

Chemical Analysis Report

SO-DIST-2022-03-29-01

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

Event Description: **2021 SMP: Continuous Spring Creek**

Request ID: **RQ-2022-03-14-51**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:

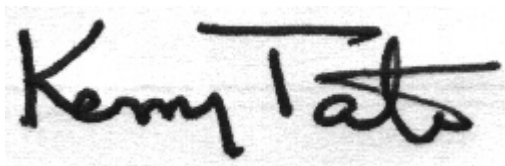
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

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

Date Certified: 12-APR-2022 10:39

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Spring Creek @ US41

Collection Date/Time: 03/28/2022 08:55

Field ID: G1SD0109

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314928	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P411716	
	SM 2320 B-2011	Total Alkalinity	218		mg CaCO3/L	P412056	
	SM 2540 D-2011	TSS	3	U	mg/L	P411894	
	SM 4500-F- C-2011	Fluoride	0.45	I	mg F/L	P412058	
2314929	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P411759	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P411694	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P411829	
	EPA 365.1 Rev. 2.0	Total-P	0.63		mg P/L	P411947	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P411793	
2314951	EPA 8321B	2,4-D	0.0069	I	ug/L	P411659	
		Acesulfame K	0.14	I	ug/L	P411656	
		2,4,5-T	0.0040	U	ug/L	P411659	
		AMPA	1.0	U	ug/L	P411656	
		Acetaminophen	0.023	I	ug/L	P411659	
		Acetamiprid	0.0020	U	ug/L	P411659	
		Endothall	0.25	U	ug/L	P411656	
		Glufosinate	1.0	U	ug/L	P411656	
		Glyphosate	1.0	U	ug/L	P411656	
		Afidopyropen	0.0020	U	ug/L	P411659	
		Bentazon	0.34		ug/L	P411659	
		Sucralose	13		ug/L	P411656	
		Benzovindiflupyr	0.0020	U	ug/L	P411659	
		Carbamazepine	0.027		ug/L	P411659	
		Clothianidin	0.0020	U	ug/L	P411659	
		Dinotefuran	0.028		ug/L	P411659	
		Diuron	0.0055	I	ug/L	P411659	
		Fenuron	0.016	U	ug/L	P411659	
		Fluridone	0.024		ug/L	P411659	
		Imazapyr	0.30		ug/L	P411659	
		Hydrocodone	0.0020	U	ug/L	P411659	
		Ibuprofen	0.020	U	ug/L	P411659	
		Imidacloprid	0.033		ug/L	P411659	MS
		Linuron	0.0040	U	ug/L	P411659	
		Mandestrobin	0.0020	U	ug/L	P411659	
		MCP	0.0020	U	ug/L	P411659	
		Naproxen	0.0080	U	ug/L	P411659	
		Primidone	0.086		ug/L	P411659	
		Pyraclostrobin	0.0020	U	ug/L	P411659	
		Silvex	0.0040	U	ug/L	P411659	
		Thiamethoxam	0.0020	U	ug/L	P411659	MS
		Tolfenpyrad	0.0020	U	ug/L	P411659	
		Triclopyr	0.0040	U	ug/L	P411659	

Field ID: G1SD0109

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 some analytes could not be assessed due to a high concentration of parameters in the spiked sample.
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411716

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411759

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411694

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411829

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411947

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

Reference Method: EPA 8321B
Batch ID: P411656

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: EPA 8321B
Batch ID: P411659

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P411659

Component	Result	Code	Units
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
Silvex	0.0040	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: P412056

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

Reference Method: SM 2540 D-2011

Batch ID: P411894

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P412058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P411793

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411759

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411694

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: P411829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411947

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

Reference Method: EPA 8321B
Batch ID: P411656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	109		P	40 - 150
AMPA	111		P	40 - 150
Endothall	80.1		P	40 - 150
Glufosinate	137		P	40 - 150
Glyphosate	129		P	40 - 150
Sucralose	111		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411659

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	128		P	30 - 160
2,4,5-T	85.1		P	30 - 160
Acetaminophen	86.3		P	30 - 150
Acetamiprid	106		P	30 - 160
Afidopyropen	84.1		P	30 - 160
Bentazon	39.6		P	30 - 150
Benzovindiflupyr	105		P	30 - 160
Carbamazepine	106		P	30 - 160
Clothianidin	105		P	30 - 160
Dinotefuran	101		P	30 - 160
Diuron	92.8		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P411659

