

Chemical Analysis Report

NW-DIST-2020-07-28-01

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

Event Description: **ESC/BW BAY RUN**
Request ID: **RQ-2020-07-27-18**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 19-AUG-2020 09:53

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned on a light gray rectangular 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: Trout Bayou

Collection Date/Time: 07/27/2020 13:05

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186380	EPA 180.1 Rev. 2.0	Turbidity	4.7	A	NTU	P385304	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P386077	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P385380	
	SM 2540 D-2011	TSS	9	I	mg/L	P385655	
	SM 4500 F-C-2011	Fluoride	0.57		mg F/L	P385383	
2186382	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P385527	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P385667	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P385433	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P385416	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P385451	
2186384	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P385284	
2186395	EPA 8321B	2,4-D	0.0051	I	ug/L	P385308	
		Acesulfame K**	0.10	UJ	ug/L	P385298	SUR
		AMPA**	1.0	U	ug/L	P385298	
		Sucralose**	0.066		ug/L	P385298	
		Acetaminophen**	0.0080	U	ug/L	P385308	
		Acetamiprid**	0.0020	U	ug/L	P385308	
		Endothall**	0.25	UJ	ug/L	P385298	SUR
		Glufosinate**	1.0	U	ug/L	P385298	
		Glyphosate**	1.0	U	ug/L	P385298	
		Afidopyropen**	0.0020	U	ug/L	P385308	
		Bentazon	8.0E-04	U	ug/L	P385308	
		Benzovindiflupyr**	0.0020	U	ug/L	P385308	
		Carbamazepine**	8.0E-04	U	ug/L	P385308	
		Clothianidin**	0.0020	U	ug/L	P385308	
		Dinotefuran**	0.0020	U	ug/L	P385308	
		Diuron	0.0020	U	ug/L	P385308	
		Fenuron	0.016	U	ug/L	P385308	
		Fluridone**	8.0E-04	U	ug/L	P385308	
		Imazapyr**	0.012	I	ug/L	P385308	
		Hydrocodone**	0.0020	U	ug/L	P385308	
		Ibuprofen**	0.020	U	ug/L	P385308	
		Imidacloprid	0.0020	U	ug/L	P385308	
		Linuron	0.0040	U	ug/L	P385308	
		Mandestrobin**	0.0020	U	ug/L	P385308	
		MCP	0.0020	U	ug/L	P385308	
		Naproxen**	0.0080	U	ug/L	P385308	
		Primidone**	0.0040	U	ug/L	P385308	
		Pyraclostrobin**	0.0020	U	ug/L	P385308	
		Thiamethoxam**	0.0020	U	ug/L	P385308	
		Tolfenpyrad**	0.0020	U	ug/L	P385308	
		Triclopyr**	0.0040	U	ug/L	P385308	

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for 2,4-D and bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Judges Bayou Mouth

Collection Date/Time: 07/27/2020 13:40

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2186381	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P385304	
	EPA 300.0 Rev. 2.1	Bromide	10		mg Br/L	P386077	
	SM 2320 B-2011	Total Alkalinity	43		mg CaCO3/L	P385380	
	SM 2540 D-2011	TSS	11		mg/L	P385654	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P385383	
2186383	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P385527	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P385667	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.083		mg N/L	P385433	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P385416	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P385449	
2186385	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P385284	
2186396	EPA 8321B	Acesulfame K**	1.0	U	ug/L	P385298	
		2,4-D	0.0035	I	ug/L	P385308	
		AMPA**	1.0	U	ug/L	P385298	
		Sucralose**	0.010	UJ	ug/L	P385298	SUR
		Acetaminophen**	0.0080	U	ug/L	P385308	
		Endothall**	2.5	U	ug/L	P385298	
		Acetamiprid**	0.0020	U	ug/L	P385308	
		Glufosinate**	1.0	U	ug/L	P385298	
		Glyphosate**	1.0	U	ug/L	P385298	
		Afidopyropen**	0.0020	U	ug/L	P385308	
		Bentazon	8.0E-04	U	ug/L	P385308	
		Benzovindiflupyr**	0.0020	U	ug/L	P385308	
		Carbamazepine**	8.0E-04	U	ug/L	P385308	
		Clothianidin**	0.0020	U	ug/L	P385308	
		Dinotefuran**	0.0020	U	ug/L	P385308	
		Diuron	0.0020	U	ug/L	P385308	
		Fenuron	0.016	U	ug/L	P385308	
		Fluridone**	8.0E-04	U	ug/L	P385308	
		Imazapyr**	0.030		ug/L	P385308	
		Hydrocodone**	0.0020	U	ug/L	P385308	
		Ibuprofen**	0.020	U	ug/L	P385308	
		Imidacloprid	0.0020	U	ug/L	P385308	
		Linuron	0.0040	U	ug/L	P385308	
		Mandestrobin**	0.0020	U	ug/L	P385308	
		MCP	0.0020	U	ug/L	P385308	
		Naproxen**	0.0080	U	ug/L	P385308	
		Primidone**	0.0040	U	ug/L	P385308	
		Pyraclostrobin**	0.0020	U	ug/L	P385308	
		Thiamethoxam**	0.0020	U	ug/L	P385308	
		Tolfenpyrad**	0.0020	U	ug/L	P385308	
		Triclopyr**	0.0040	U	ug/L	P385308	

