

Chemical Analysis Report

NE-DIST-2019-09-24-01

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

Event Description: **Bmap 1**
Request ID: **RQ-2019-09-16-14**
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
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: 07-OCT-2019 15:27

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: GOODBYS CR ABOVE WEST BRANCH AT SAN CLERC **Collection Date/Time: 09/23/2019 12:10**

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121754	EPA 180.1 Rev. 2.0	Turbidity	7.3	A	NTU	P371233	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P371463	
		Sulfate	18		mg SO4/L	P371464	
	SM 2120 B	Color (true)	54	A	PCU	P371250	
	SM 2320 B-97	Total Alkalinity	131		mg CaCO3/L	P371528	
	SM 2540 C-97	TDS	208		mg/L	P371616	
	SM 2540 D-97	TSS	3	I	mg/L	P371583	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P371532	
2121755	EPA 350.1 Rev. 2.0	Ammonia-N	0.069		mg N/L	P371692	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P371300	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P371467	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P371479	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P371371	
2121756	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P371242	
2121760	EPA 8321B	2,4-D	0.0082		ug/L	P371132	
		Acesulfame K**	0.10	U	ug/L	P371269	
		AMPA**	1.1		ug/L	P371269	
		Sucralose**	0.27		ug/L	P371269	
		Acetaminophen**	0.0080	U	ug/L	P371132	
		Acetamiprid**	0.0020	U	ug/L	P371132	
		Endothall**	0.25	U	ug/L	P371269	
		Glufosinate**	0.10	U	ug/L	P371269	
		Glyphosate**	1.2		ug/L	P371269	
		Afidopyropen**	0.0020	UJ	ug/L	P371132	
		Bentazon	0.14		ug/L	P371132	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371132	
		Carbamazepine**	8.0E-04	U	ug/L	P371132	
		Clothianidin**	0.0025	I	ug/L	P371132	
		Dinotefuran**	0.0030	I	ug/L	P371132	
		Diuron	0.073		ug/L	P371132	
		Fenuron	0.016	U	ug/L	P371132	
		Fluridone**	0.016		ug/L	P371132	
		Imazapyr**	2.0		ug/L	P371132	
		Hydrocodone**	0.0020	U	ug/L	P371132	
		Ibuprofen**	0.020	U	ug/L	P371132	
		Imidacloprid	0.027		ug/L	P371132	MS
		Linuron	0.0040	U	ug/L	P371132	
		Mandestrobin**	0.0020	UJ	ug/L	P371132	
		MCP	0.0020	U	ug/L	P371132	MS
		Naproxen**	0.0080	U	ug/L	P371132	
		Primidone**	0.0040	U	ug/L	P371132	
		Pyraclostrobin**	0.0020	U	ug/L	P371132	

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121760	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P371132	
		Tolfenpyrad**	0.0020	U	ug/L	P371132	
		Triclopyr**	0.0040	U	ug/L	P371132	

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 fluridone and imazapyr could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon 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: P371233

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371463

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371464

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371692

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371300

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371467

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371479

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371242

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

Reference Method: EPA 8321B
Batch ID: P371132

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: P371132

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: P371269

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: P371250

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371528

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

Reference Method: SM 2540 C-97
Batch ID: P371616

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P371583

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371532

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371371

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: P371463

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371692

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: P371300

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: P371467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371479

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371242

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

Reference Method: EPA 8321B
Batch ID: P371132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	131		P	40 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	95.9		P	40 - 160
Afidopyropen	103		P	40 - 160
Bentazon	99.0		P	30 - 160
Benzovindiflupyr	89.4		P	40 - 160
Carbamazepine	119		P	40 - 160
Clothianidin	90.4		P	40 - 160
Dinotefuran	93.3		P	40 - 160
Diuron	91.3		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P371132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	101		P	40 - 160
Fluridone	107		P	40 - 160
Hydrocodone	96.4		P	40 - 160
Ibuprofen	84.8		P	30 - 160
Imazapyr	94.3		P	40 - 160
Imidacloprid	116		P	40 - 160
Linuron	76.1		P	40 - 160
Mandestrobin	93.0		P	40 - 160
MCPP	148		P	40 - 160
Naproxen	83.5		P	40 - 160
Primidone	87.3		P	40 - 160
Pyraclostrobin	84.8		P	30 - 160
Thiamethoxam	103		P	40 - 160
Tolfenpyrad	61.7		P	40 - 160
Triclopyr	116		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.8		P	40 - 150
AMPA	97.3		P	40 - 150
Endothall	81.4		P	40 - 150
Glufosinate	82.4		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	111		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P371250

