

Chemical Analysis Report

SO-DIST-2022-03-16-01

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

Event Description: **2022 SMP: Continuous Imperial**

Request ID: **RQ-2022-03-07-37**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 08-APR-2022 10:51



NON-CONFORMANCE REPORT INCLUDED

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: Imperial River @ Orr Rd

Collection Date/Time: 03/14/2022 09:00

Field ID: G1SD0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2312492	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P411425	
		Sulfate	13		mg SO4/L	P411428	
	SM 2320 B-2011	Total Alkalinity	269		mg CaCO3/L	P411339	
	SM 2540 C-2011	TDS	377		mg/L	P411581	
	SM 2540 D-2011	TSS	3	I	mg/L	P411535	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P411344	
2312493	EPA 350.1 Rev. 2.0	Ammonia-N	0.51		mg N/L	P411268	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P411219	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P411227	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P411408	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P411294	
2312500	EPA 8321B	Acesulfame K	0.10	U	ug/L	P411107	
		2,4-D	0.0020	U	ug/L	P411262	
		AMPA	0.10	U	ug/L	P411107	
		2,4,5-T	0.0040	U	ug/L	P411262	
		Acetaminophen	0.0080	U	ug/L	P411262	
		Endothall	0.25	U	ug/L	P411107	
		Acetamiprid	0.0020	U	ug/L	P411262	
		Glufosinate	0.10	U	ug/L	P411107	
		Glyphosate	0.10	U	ug/L	P411107	
		Afidopyropen	0.0020	U	ug/L	P411262	
		Sucralose	0.060		ug/L	P411107	
		Bentazon	0.21		ug/L	P411262	
		Benzovindiflupyr	0.0020	U	ug/L	P411262	
		Carbamazepine	8.0E-04	U	ug/L	P411262	
		Clothianidin	0.0020	U	ug/L	P411262	
		Dinotefuran	0.0020	U	ug/L	P411262	
		Diuron	0.0020	U	ug/L	P411262	
		Fenuron	0.016	U	ug/L	P411262	
		Fluridone	0.0067		ug/L	P411262	
		Imazapyr	0.83		ug/L	P411262	
		Hydrocodone	0.0020	U	ug/L	P411262	
		Ibuprofen	0.020	U	ug/L	P411262	
		Imidacloprid	0.0020	U	ug/L	P411262	MS
		Linuron	0.0040	U	ug/L	P411262	
		Mandestrobin	0.0020	U	ug/L	P411262	
		MCPP	0.0020	U	ug/L	P411262	
		Naproxen	0.0080	U	ug/L	P411262	
		Primidone	0.0040	U	ug/L	P411262	
		Pyraclostrobin	0.0020	U	ug/L	P411262	
		Silvex	0.0040	U	ug/L	P411262	
		Thiamethoxam	0.0020	U	ug/L	P411262	MS
		Tolfenpyrad	0.0020	U	ug/L	P411262	
		Triclopyr	0.0040	U	ug/L	P411262	

Field ID: G1SD0105

Matrix: W-SURF-FRH

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 sucralose could not be assessed due to a high concentration of parameter in the spiked sample.

Non-Conformance Report

NCR ID: 9299

Event(s)

SO-DIST-2022-03-16-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Data will be qualified as appropriate.
Biology and Nutrients supervisors notified by phone.
Short-hold samples not logged in based on SMP protocol.

Authorized by/Date: Kyle Klug 3/18/2022

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411425

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411428

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411268

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411219

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411227

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411408

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

Reference Method: EPA 8321B
Batch ID: P411107

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: P411262

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P411262

Component	Result	Code	Units
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
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: P411339

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

Reference Method: SM 2540 C-2011

Batch ID: P411581

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P411535

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P411344

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P411294

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: P411425

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411428

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411219

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: P411227

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: P411408

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

Reference Method: EPA 8321B
Batch ID: P411107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	97.9		P	40 - 150
AMPA	92.8		P	40 - 150
Endothall	88.9		P	40 - 150
Glufosinate	108		P	40 - 150
Glyphosate	90.9		P	40 - 150
Sucralose	83.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	56.3		P	30 - 160
2,4,5-T	44.5		P	30 - 160
Acetaminophen	82.9		P	30 - 150
Acetamiprid	73.6		P	30 - 160
Afidopyropen	51.3		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P411262