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MDL for some parameters elevated due to matrix interference.
EPA 8321B: MS accuracy for 2,4-D and bentazon could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Results confirmed in re-extraction. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385304

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386077

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385527

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385667

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385433

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385416

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385284

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

Reference Method: EPA 8321B
Batch ID: P385298

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385308

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
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: SM 2320 B-2011
Batch ID: P385380

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P385654

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385655

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385383

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P385449

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

Reference Method: SM 5310 B-2011
Batch ID: P385451

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: P386077

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P385527

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P385667

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: P385433

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: P385416

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: P385284

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.3		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P385298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	82.0		P	40 - 150
Endothall	97.0		P	40 - 150
Glufosinate	92.9		P	40 - 150
Glyphosate	89.5		P	40 - 140
Sucralose	89.9		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	93.9		P	30 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	80.1		P	30 - 160
Afidopyropen	68.4		P	30 - 160
Bentazon	68.9		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	59.6		P	30 - 160
Carbamazepine	73.9		P	30 - 160
Clothianidin	91.5		P	30 - 160
Dinotefuran	93.3		P	30 - 160
Diuron	67.5		P	30 - 160
Fenuron	92.9		P	30 - 160
Fluridone	97.5		P	30 - 160
Hydrocodone	83.9		P	30 - 160
Ibuprofen	79.0		P	30 - 160
Imazapyr	58.2		P	30 - 160
Imidacloprid	113		P	30 - 160
Linuron	69.3		P	30 - 160
Mandestrobin	78.5		P	30 - 160
MCPP	112		P	30 - 160
Naproxen	62.6		P	30 - 160
Primidone	92.3		P	30 - 160
Pyraclostrobin	56.9		P	30 - 160
Thiamethoxam	91.1		P	30 - 160
Tolfenpyrad	30.9		P	30 - 160
Triclopyr	70.2		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P385380

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P385383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P385449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P385451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186894	Bromide	97.3	95.2	P/P	90 - 110
2186914	Bromide	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186382	Ammonia-N	98.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186417	Kjeldahl Nitrogen	115	110	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186383	NO2NO3-N	99.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186286	Total-P	97.7	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186384	O-Phosphate-P	96.5	97.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186301	Acesulfame K	105	108	P/P	40 - 150
2186301	AMPA	49.0	60.6	P/P	40 - 150
2186301	Endothall	118	121	P/P	40 - 150
2186301	Glufosinate	93.5	106	P/P	40 - 150
2186301	Glyphosate	77.8	77.8	P/P	40 - 140
2186301	Sucralose	93.7	98.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Acetaminophen	81.0	81.0	P/P	30 - 160
2186499	Acetamiprid	72.3	72.1	P/P	30 - 160
2186499	Afidopyropen	68.1	62.0	P/P	30 - 160
2186499	Benzovindiflupyr	54.4	51.4	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Carbamazepine	60.4	59.5	P/P	30 - 160
2186499	Clothianidin	78.8	81.8	P/P	30 - 160
2186499	Dinotefuran	86.9	88.0	P/P	30 - 160
2186499	Diuron	50.1	50.6	P/P	30 - 160
2186499	Fenuron	74.3	72.3	P/P	30 - 160
2186499	Fluridone	92.2	91.9	P/P	30 - 160
2186499	Hydrocodone	71.4	67.6	P/P	30 - 160
2186499	Ibuprofen	60.6	64.1	P/P	30 - 160
2186499	Imazapyr	61.8	50.6	P/P	30 - 160
2186499	Imidacloprid	131	135	P/P	30 - 160
2186499	Linuron	55.8	58.1	P/P	30 - 160
2186499	Mandestrobin	71.8	68.2	P/P	30 - 160
2186499	MCP	101	97.8	P/P	30 - 160
2186499	Naproxen	48.7	48.5	P/P	30 - 160
2186499	Primidone	79.4	93.2	P/P	30 - 160
2186499	Pyraclostrobin	52.9	54.0	P/P	30 - 160
2186499	Thiamethoxam	90.0	78.2	P/P	30 - 160
2186499	Tolfenpyrad	36.3	39.4	P/P	30 - 160
2186499	Triclopyr	60.6	71.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P385383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186306	Fluoride	99.1	97.0	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186371	Organic Carbon	96.2	97.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P385451

