

Chemical Analysis Report

SO-DIST-2020-10-09-01

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

Event Description: **c-19, bee branch**
Request ID: **RQ-2020-10-05-55**
Customer: **SO-DIST**
Project ID: **SMP**

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Date Certified: 03-NOV-2020 13:20



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: C-19 @ US 27

Collection Date/Time: 10/08/2020 11:10

Field ID: G3SD0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201060	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P388484	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P388736	
		Sulfate	16		mg SO4/L	P388739	
	SM 2120 B-2011	Color (true)	240		PCU	P388491	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P388771	
	SM 2540 C-2011	TDS	256	A	mg/L	P388920	
	SM 2540 D-2011	TSS	8	IA	mg/L	P388924	
	SM 4500 F-C-2011	Fluoride	0.29		mg F/L	P388775	
2201061	EPA 350.1 Rev. 2.0	Ammonia-N	0.27		mg N/L	P388506	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P388582	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P388559	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P388639	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P388725	
2201062	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.044		mg P/L	P388487	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Bee Branch @ Loblolly Bay Rd

Collection Date/Time: 10/08/2020 10:15

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201057	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P388484	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P388736	
		Sulfate	2.7		mg SO4/L	P388739	
	SM 2120 B-2011	Color (true)	420		PCU	P388491	
	SM 2320 B-2011	Total Alkalinity	8.7		mg CaCO3/L	P388771	
	SM 2540 C-2011	TDS	97		mg/L	P388920	
	SM 2540 D-2011	TSS	3	I	mg/L	P388924	
2201058	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P388775	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P388506	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P389491	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P388559	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P388639	
2201059	SM 5310 B-2011	Organic Carbon	32		mg C/L	P388725	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P388487	
2201068	EPA 8321B	2,4-D	0.0020	U	ug/L	P388526	
		Acesulfame K**	0.10	U	ug/L	P388569	
		AMPA**	0.16	I	ug/L	P388569	
		Sucralose**	0.017	I	ug/L	P388569	
		Acetaminophen**	0.0080	U	ug/L	P388526	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Endothall**	0.25	U	ug/L	P388569	
		Glufosinate**	0.10	U	ug/L	P388569	
		Glyphosate**	0.10	U	ug/L	P388569	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	8.0E-04	U	ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	8.0E-04	U	ug/L	P388526	
		Clothianidin**	0.0020	U	ug/L	P388526	
		Dinotefuran**	0.0020	U	ug/L	P388526	
		Diuron	0.0020	U	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	8.0E-04	U	ug/L	P388526	
		Imazapyr**	0.0040	U	ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.025		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2201068	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388484

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388736

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388739

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388506

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388582

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389491

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388559

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388639

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388487

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P388526

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: EPA 8321B
Batch ID: P388569

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-2011
Batch ID: P388491

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P388771

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P388920

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388924

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388775

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388725

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: P388736

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388739

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388506

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388582

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389491

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388559

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: P388639

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388487

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

Reference Method: EPA 8321B
Batch ID: P388526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.5		P	30 - 160
Acetaminophen	78.5		P	30 - 160
Acetamiprid	66.7		P	30 - 160
Afidopyropen	42.2		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P388526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	43.0		P	30 - 160
Benzovindiflupyr	59.2		P	30 - 160
Carbamazepine	52.3		P	30 - 160
Clothianidin	71.0		P	30 - 160
Dinotefuran	77.1		P	30 - 160
Diuron	38.8		P	30 - 160
Fenuron	79.9		P	30 - 160
Fluridone	66.4		P	30 - 160
Hydrocodone	67.8		P	30 - 160
Ibuprofen	67.4		P	30 - 160
Imazapyr	74.3		P	30 - 160
Imidacloprid	83.3		P	30 - 160
Linuron	61.6		P	30 - 160
Mandestrobin	68.4		P	30 - 160
MCPP	75.5		P	30 - 160
Naproxen	42.5		P	30 - 160
Primidone	76.3		P	30 - 160
Pyraclostrobin	58.3		P	30 - 160
Thiamethoxam	72.8		P	30 - 160
Tolfenpyrad	44.7		P	30 - 160
Triclopyr	64.0		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P388569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	99.2		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	102		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	119		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P388491

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

Reference Method: SM 2320 B-2011
Batch ID: P388771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	90 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P388725