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

Reference Method: SM 2320 B-97
Batch ID: P371528

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

Reference Method: SM 4500 F-C-97
Batch ID: P371532

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

Reference Method: SM 5310 B-00
Batch ID: P371371

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: P371463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121729	Chloride	97.4	98.3	P/P	90 - 110
2121845	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121729	Sulfate	97.5	99.7	P/P	90 - 110
2121845	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121763	Ammonia-N	94.6	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121755	Kjeldahl Nitrogen	95.4	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121663	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121660	Total-P	99.6	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121725	O-Phosphate-P	96.0	97.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121419	2,4-D	132	124	P/P	40 - 160
2121419	Acetaminophen	71.9	75.5	P/P	30 - 160
2121419	Acetamiprid	110	112	P/P	40 - 160
2121419	Afidopyropen	85.6	112	P/P	40 - 160
2121419	Benzovindiflupyr	99.9	98.9	P/P	40 - 160
2121419	Carbamazepine	104	105	P/P	40 - 160
2121419	Clothianidin	98.5	86.7	P/P	40 - 160
2121419	Dinotefuran	111	111	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P371132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121419	Diuron	83.5	82.0	P/P	40 - 160
2121419	Fenuron	83.4	84.5	P/P	40 - 160
2121419	Hydrocodone	93.2	97.4	P/P	40 - 160
2121419	Ibuprofen	89.8	90.7	P/P	30 - 160
2121419	Imidacloprid	182	192	F/F	40 - 160
2121419	Linuron	75.7	76.7	P/P	40 - 160
2121419	Mandestrobin	96.4	98.6	P/P	40 - 160
2121419	MCCP	162	168	F/F	40 - 160
2121419	Naproxen	90.4	102	P/P	40 - 160
2121419	Primidone	97.0	99.9	P/P	40 - 160
2121419	Pyraclostrobin	92.1	91.6	P/P	30 - 160
2121419	Thiamethoxam	142	143	P/P	40 - 160
2121419	Tolfenpyrad	71.0	76.6	P/P	40 - 160
2121419	Triclopyr	105	131	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121760	Acesulfame K	75.8	76.2	P/P	40 - 150
2121760	AMPA	80.2	82.4	P/P	40 - 150
2121760	Endothall	101	103	P/P	40 - 150
2121760	Glufosinate	93.1	82.1	P/P	40 - 150
2121760	Glyphosate	110	90.9	P/P	40 - 140
2121760	Sucralose	129	138	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P371532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121762	Fluoride	97.2	95.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121755	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121754	Turbidity	4.52	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121729	Chloride	0.902	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121729	Sulfate	2.21	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121763	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121755	Kjeldahl Nitrogen	2.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121663	NO2NO3-N	0.370	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121660	Total-P	2.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121725	O-Phosphate-P	0.849	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P371132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121419	2,4-D	4.44	Spike	P	0 - 30
2121419	Acetaminophen	4.87	Spike	P	0 - 30
2121419	Acetamiprid	1.41	Spike	P	0 - 30
2121419	Afidopyropen	26.8	Spike	P	0 - 30
2121419	Benzovindiflupyr	1.02	Spike	P	0 - 30
2121419	Carbamazepine	0.853	Spike	P	0 - 30
2121419	Clothianidin	12.3	Spike	P	0 - 30
2121419	Dinotefuran	0.235	Spike	P	0 - 30
2121419	Diuron	1.55	Spike	P	0 - 30
2121419	Fenuron	0.877	Spike	P	0 - 30
2121419	Fluridone	1.16	Spike	P	0 - 30
2121419	Hydrocodone	4.45	Spike	P	0 - 30
2121419	Ibuprofen	0.934	Spike	P	0 - 30
2121419	Imazapyr	7.44	Spike	P	0 - 30
2121419	Imidacloprid	4.37	Spike	P	0 - 30
2121419	Linuron	1.27	Spike	P	0 - 30
2121419	Mandestrobin	2.24	Spike	P	0 - 30
2121419	MCPP	3.72	Spike	P	0 - 30
2121419	Naproxen	12.5	Spike	P	0 - 30
2121419	Primidone	2.63	Spike	P	0 - 30
2121419	Pyraclostrobin	0.502	Spike	P	0 - 30
2121419	Thiamethoxam	0.693	Spike	P	0 - 30
2121419	Tolfenpyrad	7.61	Spike	P	0 - 30
2121419	Triclopyr	22.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P371269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121760	Acesulfame K	0.501	Spike	P	0 - 30
2121760	AMPA	1.20	Spike	P	0 - 30
2121760	Endothall	1.68	Spike	P	0 - 30
2121760	Glufosinate	12.6	Spike	P	0 - 30
2121760	Glyphosate	8.56	Spike	P	0 - 30
2121760	Sucralose	6.73	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P371250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121754	Color (true)	1.78	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P371528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121762	Total Alkalinity	0.0776	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P371616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121659	TDS	5.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P371532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121762	Fluoride	1.45	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P371371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121755	Organic Carbon	0.307	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2121760
Field Sample ID: 20030891