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	85.2		P	30 - 150
Benzovindiflupyr	72.0		P	30 - 160
Carbamazepine	67.7		P	30 - 160
Clothianidin	96.1		P	30 - 160
Dinotefuran	93.7		P	30 - 160
Diuron	54.3		P	30 - 160
Fenuron	106		P	30 - 160
Fluridone	69.7		P	30 - 160
Hydrocodone	92.4		P	30 - 160
Ibuprofen	56.8		P	30 - 160
Imazapyr	88.3		P	30 - 160
Imidacloprid	80.1		P	30 - 160
Linuron	70.3		P	30 - 160
Mandestrobin	53.1		P	30 - 160
MCPP	59.3		P	30 - 160
Naproxen	67.5		P	30 - 160
Primidone	76.6		P	30 - 160
Pyraclostrobin	64.8		P	30 - 160
Silvex	37.0		P	30 - 160
Thiamethoxam	93.0		P	30 - 160
Tolfenpyrad	37.9		P	30 - 160
Triclopyr	43.7		P	30 - 160

Reference Method: SM 2320 B-2011

Batch ID: P411339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P411344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P411294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312520	Chloride	104		P	90 - 110
2312561	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312520	Sulfate	103		P	90 - 110
2312561	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312434	Ammonia-N	96.0	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2311929	Kjeldahl Nitrogen	98.8	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411227

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312480	NO2NO3-N	94.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312507	Total-P	105	105	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P411107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312010	Acesulfame K	96.6	99.3	P/P	40 - 150
2312010	AMPA	79.6	79.5	P/P	40 - 150
2312010	Endothall	101	102	P/P	40 - 150
2312010	Glufosinate	105	104	P/P	40 - 150
2312010	Glyphosate	126	127	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312452	2,4-D	69.0	59.8	P/P	30 - 160
2312452	2,4,5-T	58.5	65.2	P/P	30 - 160
2312452	Acetaminophen	103	105	P/P	30 - 150
2312452	Acetamiprid	98.6	87.1	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P411262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312452	Afidopyropen	57.9	55.4	P/P	30 - 160
2312452	Bentazon	92.4	103	P/P	30 - 150
2312452	Benzovindiflupyr	76.1	78.1	P/P	30 - 160
2312452	Carbamazepine	80.4	77.8	P/P	30 - 160
2312452	Clothianidin	128	126	P/P	30 - 160
2312452	Dinotefuran	124	119	P/P	30 - 160
2312452	Diuron	52.2	45.3	P/P	30 - 160
2312452	Fenuron	132	152	P/P	30 - 160
2312452	Fluridone	65.8	68.2	P/P	30 - 160
2312452	Hydrocodone	103	112	P/P	30 - 160
2312452	Ibuprofen	51.3	56.8	P/P	30 - 160
2312452	Imazapyr	130	111	P/P	30 - 160
2312452	Imidacloprid	212	203	F/F	30 - 160
2312452	Linuron	84.9	79.7	P/P	30 - 160
2312452	Mandestrobin	64.3	60.9	P/P	30 - 160
2312452	MCCP	86.8	79.1	P/P	30 - 160
2312452	Naproxen	74.6	74.8	P/P	30 - 160
2312452	Primidone	124	92.4	P/P	30 - 160
2312452	Pyraclostrobin	80.0	80.3	P/P	30 - 160
2312452	Silvex	59.9	58.3	P/P	30 - 160
2312452	Thiamethoxam	174	175	F/F	30 - 160
2312452	Tolfenpyrad	55.2	46.1	P/P	30 - 160
2312452	Triclopyr	60.0	53.8	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P411344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313019	Fluoride	99.5	99.0	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P411294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2312295	Organic Carbon	105	90.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312520	Chloride	0.0684	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312520	Sulfate	0.0741	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312434	Ammonia-N	0.994	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P411219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2311929	Kjeldahl Nitrogen	3.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312480	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312507	Total-P	0.222	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P411107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312010	Acesulfame K	2.62	Spike	P	0 - 30
2312010	AMPA	0.0995	Spike	P	0 - 30
2312010	Endothall	1.05	Spike	P	0 - 30
2312010	Glufosinate	0.946	Spike	P	0 - 30
2312010	Glyphosate	0.871	Spike	P	0 - 30
2312010	Sucralose	1.81	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P411262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312452	2,4-D	10.1	Spike	P	0 - 30
2312452	2,4,5-T	10.9	Spike	P	0 - 30
2312452	Acetaminophen	1.44	Spike	P	0 - 30
2312452	Acetamiprid	12.4	Spike	P	0 - 30
2312452	Afidopyropen	4.29	Spike	P	0 - 30
2312452	Bentazon	6.68	Spike	P	0 - 30
2312452	Benzovindiflupyr	2.67	Spike	P	0 - 30
2312452	Carbamazepine	3.30	Spike	P	0 - 30
2312452	Clothianidin	1.75	Spike	P	0 - 30
2312452	Dinotefuran	3.15	Spike	P	0 - 30
2312452	Diuron	9.63	Spike	P	0 - 30
2312452	Fenuron	11.5	Spike	P	0 - 30
2312452	Fluridone	3.71	Spike	P	0 - 30
2312452	Hydrocodone	8.85	Spike	P	0 - 30
2312452	Ibuprofen	10.2	Spike	P	0 - 30
2312452	Imazapyr	10.7	Spike	P	0 - 30
2312452	Imidacloprid	4.20	Spike	P	0 - 30
2312452	Linuron	6.27	Spike	P	0 - 30
2312452	Mandestrobin	5.53	Spike	P	0 - 30
2312452	MCPP	9.29	Spike	P	0 - 30
2312452	Naproxen	0.262	Spike	P	0 - 30
2312452	Primidone	28.8	Spike	P	0 - 30
2312452	Pyraclostrobin	0.361	Spike	P	0 - 30
2312452	Silvex	2.71	Spike	P	0 - 30
2312452	Thiamethoxam	0.767	Spike	P	0 - 30
2312452	Tolfenpyrad	17.8	Spike	P	0 - 30
2312452	Triclopyr	10.9	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P411339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313019	Total Alkalinity	0.853	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P411581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312339	TDS	0.805	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P411344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313019	Fluoride	0.495	Spike	P	0 - 2.1