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200972	Chloride	105		P	90 - 110
2201023	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200972	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201024	Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201025	Kjeldahl Nitrogen	112	107	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201750	Kjeldahl Nitrogen	108	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201024	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201058	Total-P	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200980	O-Phosphate-P	94.9	95.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P388526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200724	2,4-D	57.0	61.8	P/P	30 - 160
2200724	Acetaminophen	99.9	99.2	P/P	30 - 160
2200724	Acetamidrid	67.4	71.8	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P388526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200724	Afidopyropen	34.2	35.2	P/P	30 - 160
2200724	Bentazon	32.2	40.2	P/P	30 - 160
2200724	Benzovindiflupyr	52.9	55.8	P/P	30 - 160
2200724	Carbamazepine	48.3	53.1	P/P	30 - 160
2200724	Clothianidin	74.4	74.2	P/P	30 - 160
2200724	Dinotefuran	80.8	82.1	P/P	30 - 160
2200724	Diuron	34.4	37.4	P/P	30 - 160
2200724	Fenuron	64.6	68.7	P/P	30 - 160
2200724	Fluridone	54.1	62.4	P/P	30 - 160
2200724	Hydrocodone	60.3	63.8	P/P	30 - 160
2200724	Ibuprofen	53.5	44.7	P/P	30 - 160
2200724	Imazapyr	78.2	82.8	P/P	30 - 160
2200724	Imidacloprid	97.8	105	P/P	30 - 160
2200724	Linuron	48.9	54.8	P/P	30 - 160
2200724	Mandestrobin	57.4	61.1	P/P	30 - 160
2200724	MCCP	55.7	60.0	P/P	30 - 160
2200724	Naproxen	57.3	70.7	P/P	30 - 160
2200724	Primidone	64.7	62.6	P/P	30 - 160
2200724	Pyraclostrobin	49.3	54.2	P/P	30 - 160
2200724	Thiamethoxam	82.7	86.0	P/P	30 - 160
2200724	Tolfenpyrad	38.6	37.6	P/P	30 - 160
2200724	Triclopyr	51.8	51.6	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P388569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200850	Acesulfame K	124	121	P/P	40 - 150
2200850	AMPA	129	129	P/P	40 - 150
2200850	Endothall	105	105	P/P	40 - 150
2200850	Glufosinate	97.8	96.2	P/P	40 - 150
2200850	Glyphosate	77.9	84.6	P/P	40 - 140
2200850	Sucralose	118	117	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P388775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201022	Fluoride	96.4	97.1	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388725

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201026	Organic Carbon	105		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201023	Turbidity	5.46	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200972	Chloride	1.06	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200972	Sulfate	1.23	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201024	Ammonia-N	0.397	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201025	Kjeldahl Nitrogen	2.38	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201750	Kjeldahl Nitrogen	3.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201024	NO2NO3-N	0.447	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201058	Total-P	1.10	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200980	O-Phosphate-P	0.316	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P388526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200724	2,4-D	7.29	Spike	P	0 - 30
2200724	Acetaminophen	0.616	Spike	P	0 - 30
2200724	Acetamiprid	6.25	Spike	P	0 - 30
2200724	Afidopyropen	2.81	Spike	P	0 - 30
2200724	Bentazon	10.4	Spike	P	0 - 30
2200724	Benzovindiflupyr	5.25	Spike	P	0 - 30
2200724	Carbamazepine	9.44	Spike	P	0 - 30
2200724	Clothianidin	0.220	Spike	P	0 - 30
2200724	Dinotefuran	1.54	Spike	P	0 - 30
2200724	Diuron	8.21	Spike	P	0 - 30
2200724	Fenuron	6.21	Spike	P	0 - 30
2200724	Fluridone	11.6	Spike	P	0 - 30
2200724	Hydrocodone	5.69	Spike	P	0 - 30
2200724	Ibuprofen	17.9	Spike	P	0 - 30
2200724	Imazapyr	4.58	Spike	P	0 - 30
2200724	Imidacloprid	7.21	Spike	P	0 - 30
2200724	Linuron	11.3	Spike	P	0 - 30
2200724	Mandestrobin	6.21	Spike	P	0 - 30
2200724	MCP	7.32	Spike	P	0 - 30
2200724	Naproxen	21.0	Spike	P	0 - 30
2200724	Primidone	3.35	Spike	P	0 - 30
2200724	Pyraclostrobin	9.50	Spike	P	0 - 30
2200724	Thiamethoxam	3.84	Spike	P	0 - 30
2200724	Tolfenpyrad	2.50	Spike	P	0 - 30
2200724	Triclopyr	0.475	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P388569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200850	Acesulfame K	2.10	Spike	P	0 - 30
2200850	AMPA	0.330	Spike	P	0 - 30
2200850	Endothall	0.544	Spike	P	0 - 30
2200850	Glufosinate	1.72	Spike	P	0 - 30
2200850	Glyphosate	8.18	Spike	P	0 - 30
2200850	Sucralose	0.907	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P388491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201021	Color (true)	2.16	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P388771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201022	Total Alkalinity	2.33	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P388920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201060	TDS	8.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P388775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201022	Fluoride	0.467	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388725