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	74.8	P	30 - 160
EPA 8321B	Bentazon-d7	61.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	86.9	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.8	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	158	P	30 - 160
EPA 8321B	Sucralose-d6	158	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94452

Included Lab Sample IDs: 2121754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	98.9	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94462

Included Lab Sample IDs: 2121754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94463

Included Lab Sample IDs: 2121756

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.6	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94469

Included Lab Sample IDs: 2121754

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

Reference Method: SM 5310 B-00

Run ID: A94516

Included Lab Sample IDs: 2121755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94525

Included Lab Sample IDs: 2121755

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

Reference Method: EPA 8321B

Run ID: A94527

Included Lab Sample IDs: 2121760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	97.1	P/P	60 - 160
Glufosinate	95.1	82.5	P/P	60 - 160
Glyphosate	93.1	96.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A94534
Included Lab Sample IDs: 2121760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	78.8	106	P/P	50 - 150
Acetaminophen	117	111	P/P	60 - 160
Acetamiprid	113	116	P/P	50 - 150
Afidopyropen	98.8	122	P/P	50 - 150
Bentazon	103	103	P/P	50 - 160
Benzovindiflupyr	103	111	P/P	50 - 150
Carbamazepine	122	125	P/P	60 - 150
Clothianidin	120	120	P/P	60 - 150
Dinotefuran	104	98.4	P/P	50 - 150
Diuron	106	104	P/P	60 - 150
Fenuron	112	115	P/P	60 - 150
Fluridone	109	113	P/P	60 - 160
Hydrocodone	113	114	P/P	60 - 150
Ibuprofen	91.5	105	P/P	50 - 160
Imazapyr	99.1	107	P/P	50 - 150
Imidacloprid	106	110	P/P	60 - 150
Linuron	102	106	P/P	60 - 150
Mandestrobin	115	117	P/P	50 - 150
MCPP	98.5	106	P/P	50 - 150
Naproxen	92.9	132	P/P	50 - 160
Primidone	111	111	P/P	60 - 150
Pyraclostrobin	107	118	P/P	60 - 150
Thiamethoxam	109	113	P/P	50 - 150
Tolfenpyrad	106	114	P/P	60 - 150
Triclopyr	106	97.3	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A94549
Included Lab Sample IDs: 2121760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.5	95.0	P/P	60 - 160
Endothall	104	96.8	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A94554
Included Lab Sample IDs: 2121755

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A94578
Included Lab Sample IDs: 2121755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A94582
Included Lab Sample IDs: 2121754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A94582
Included Lab Sample IDs: 2121754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	103	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A94586
Included Lab Sample IDs: 2121760