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186569	Organic Carbon	96.2	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186380	Turbidity	2.77	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186894	Bromide	1.98	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186382	Ammonia-N	0.738	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186417	Kjeldahl Nitrogen	3.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186383	NO2NO3-N	1.07	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186286	Total-P	1.73	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186384	O-Phosphate-P	0.687	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Acesulfame K	3.41	Spike	P	0 - 30
2186301	AMPA	21.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P385298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186301	Endothall	2.22	Spike	P	0 - 30
2186301	Glufosinate	12.9	Spike	P	0 - 30
2186301	Glyphosate	0.0167	Spike	P	0 - 30
2186301	Sucralose	5.07	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P385308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186499	2,4-D	1.18	Spike	P	0 - 30
2186499	Acetaminophen	0.0156	Spike	P	0 - 30
2186499	Acetamiprid	0.348	Spike	P	0 - 30
2186499	Afidopyropen	9.32	Spike	P	0 - 30
2186499	Bentazon	0.458	Spike	P	0 - 30
2186499	Benzovindiflupyr	5.54	Spike	P	0 - 30
2186499	Carbamazepine	1.52	Spike	P	0 - 30
2186499	Clothianidin	3.38	Spike	P	0 - 30
2186499	Dinotefuran	1.28	Spike	P	0 - 30
2186499	Diuron	0.833	Spike	P	0 - 30
2186499	Fenuron	2.75	Spike	P	0 - 30
2186499	Fluridone	0.266	Spike	P	0 - 30
2186499	Hydrocodone	5.39	Spike	P	0 - 30
2186499	Ibuprofen	5.60	Spike	P	0 - 30
2186499	Imazapyr	13.0	Spike	P	0 - 30
2186499	Imidacloprid	2.62	Spike	P	0 - 30
2186499	Linuron	4.10	Spike	P	0 - 30
2186499	Mandestrobin	5.15	Spike	P	0 - 30
2186499	MCP	3.62	Spike	P	0 - 30
2186499	Naproxen	0.365	Spike	P	0 - 30
2186499	Primidone	15.9	Spike	P	0 - 30
2186499	Pyraclostrobin	2.18	Spike	P	0 - 30
2186499	Thiamethoxam	13.9	Spike	P	0 - 30
2186499	Tolfenpyrad	8.17	Spike	P	0 - 30
2186499	Triclopyr	16.5	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
 Batch ID: P385380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186306	Total Alkalinity	0.831	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P385383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186306	Fluoride	1.41	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P385449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186371	Organic Carbon	0.636	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P385451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186569	Organic Carbon	0.137	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2186395
Field Sample ID: G4NW0443

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.4	P	30 - 160
EPA 8321B	Diuron-d6	69.1	P	30 - 160
EPA 8321B	Endothall-d6	371	F	30 - 160
EPA 8321B	Endothall-d6	371	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	128	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	128	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.9	P	30 - 160
EPA 8321B	Primidone-d5	94.5	P	30 - 160
EPA 8321B	Sucralose-d6	80.4	P	30 - 160
EPA 8321B	Sucralose-d6	80.4	P	30 - 160

Lab Sample ID: 2186396
Field Sample ID: G4NW0441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.6	P	30 - 160
EPA 8321B	Diuron-d6	73.6	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	72.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	72.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.5	P	30 - 160
EPA 8321B	Primidone-d5	95.4	P	30 - 160
EPA 8321B	Sucralose-d6	23.0	F	30 - 160
EPA 8321B	Sucralose-d6	23.0	F	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100133