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201026	Organic Carbon	0.540	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2201068
Field Sample ID: G3SD0085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.3	P	30 - 160
EPA 8321B	Diuron-d6	36.6	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	115	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.6	P	30 - 160
EPA 8321B	Primidone-d5	41.7	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101455

Included Lab Sample IDs: 2201057, 2201060

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101457

Included Lab Sample IDs: 2201059, 2201062

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A101458

Included Lab Sample IDs: 2201057, 2201060

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101462

Included Lab Sample IDs: 2201058, 2201061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	99.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101481

Included Lab Sample IDs: 2201058, 2201061

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101493

Included Lab Sample IDs: 2201057, 2201060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	99.4	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101505

Included Lab Sample IDs: 2201068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	109	111	P/P	60 - 160
Endothall	96.5	103	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101512

Included Lab Sample IDs: 2201061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101537

Included Lab Sample IDs: 2201068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.7	80.7	P/P	60 - 160
Glufosinate	98.0	104	P/P	60 - 160
Glyphosate	103	104	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A101541

Included Lab Sample IDs: 2201058, 2201061

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101552

Included Lab Sample IDs: 2201058, 2201061

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	92.2	95.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101554

Included Lab Sample IDs: 2201057, 2201060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101554

Included Lab Sample IDs: 2201057, 2201060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.8	97.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101588

Included Lab Sample IDs: 2201068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.7	91.8	P/P	50 - 150
Acetaminophen	99.7	96.4	P/P	60 - 160
Acetamiprid	101	98.2	P/P	50 - 150
Afidopyrophen	93.0	88.6	P/P	50 - 150
Bentazon	93.0	107	P/P	50 - 160
Benzovindiflupyr	90.0	85.6	P/P	50 - 150
Carbamazepine	99.3	101	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A101588
 Included Lab Sample IDs: 2201068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Clothianidin	86.9	96.4	P/P	60 - 150
Dinotefuran	86.3	82.1	P/P	50 - 150
Diuron	102	102	P/P	60 - 160
Fenuron	115	117	P/P	60 - 150
Fluridone	108	112	P/P	60 - 160
Hydrocodone	98.2	99.8	P/P	60 - 150
Ibuprofen	97.6	78.9	P/P	50 - 160
Imazapyr	82.7	94.3	P/P	50 - 160
Imidacloprid	86.0	82.8	P/P	60 - 150
Linuron	103	88.7	P/P	60 - 150
Mandestrobin	98.1	99.7	P/P	50 - 150
MCPP	79.1	83.7	P/P	50 - 150
Naproxen	90.5	112	P/P	50 - 160
Primidone	87.1	83.1	P/P	60 - 150
Pyraclostrobin	94.2	93.4	P/P	60 - 150
Thiamethoxam	96.2	94.7	P/P	50 - 150
Tolfenpyrad	95.6	106	P/P	60 - 150
Triclopyr	78.1	85.9	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A101686
 Included Lab Sample IDs: 2201068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	127	123	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A101882
 Included Lab Sample IDs: 2201058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	104	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					5.46	
EPA 300.0 Rev. 2.1	Chloride	103	105	104		1.06	
	Sulfate	101	98.7			1.23	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	99.4	100			0.397
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	112	107			2.38
	Kjeldahl Nitrogen	105	108	102			3.85
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	98.0				0.447
EPA 365.1 Rev. 2.0	Total-P	104	106	108			1.10
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	94.9	95.2			0.316
EPA 8321B	2,4-D	78.5	57.0	61.8			7.29
	Acesulfame K	113	124	121			2.10
	Acetaminophen	78.5	99.9	99.2			0.616
	Acetamiprid	66.7	67.4	71.8			6.25
	Afidopyropen	42.2	34.2	35.2			2.81
	AMPA	99.2	129	129			0.330
	Bentazon	43.0	32.2	40.2			10.4
	Benzovindiflupyr	59.2	52.9	55.8			5.25
	Carbamazepine	52.3	48.3	53.1			9.44
	Clothianidin	71.0	74.4	74.2			0.220
	Dinotefuran	77.1	80.8	82.1			1.54
	Diuron	38.8	34.4	37.4			8.21
	Endothall	104	105	105			0.544
	Fenuron	79.9	64.6	68.7			6.21
	Fluridone	66.4	54.1	62.4			11.6
	Glufosinate	102	97.8	96.2			1.72
	Glyphosate	108	77.9	84.6			8.18
	Hydrocodone	67.8	60.3	63.8			5.69
	Ibuprofen	67.4	53.5	44.7			17.9
	Imazapyr	74.3	78.2	82.8			4.58
	Imidacloprid	83.3	97.8	105			7.21
	Linuron	61.6	48.9	54.8			11.3
	Mandestrobin	68.4	57.4	61.1			6.21
	MCPP	75.5	55.7	60.0			7.32
	Naproxen	42.5	57.3	70.7			21.0
	Primidone	76.3	64.7	62.6			3.35
	Pyraclostrobin	58.3	49.3	54.2			9.50
	Sucralose	119	118	117			0.907
	Thiamethoxam	72.8	82.7	86.0			3.84
	Tolfenpyrad	44.7	38.6	37.6			2.50
	Triclopyr	64.0	51.8	51.6			0.475
SM 2120 B-2011	Color (true)	101				2.16	
SM 2320 B-2011	Total Alkalinity	102				2.33	
SM 2540 C-2011	TDS					8.22	
SM 4500 F-C-2011	Fluoride	94.8	96.4	97.1			0.467
SM 5310 B-2011	Organic Carbon	99.6	105				0.540