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	111	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A94647
Included Lab Sample IDs: 2121755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	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						4.52	
EPA 300.0 Rev. 2.1	Chloride	97.3	97.4	98.3	96.8			0.902
	Sulfate	98.2	97.5	99.7	97.4			2.21
EPA 350.1 Rev. 2.0	Ammonia-N	100	94.6	96.1				1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	95.4	98.8				2.44
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	101	102				0.370
EPA 365.1 Rev. 2.0	Total-P	94.6	99.6	96.3				2.73
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.0	97.0				0.849
EPA 8321B	2,4-D	131	132	124				4.44
	Acesulfame K	87.8	75.8	76.2				0.501
	Acetaminophen	87.5	71.9	75.5				4.87
	Acetamiprid	95.9	110	112				1.41
	Afidopyropen	103	85.6	112				26.8
	AMPA	97.3	80.2	82.4				1.20
	Bentazon	99.0						
	Benzovindiflupyr	89.4	99.9	98.9				1.02
	Carbamazepine	119	104	105				0.853
	Clothianidin	90.4	98.5	86.7				12.3
	Dinotefuran	93.3	111	111				0.235
	Diuron	91.3	83.5	82.0				1.55
	Endothall	81.4	101	103				1.68
	Fenuron	101	83.4	84.5				0.877
	Fluridone	107						1.16
	Glufosinate	82.4	93.1	82.1				12.6
	Glyphosate	107	110	90.9				8.56
	Hydrocodone	96.4	93.2	97.4				4.45
	Ibuprofen	84.8	89.8	90.7				0.934
	Imazapyr	94.3						7.44
	Imidacloprid	116	182	192				4.37
	Linuron	76.1	75.7	76.7				1.27
	Mandestrobin	93.0	96.4	98.6				2.24
	MCPP	148	162	168				3.72
	Naproxen	83.5	90.4	102				12.5
	Primidone	87.3	97.0	99.9				2.63
	Pyraclostrobin	84.8	92.1	91.6				0.502
	Sucralose	111	129	138				6.73
	Thiamethoxam	103	142	143				0.693
	Tolfenpyrad	61.7	71.0	76.6				7.61
	Triclopyr	116	105	131				22.6
SM 2120 B	Color (true)	101					1.78	
SM 2320 B-97	Total Alkalinity	103					0.0776	
SM 2540 C-97	TDS						5.02	
SM 4500 F-C-97	Fluoride	98.8	97.2	95.5				1.45
SM 5310 B-00	Organic Carbon	103	102	102				0.307

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2121754
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2121754

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2121754
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2121755
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2121755
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2121755
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2121755
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2121756
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2121760
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2121760
SM 2120 B / E31780	True Color measured at 450 nm	2121754
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2121754
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2121754
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2121754
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2121754
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2121755

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	09/24/2019			09/24/2019 16:58	Rosalyn Ballman	2121754
EPA 300.0 Rev. 2.1	09/24/2019			09/25/2019 19:52	Jhamieka S. Greenwood	2121754
EPA 350.1 Rev. 2.0	09/24/2019			10/01/2019 12:38	Ping Hua	2121755
EPA 351.2 Rev. 2.0	09/24/2019	09/25/2019 13:28	Sima Feizi	09/26/2019 19:45	Julia Storbeck	2121755
EPA 353.2 Rev. 2.0	09/24/2019			09/26/2019 10:24	Beverly Y. Sanders	2121755
EPA 365.1 Rev. 2.0	09/24/2019	09/27/2019 15:05	Lipi Saha	09/30/2019 08:29	Lipi Saha	2121755
EPA 365.1 Rev. 2.0 dissolved	09/24/2019			09/24/2019 16:25	Jhamieka S. Greenwood	2121756
EPA 8321B	09/24/2019	09/24/2019 13:10	Hoor Shaik	09/25/2019 13:49	Juyoung Kim	2121760
	09/24/2019	09/24/2019 13:10	Hoor Shaik	09/25/2019 17:51	Juyoung Kim	2121760
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/25/2019 16:02	Rebecca Ware	2121760
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/26/2019 18:01	Rebecca Ware	2121760
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 22:21	Rebecca Ware	2121760
SM 2120 B	09/24/2019			09/24/2019 17:26	Madeline Funaro	2121754
SM 2320 B-97	09/24/2019			09/28/2019 13:54	Dale L. Simmons	2121754
SM 2540 C-97	09/24/2019			09/25/2019 14:25	Yijie Li	2121754
SM 2540 D-97	09/24/2019			09/25/2019 14:25	Yijie Li	2121754
SM 4500 F-C-97	09/24/2019			09/28/2019 13:54	Dale L. Simmons	2121754
SM 5310 B-00	09/24/2019			09/25/2019 14:41	Madeline Funaro	2121755