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	101		P	30 - 160
Fluridone	97.6		P	30 - 160
Hydrocodone	94.5		P	30 - 160
Ibuprofen	82.7		P	30 - 160
Imazapyr	127		P	30 - 160
Imidacloprid	94.9		P	30 - 160
Linuron	85.0		P	30 - 160
Mandestrobin	98.6		P	30 - 160
MCPP	103		P	30 - 160
Naproxen	74.3		P	30 - 160
Primidone	107		P	30 - 160
Pyraclostrobin	88.1		P	30 - 160
Silvex	72.6		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.4		P	30 - 160
Triclopyr	96.1		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P412056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P412058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P411793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314310	Ammonia-N	98.4	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314637	Kjeldahl Nitrogen	98.0	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315012	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315014	Total-P	93.7	93.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P411656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314412	Acesulfame K	139	132	P/P	40 - 150
2314412	AMPA	108	103	P/P	40 - 150
2314412	Endothall	129	114	P/P	40 - 150
2314412	Glufosinate	114	101	P/P	40 - 150
2314412	Glyphosate	105	102	P/P	40 - 150
2314412	Sucralose	116	98.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314706	2,4-D	100	117	P/P	30 - 160
2314706	2,4,5-T	72.1	73.5	P/P	30 - 160
2314706	Acetaminophen	101	97.3	P/P	30 - 150
2314706	Acetamiprid	117	122	P/P	30 - 160
2314706	Afidopyropen	75.0	77.5	P/P	30 - 160
2314706	Benzovindiflupyr	92.7	94.5	P/P	30 - 160
2314706	Carbamazepine	86.1	99.4	P/P	30 - 160
2314706	Clothianidin	123	131	P/P	30 - 160
2314706	Dinotefuran	129	135	P/P	30 - 160
2314706	Diuron	78.3	86.4	P/P	30 - 160
2314706	Fenuron	82.8	88.8	P/P	30 - 160
2314706	Fluridone	81.5	99.0	P/P	30 - 160
2314706	Hydrocodone	97.2	98.1	P/P	30 - 160
2314706	Ibuprofen	53.1	70.0	P/P	30 - 160
2314706	Imidacloprid	171	189	F/F	30 - 160
2314706	Linuron	77.5	70.7	P/P	30 - 160
2314706	Mandestrobin	94.2	101	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P411659

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2314706	MCP	91.2	94.9	P/P	30 - 160
2314706	Naproxen	73.2	62.7	P/P	30 - 160
2314706	Primidone	106	112	P/P	30 - 160
2314706	Pyraclostrobin	79.9	83.3	P/P	30 - 160
2314706	Silvex	75.5	82.4	P/P	30 - 160
2314706	Thiamethoxam	152	164	P/F	30 - 160
2314706	Tolfenpyrad	54.5	51.6	P/P	30 - 160
2314706	Triclopyr	84.7	75.8	P/P	30 - 160

Reference Method: SM 4500-F- C-2011
Batch ID: P412058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315608	Fluoride	93.4	95.6	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P411793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315032	Organic Carbon	87.4	89.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315000	Turbidity	7.66	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314310	Ammonia-N	0.188	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314637	Kjeldahl Nitrogen	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315012	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315014	Total-P	0.240	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P411656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314412	Acesulfame K	4.90	Spike	P	0 - 30
2314412	AMPA	4.01	Spike	P	0 - 30
2314412	Endothall	12.1	Spike	P	0 - 30
2314412	Glufosinate	11.5	Spike	P	0 - 30
2314412	Glyphosate	3.49	Spike	P	0 - 30
2314412	Sucralose	15.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P411659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314706	2,4-D	12.5	Spike	P	0 - 30
2314706	2,4,5-T	1.84	Spike	P	0 - 30
2314706	Acetaminophen	4.00	Spike	P	0 - 30
2314706	Acetamidrid	4.02	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P411659

