102	104	P/P	60 - 150
Thiamethoxam	101	102	P/P	50 - 150
Tolfenpyrad	107	104	P/P	60 - 150
Triclopyr	84.0	90.2	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95638

Included Lab Sample IDs: 2132683

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95657

Included Lab Sample IDs: 2132683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	98.8	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.96	
EPA 300.0 Rev. 2.1	Chloride	98.6	99.4	99.3	98.9			0.0781
	Sulfate	98.4	99.5	99.0	99.3			0.518
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.7	99.6				1.82
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	103	107				2.75
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	96.2					0.245
EPA 365.1 Rev. 2.0	Total-P	101						1.80
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.6	97.2				0.494
EPA 8321B	2,4-D	125	115	115				0.211
	Acesulfame K	51.3	79.0	80.8				2.30
	Acetaminophen	64.0	66.6	66.1				0.667
	Acetamiprid	73.7	98.8	89.8				9.60
	Afidopyropen	102	117	117				0.235
	AMPA	85.5	94.5	91.7				2.41
	Bentazon	97.6						11.7
	Benzovindiflupyr	91.5	93.6	90.1				3.80
	Carbamazepine	93.5	82.2	81.7				0.562
	Clothianidin	74.7	95.1	93.5				1.64
	Dinotefuran	76.6	109	110				0.667
	Diuron	88.5	80.4	66.4				13.3
	Endothall	97.1	83.3	87.3				4.67
	Fenuron	88.6	86.0	85.4				0.679
	Fluridone	92.6						2.88
	Glufosinate	103	100	98.0				2.47
	Glyphosate	89.7	80.5	88.8				9.89
	Hydrocodone	68.4	71.6	74.0				3.22
	Ibuprofen	94.2	90.0	87.1				3.18
	Imazapyr	73.5						6.38
	Imidacloprid	86.6	161	170				4.15
	Linuron	80.0	66.7	59.1				12.0
	Mandestrobin	91.9	89.7	88.5				1.36
	MCPP	134	126	123				2.30
	Naproxen	76.7	64.6	71.1				9.60
	Primidone	78.2	90.0	86.8				3.64
	Pyraclostrobin	83.3	90.1	83.2				8.00
	Sucralose	86.2	73.8	96.2				25.5
	Thiamethoxam	91.2	120	123				2.10
	Tolfenpyrad	59.8	66.6	59.1				11.8
	Triclopyr	99.2	105	105				0.747
SM 2120 B	Color (true)	98.3					0.665	
SM 2320 B-97	Total Alkalinity	100					0.249	
SM 2540 C-97	TDS						5.77	
SM 4500 F-C-97	Fluoride	97.8	100	97.6				1.99
SM 5310 B-00	Organic Carbon	103	105	105				0.291

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2132682
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2132682

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2132682
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2132683
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2132683
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2132683
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2132683
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2132684
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2132702
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2132702
SM 2120 B / E31780	True Color measured at 450 nm	2132682
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2132682
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2132682
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2132682
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2132682
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2132683

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	10/31/2019			10/31/2019 16:52	Rosalyn Ballman	2132682
EPA 300.0 Rev. 2.1	10/31/2019			11/07/2019 00:44	Jhamieka S. Greenwood	2132682
EPA 350.1 Rev. 2.0	10/31/2019			11/01/2019 13:41	Ping Hua	2132683
EPA 351.2 Rev. 2.0	10/31/2019	11/06/2019 12:52	Sima Feizi	11/07/2019 21:14	Jhamieka S. Greenwood	2132683
EPA 353.2 Rev. 2.0	10/31/2019			11/01/2019 11:04	Beverly Y. Sanders	2132683
EPA 365.1 Rev. 2.0	10/31/2019	11/08/2019 13:00	Lipi Saha	11/12/2019 12:46	Benjamin T. Nordmann	2132683
EPA 365.1 Rev. 2.0 dissolved	10/31/2019			10/31/2019 16:36	Samantha Davila	2132684
EPA 8321B	10/31/2019	11/01/2019 10:30	Hoor Shaik	11/09/2019 09:12	Juyoung Kim	2132702
	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/04/2019 14:55	Rebecca Ware	2132702
	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/05/2019 14:06	Rebecca Ware	2132702
	10/31/2019	11/04/2019 10:30	Rebecca Ware	11/06/2019 15:15	Rebecca Ware	2132702
SM 2120 B	10/31/2019			10/31/2019 17:40	Madeline Funaro	2132682
SM 2320 B-97	10/31/2019			11/08/2019 06:03	Dale L. Simmons	2132682
SM 2540 C-97	10/31/2019			11/01/2019 14:20	Rosalyn Ballman	2132682
SM 2540 D-97	10/31/2019			11/01/2019 14:20	Rosalyn Ballman	2132682
SM 4500 F-C-97	10/31/2019			11/08/2019 06:03	Dale L. Simmons	2132682
SM 5310 B-00	10/31/2019			11/01/2019 19:10	Madeline Funaro	2132683