Included Lab Sample IDs: 2186384, 2186385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.8	P/P	90 - 110
O-Phosphate-P	97.8	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100145

Included Lab Sample IDs: 2186380, 2186381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A100159

Included Lab Sample IDs: 2186395, 2186396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.2	93.4	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A100179

Included Lab Sample IDs: 2186380, 2186381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.0	P/P	90 - 110
Total Alkalinity	98.0	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100179

Included Lab Sample IDs: 2186380, 2186381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100197

Included Lab Sample IDs: 2186382, 2186383

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

Reference Method: EPA 8321B

Run ID: A100198

Included Lab Sample IDs: 2186395, 2186396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	141	64.9	P/P	60 - 160
Acesulfame K	74.3	64.4	P/P	60 - 160
Endothall	106	107	P/P	60 - 160
Endothall	108	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A100203

Included Lab Sample IDs: 2186382, 2186383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.3	P/P	90 - 110
Organic Carbon	97.4	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100223

Included Lab Sample IDs: 2186395, 2186396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	70.1	79.6	P/P	60 - 160
Glufosinate	107	108	P/P	60 - 160
Glyphosate	98.1	92.7	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100228

Included Lab Sample IDs: 2186382, 2186383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.2	P/P	90 - 110
Ammonia-N	99.6	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100252

Included Lab Sample IDs: 2186382, 2186383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.2	93.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2186395, 2186396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.0	82.4	P/P	50 - 150
Acetaminophen	107	108	P/P	60 - 160
Acetamiprid	115	113	P/P	50 - 150
Afidopyropen	104	97.2	P/P	50 - 150
Bentazon	110	99.9	P/P	50 - 160
Benzovindiflupyr	92.1	94.2	P/P	50 - 150
Carbamazepine	116	120	P/P	60 - 150
Clothianidin	98.9	111	P/P	60 - 150
Dinotefuran	92.9	96.3	P/P	50 - 150
Diuron	116	107	P/P	60 - 160
Fenuron	107	109	P/P	60 - 150
Fluridone	128	125	P/P	60 - 160
Hydrocodone	99.3	106	P/P	60 - 150
Ibuprofen	90.4	89.9	P/P	50 - 160
Imazapyr	76.0	72.3	P/P	50 - 150
Imidacloprid	103	106	P/P	60 - 150
Linuron	100	97.7	P/P	60 - 150
Mandestrobin	126	119	P/P	50 - 150
MCPP	92.1	93.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2186395, 2186396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Naproxen	82.8	82.9	P/P	50 - 160
Primidone	96.5	103	P/P	60 - 150
Pyraclostrobin	94.6	93.6	P/P	60 - 150
Thiamethoxam	94.3	120	P/P	50 - 150
Tolfenpyrad	72.7	78.1	P/P	60 - 150
Triclopyr	81.1	82.1	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100320

Included Lab Sample IDs: 2186382, 2186383

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.2	91.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100476

Included Lab Sample IDs: 2186380, 2186381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	98.6	P/P	90 - 110
Bromide	98.6	99.4	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						2.77	
EPA 300.0 Rev. 2.1	Bromide	99.1	97.3	95.2	97.3			1.98
EPA 350.1 Rev. 2.0	Ammonia-N	102	98.2	99.0				0.738
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	115	110				3.79
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.2	97.6				1.07
EPA 365.1 Rev. 2.0	Total-P	103	97.7	96.0				1.73
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	96.5	97.2				0.687
EPA 8321B	2,4-D	93.9						1.18
	Acesulfame K	115	105	108				3.41
	Acetaminophen	87.5	81.0	81.0				0.0156
	Acetamiprid	80.1	72.3	72.1				0.348
	Afidopyropen	68.4	68.1	62.0				9.32
	AMPA	82.0	49.0	60.6				21.2
	Bentazon	68.9						0.458
	Benzovindiflupyr	59.6	51.4	54.4				5.54
	Carbamazepine	73.9	60.4	59.5				1.52
	Clothianidin	91.5	78.8	81.8				3.38
	Dinotefuran	93.3	86.9	88.0				1.28
	Diuron	67.5	50.1	50.6				0.833
	Endothall	97.0	118	121				2.22
	Fenuron	92.9	74.3	72.3				2.75
	Fluridone	97.5	92.2	91.9				0.266
	Glufosinate	92.9	93.5	106				12.9
	Glyphosate	89.5	77.8	77.8				0.0167
	Hydrocodone	83.9	71.4	67.6				5.39
	Ibuprofen	79.0	64.1	60.6				5.60
	Imazapyr	58.2	50.6	61.8				13.0
	Imidacloprid	113	131	135				2.62
	Linuron	69.3	55.8	58.1				4.10
	Mandestrobin	78.5	71.8	68.2				5.15
	MCPP	112	97.8	101				3.62
	Naproxen	62.6	48.5	48.7				0.365
	Primidone	92.3	79.4	93.2				15.9
	Pyraclostrobin	56.9	54.0	52.9				2.18
	Sucralose	89.9	93.7	98.6				5.07
	Thiamethoxam	91.1	90.0	78.2				13.9
	Tolfenpyrad	30.9	39.4	36.3				8.17
	Triclopyr	70.2	71.5	60.6				16.5
SM 2320 B-2011	Total Alkalinity	99.9					0.831	
SM 4500 F-C-2011	Fluoride	99.3	99.1	97.0				1.41
SM 5310 B-2011	Organic Carbon	95.8	96.2	97.0				0.636
	Organic Carbon	98.3	96.2	96.4				0.137