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2314706	Afidopyropen	3.28	Spike	P	0 - 30
2314706	Bentazon	3.25	Spike	P	0 - 30
2314706	Benzovindiflupyr	1.90	Spike	P	0 - 30
2314706	Carbamazepine	8.53	Spike	P	0 - 30
2314706	Clothianidin	6.29	Spike	P	0 - 30
2314706	Dinotefuran	4.51	Spike	P	0 - 30
2314706	Diuron	9.44	Spike	P	0 - 30
2314706	Fenuron	6.94	Spike	P	0 - 30
2314706	Fluridone	13.5	Spike	P	0 - 30
2314706	Hydrocodone	0.908	Spike	P	0 - 30
2314706	Ibuprofen	27.6	Spike	P	0 - 30
2314706	Imazapyr	14.4	Spike	P	0 - 30
2314706	Imidacloprid	8.86	Spike	P	0 - 30
2314706	Linuron	9.19	Spike	P	0 - 30
2314706	Mandestrobin	6.58	Spike	P	0 - 30
2314706	MCPP	3.61	Spike	P	0 - 30
2314706	Naproxen	15.4	Spike	P	0 - 30
2314706	Primidone	4.85	Spike	P	0 - 30
2314706	Pyraclostrobin	4.13	Spike	P	0 - 30
2314706	Silvex	8.80	Spike	P	0 - 30
2314706	Thiamethoxam	7.61	Spike	P	0 - 30
2314706	Tolfenpyrad	5.44	Spike	P	0 - 30
2314706	Triclopyr	11.2	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P412056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315608	Total Alkalinity	1.38	Sample	P	0 - 5.2

Reference Method: SM 4500-F- C-2011
Batch ID: P412058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315608	Fluoride	1.50	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P411793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315032	Organic Carbon	1.62	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2314951

Field Sample ID: G1SD0109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	85.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.1	P	30 - 160
EPA 8321B	Diuron-d6	70.8	P	30 - 160
EPA 8321B	Endothall-d6	86.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	59.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.0	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	91.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111213

Included Lab Sample IDs: 2314928

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

Reference Method: EPA 8321B

Run ID: A111227

Included Lab Sample IDs: 2314951

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	95.1	103	P/P	60 - 160
Endothall	102	72.8	P/P	60 - 160
Sucralose	108	111	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111231

Included Lab Sample IDs: 2314951

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	124	126	P/P	60 - 160
Glufosinate	112	98.0	P/P	60 - 160
Glyphosate	115	114	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111234

Included Lab Sample IDs: 2314929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A111243

Included Lab Sample IDs: 2314929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.5	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111259

Included Lab Sample IDs: 2314929

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111336

Included Lab Sample IDs: 2314929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A111346
Included Lab Sample IDs: 2314951

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	109	P/P	50 - 150
2,4,5-T	86.1	87.3	P/P	50 - 150
Acetaminophen	91.0	91.2	P/P	60 - 160
Acetamiprid	113	112	P/P	50 - 150
Afidopyropen	101	99.0	P/P	50 - 150
Bentazon	90.3	98.2	P/P	50 - 160
Benzovindiflupyr	107	91.9	P/P	50 - 150
Carbamazepine	104	101	P/P	60 - 150
Clothianidin	119	110	P/P	60 - 150
Dinotefuran	105	103	P/P	50 - 150
Diuron	110	98.7	P/P	60 - 160
Fenuron	99.5	99.7	P/P	60 - 150
Fluridone	99.1	100	P/P	60 - 160
Hydrocodone	99.0	101	P/P	60 - 150
Ibuprofen	133	95.4	P/P	50 - 160
Imazapyr	139	124	P/P	50 - 150
Imidacloprid	93.8	96.5	P/P	60 - 150
Linuron	81.3	92.1	P/P	60 - 150
Mandestrobin	109	112	P/P	50 - 150
MCPP	93.7	92.1	P/P	50 - 150
Naproxen	124	95.0	P/P	50 - 160
Primidone	90.5	104	P/P	60 - 150
Pyraclostrobin	105	94.8	P/P	60 - 150
Silvex	86.1	91.8	P/P	50 - 150
Thiamethoxam	105	105	P/P	50 - 150
Tolfenpyrad	99.7	90.3	P/P	60 - 150
Triclopyr	103	96.5	P/P	50 - 150