Quality Assurance Report

Precision

Reference Method: SM 5310 B-2011
Batch ID: P411294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2312295	Organic Carbon	7.85	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2312500

Field Sample ID: G1SD0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	72.3	P	30 - 160
EPA 8321B	Diuron-d6	56.8	P	30 - 160
EPA 8321B	Endothall-d6	96.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	54.7	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	93.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A110984
Included Lab Sample IDs: 2312500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	91.7	87.7	P/P	60 - 160
Endothall	89.7	94.9	P/P	60 - 160
Glufosinate	96.1	86.6	P/P	60 - 160
Glyphosate	96.8	90.5	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A110990
Included Lab Sample IDs: 2312500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	99.6	P/P	60 - 160
Sucralose	88.7	87.4	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A110993
Included Lab Sample IDs: 2312493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A110994
Included Lab Sample IDs: 2312492

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A111020
Included Lab Sample IDs: 2312493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A111024
Included Lab Sample IDs: 2312493

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

Reference Method: SM 2320 B-2011
Run ID: A111051
Included Lab Sample IDs: 2312492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	96.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A111051

Included Lab Sample IDs: 2312492

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111063

Included Lab Sample IDs: 2312493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111137

Included Lab Sample IDs: 2312493

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A111189

Included Lab Sample IDs: 2312500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	62.3	101	P/P	50 - 150
2,4,5-T	70.7	88.4	P/P	50 - 150
Acetaminophen	98.1	118	P/P	60 - 160
Acetamiprid	103	102	P/P	50 - 150
Afidopyropen	65.6	83.1	P/P	50 - 150
Benzovindiflupyr	120	87.5	P/P	50 - 160
Carbamazepine	86.1	75.8	P/P	60 - 150
Clothianidin	101	93.0	P/P	60 - 150
Dinotefuran	102	109	P/P	50 - 150
Diuron	64.6	74.6	P/P	60 - 160
Fenuron	94.3	102	P/P	60 - 150
Fluridone	113	80.8	P/P	60 - 160
Hydrocodone	109	110	P/P	60 - 150
Ibuprofen	125	76.7	P/P	50 - 160
Imazapyr	104	115	P/P	50 - 150
Imidacloprid	87.5	96.8	P/P	60 - 150
Linuron	111	80.2	P/P	60 - 150
Mandestrobin	97.8	65.0	P/P	50 - 150
MCPP	79.4	81.9	P/P	50 - 150
Naproxen	62.5	144	P/P	50 - 160
Primidone	98.2	101	P/P	60 - 150
Pyraclostrobin	130	83.7	P/P	60 - 150
Silvex	83.6	94.1	P/P	50 - 150
Thiamethoxam	94.0	102	P/P	50 - 150
Tolfenpyrad	128	83.4	P/P	60 - 150
Triclopyr	96.8	87.7	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A111346
Included Lab Sample IDs: 2312500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	95.2	103	P/P	50 - 160