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2186380, 2186381
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2186380, 2186381
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2186382, 2186383
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2186382, 2186383
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2186382, 2186383
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2186382, 2186383

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2186384, 2186385
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2186395, 2186396
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2186395, 2186396
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2186380, 2186381
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2186380, 2186381
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2186380, 2186381
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2186382, 2186383

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	07/28/2020			07/28/2020 16:10	Blanca Fach	2186380, 2186381
EPA 300.0 Rev. 2.1	07/28/2020			08/13/2020 04:40	Julia Storbeck	2186380
	07/28/2020			08/13/2020 05:31	Julia Storbeck	2186381
EPA 350.1 Rev. 2.0	07/28/2020			08/01/2020 14:01	Ping Hua	2186382
	07/28/2020			08/01/2020 14:42	Ping Hua	2186383
EPA 351.2 Rev. 2.0	07/28/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 13:59	Jhamieka S. Greenwood	2186382
	07/28/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 14:00	Jhamieka S. Greenwood	2186383
EPA 353.2 Rev. 2.0	07/28/2020			07/31/2020 09:52	Beverly Y. Sanders	2186383
	07/28/2020			07/31/2020 10:08	Beverly Y. Sanders	2186382
EPA 365.1 Rev. 2.0	07/28/2020	07/31/2020 10:10	Lipi Saha	08/04/2020 12:26	Benjamin T. Nordmann	2186382
	07/28/2020	07/31/2020 10:10	Lipi Saha	08/04/2020 12:27	Benjamin T. Nordmann	2186383
EPA 365.1 Rev. 2.0 dissolved	07/28/2020			07/28/2020 16:43	Samantha Davila	2186384
	07/28/2020			07/28/2020 16:52	Samantha Davila	2186385
EPA 8321B	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/29/2020 12:56	Mohammad Ghaffari	2186395
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/29/2020 13:07	Mohammad Ghaffari	2186396
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/30/2020 11:00	Rebecca Ware	2186395
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/30/2020 15:41	Rebecca Ware	2186396
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/31/2020 14:33	Rebecca Ware	2186396
	07/28/2020	07/29/2020 12:00	Mohammad Ghaffari	07/31/2020 15:27	Rebecca Ware	2186395
	07/28/2020	07/30/2020 14:00	Hoor Shaik	08/01/2020 15:49	Juyoung Kim	2186395
	07/28/2020	07/30/2020 14:00	Hoor Shaik	08/01/2020 16:24	Juyoung Kim	2186396
SM 2320 B-2011	07/28/2020			07/30/2020 04:10	Dale L. Simmons	2186381
	07/28/2020			07/30/2020 05:38	Dale L. Simmons	2186380
SM 2540 D-2011	07/28/2020			07/29/2020 15:16	Yijie Li	2186380, 2186381
SM 4500 F-C-2011	07/28/2020			07/30/2020 02:42	Dale L. Simmons	2186381
	07/28/2020			07/30/2020 02:57	Dale L. Simmons	2186380
SM 5310 B-2011	07/28/2020			07/30/2020 23:28	David Boose	2186383
	07/28/2020			07/31/2020 09:42	David Boose	2186382