Reference Method: SM 2320 B-2011
Run ID: A111357
Included Lab Sample IDs: 2314928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.8	95.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A111357
Included Lab Sample IDs: 2314928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.0	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	96.2				7.66	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.4	98.2			0.188
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.0	95.1			2.61
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	100	102			1.43
EPA 365.1 Rev. 2.0	Total-P	102	93.7	93.4			0.240
EPA 8321B	2,4-D	128	100	117			12.5
	2,4,5-T	85.1	72.1	73.5			1.84
	Acesulfame K	109	139	132			4.90
	Acetaminophen	86.3	101	97.3			4.00
	Acetamiprid	106	117	122			4.02
	Afidopyropen	84.1	75.0	77.5			3.28
	AMPA	111	108	103			4.01
	Bentazon	39.6					3.25
	Benzovindiflupyr	105	92.7	94.5			1.90
	Carbamazepine	106	86.1	99.4			8.53
	Clothianidin	105	123	131			6.29
	Dinotefuran	101	129	135			4.51
	Diuron	92.8	78.3	86.4			9.44
	Endothall	80.1	129	114			12.1
	Fenuron	101	82.8	88.8			6.94
	Fluridone	97.6	81.5	99.0			13.5
	Glufosinate	137	114	101			11.5
	Glyphosate	129	105	102			3.49
	Hydrocodone	94.5	97.2	98.1			0.908
	Ibuprofen	82.7	53.1	70.0			27.6
	Imazapyr	127					14.4
	Imidacloprid	94.9	171	189			8.86
	Linuron	85.0	77.5	70.7			9.19
	Mandestrobin	98.6	94.2	101			6.58
	MCPP	103	91.2	94.9			3.61
	Naproxen	74.3	73.2	62.7			15.4
	Primidone	107	106	112			4.85
	Pyraclostrobin	88.1	79.9	83.3			4.13
	Silvex	72.6	75.5	82.4			8.80
	Sucralose	111	116	98.4			15.4
	Thiamethoxam	101	152	164			7.61
	Tolfenpyrad	56.4	54.5	51.6			5.44
	Triclopyr	96.1	84.7	75.8			11.2
SM 2320 B-2011	Total Alkalinity	98.1				1.38	
SM 4500-F- C-2011	Fluoride	96.9	93.4	95.6			1.50
SM 5310 B-2011	Organic Carbon	94.3	87.4	89.2			1.62

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2314928
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2314929
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2314929
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2314929
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2314929
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2314951
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2314928
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2314928

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2314928
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2314929

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	03/29/2022			03/29/2022 14:24	Anna M. Plaviak	2314928
EPA 350.1 Rev. 2.0	03/29/2022			03/30/2022 11:10	Ping Hua	2314929
EPA 351.2 Rev. 2.0	03/29/2022	03/31/2022 11:24	Samantha L Bates	04/07/2022 12:22	Samantha L Bates	2314929
EPA 353.2 Rev. 2.0	03/29/2022			03/31/2022 16:53	Nathaniel J Jones	2314929
EPA 365.1 Rev. 2.0	03/29/2022	04/05/2022 17:35	Simonne.V. Calhoun	04/06/2022 12:00	Sarah A Nixon	2314929
EPA 8321B	03/29/2022	03/29/2022 14:00	Hoor Shaik	04/01/2022 07:52	Juyoung Kim	2314951
	03/29/2022	03/29/2022 14:00	Hoor Shaik	04/01/2022 16:32	Juyoung Kim	2314951
	03/29/2022	03/29/2022 14:00	Manjita Shrestha	03/29/2022 21:59	Manjita Shrestha	2314951
	03/29/2022	03/29/2022 14:00	Manjita Shrestha	03/30/2022 06:48	Manjita Shrestha	2314951
	03/29/2022	03/29/2022 14:00	Manjita Shrestha	03/30/2022 11:22	Manjita Shrestha	2314951
SM 2320 B-2011	03/29/2022			04/06/2022 19:39	Dale L. Simmons	2314928
SM 2540 D-2011	03/29/2022			03/31/2022 15:30	Blanca Fach	2314928
SM 4500-F- C-2011	03/29/2022			04/06/2022 16:54	Dale L. Simmons	2314928
SM 5310 B-2011	03/29/2022			03/31/2022 05:43	Khloe J Berg	2314929