* 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 300.0 Rev. 2.1	Chloride	104	104	104		0.0684	
	Sulfate	103	103	103		0.0741	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	96.0	97.4			0.994
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	98.8	103			3.38
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	94.8				0.0
EPA 365.1 Rev. 2.0	Total-P	101	105	105			0.222
EPA 8321B	2,4-D	56.3	69.0	59.8			10.1
	2,4,5-T	44.5	58.5	65.2			10.9
	Acesulfame K	97.9	96.6	99.3			2.62
	Acetaminophen	82.9	103	105			1.44
	Acetamiprid	73.6	98.6	87.1			12.4
	Afidopyropen	51.3	57.9	55.4			4.29
	AMPA	92.8	79.6	79.5			0.0995
	Bentazon	85.2	92.4	103			6.68
	Benzovindiflupyr	72.0	76.1	78.1			2.67
	Carbamazepine	67.7	80.4	77.8			3.30
	Clothianidin	96.1	128	126			1.75
	Dinotefuran	93.7	124	119			3.15
	Diuron	54.3	52.2	45.3			9.63
	Endothall	88.9	101	102			1.05
	Fenuron	106	132	152			11.5
	Fluridone	69.7	65.8	68.2			3.71
	Glufosinate	108	105	104			0.946
	Glyphosate	90.9	126	127			0.871
	Hydrocodone	92.4	103	112			8.85
	Ibuprofen	56.8	51.3	56.8			10.2
	Imazapyr	88.3	130	111			10.7
	Imidacloprid	80.1	212	203			4.20
	Linuron	70.3	84.9	79.7			6.27
	Mandestrobin	53.1	64.3	60.9			5.53
	MCPP	59.3	86.8	79.1			9.29
	Naproxen	67.5	74.6	74.8			0.262
	Primidone	76.6	124	92.4			28.8
	Pyraclostrobin	64.8	80.0	80.3			0.361
	Silvex	37.0	59.9	58.3			2.71
	Sucralose	83.3					1.81
	Thiamethoxam	93.0	174	175			0.767
	Tolfenpyrad	37.9	55.2	46.1			17.8
	Triclopyr	43.7	60.0	53.8			10.9
SM 2320 B-2011	Total Alkalinity	99.1				0.853	
SM 2540 C-2011	TDS					0.805	
SM 4500 F-C-2011	Fluoride	99.1	99.5	99.0			0.495
SM 5310 B-2011	Organic Carbon	96.5	105	90.8			7.85

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2312492
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2312492
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2312493
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2312493
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2312493
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2312493

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2312500
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2312492
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2312492
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2312492
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2312492
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2312493

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 300.0 Rev. 2.1	03/16/2022			03/19/2022 06:24	Anna M. Plaviak	2312492
EPA 350.1 Rev. 2.0	03/16/2022			03/18/2022 09:34	Judith K. Clark	2312493
EPA 351.2 Rev. 2.0	03/16/2022	03/18/2022 09:50	Samantha L Bates	03/21/2022 13:05	Alexandra J Mattheus	2312493
EPA 353.2 Rev. 2.0	03/16/2022			03/17/2022 11:04	Beverly Y. Sanders	2312493
EPA 365.1 Rev. 2.0	03/16/2022	03/22/2022 15:55	Simonne.V. Calhoun	03/24/2022 14:28	James L Waggeberby	2312493
EPA 8321B	03/16/2022	03/16/2022 13:00	Manjita Shrestha	03/16/2022 15:46	Manjita Shrestha	2312500
	03/16/2022	03/16/2022 13:00	Manjita Shrestha	03/16/2022 20:17	Manjita Shrestha	2312500
	03/16/2022	03/18/2022 12:00	June Rhew	03/26/2022 07:31	Juyoung Kim	2312500
	03/16/2022	03/18/2022 12:00	June Rhew	03/31/2022 23:47	Juyoung Kim	2312500
SM 2320 B-2011	03/16/2022			03/18/2022 01:25	Dale L. Simmons	2312492
SM 2540 C-2011	03/16/2022			03/18/2022 15:46	Yijie Li	2312492
SM 2540 D-2011	03/16/2022			03/18/2022 15:46	Yijie Li	2312492
SM 4500 F-C-2011	03/16/2022			03/18/2022 01:25	Dale L. Simmons	2312492
SM 5310 B-2011	03/16/2022			03/17/2022 20:08	Khloe J Berg	2312493