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2201057, 2201060
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2201057, 2201060
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2201057, 2201060
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2201058, 2201061

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2201058, 2201061
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2201058, 2201061
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2201058, 2201061
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2201059, 2201062
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2201068
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2201068
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2201057, 2201060
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2201057, 2201060
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2201057, 2201060
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2201057, 2201060
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2201057, 2201060
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2201058, 2201061

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	10/09/2020			10/09/2020 15:27	Yen Ta	2201057, 2201060
EPA 300.0 Rev. 2.1	10/09/2020			10/15/2020 05:25	Lipi Saha	2201057
	10/09/2020			10/15/2020 05:39	Lipi Saha	2201060
EPA 350.1 Rev. 2.0	10/09/2020			10/11/2020 12:53	Ping Hua	2201058
	10/09/2020			10/11/2020 13:18	Ping Hua	2201061
EPA 351.2 Rev. 2.0	10/09/2020	10/13/2020 13:25	David Boose	10/14/2020 13:07	Elliott Rodriguez	2201061
	10/09/2020	10/29/2020 13:45	David Boose	10/30/2020 12:29	Elliott Rodriguez	2201058
EPA 353.2 Rev. 2.0	10/09/2020			10/13/2020 09:49	Beverly Y. Sanders	2201058
	10/09/2020			10/13/2020 09:50	Beverly Y. Sanders	2201061
EPA 365.1 Rev. 2.0	10/09/2020	10/14/2020 12:45	Yen Ta	10/15/2020 15:45	Lipi Saha	2201058
	10/09/2020	10/14/2020 12:45	Yen Ta	10/15/2020 15:48	Lipi Saha	2201061
EPA 365.1 Rev. 2.0 dissolved	10/09/2020			10/09/2020 16:36	Blanca Fach	2201059
	10/09/2020			10/09/2020 16:37	Blanca Fach	2201062
EPA 8321B	10/09/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 09:37	Juyoung Kim	2201068
	10/09/2020	10/13/2020 13:45	Rebecca Ware	10/13/2020 19:12	Rebecca Ware	2201068
	10/09/2020	10/13/2020 13:45	Rebecca Ware	10/14/2020 11:26	Rebecca Ware	2201068
	10/09/2020	10/13/2020 13:45	Rebecca Ware	10/21/2020 16:17	Rebecca Ware	2201068
SM 2120 B-2011	10/09/2020			10/09/2020 17:34	Benjamin T. Nordmann	2201057
	10/09/2020			10/09/2020 17:35	Benjamin T. Nordmann	2201060
SM 2320 B-2011	10/09/2020			10/15/2020 23:47	Lauren Lees	2201057
	10/09/2020			10/16/2020 00:01	Lauren Lees	2201060
SM 2540 C-2011	10/09/2020			10/13/2020 15:11	Yijie Li	2201057, 2201060
SM 2540 D-2011	10/09/2020			10/13/2020 15:11	Yijie Li	2201057, 2201060
SM 4500 F-C-2011	10/09/2020			10/15/2020 23:47	Lauren Lees	2201057
	10/09/2020			10/16/2020 00:01	Lauren Lees	2201060
SM 5310 B-2011	10/09/2020			10/15/2020 02:29	Madeline Gruver	2201058
	10/09/2020			10/15/2020 02:41	Madeline Gruver	2201061