

Chemical Analysis Report

SO-DIST-2021-04-12-01

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

Event Description: **2021 SMP : Okee Canals**

Request ID: **RQ-2021-04-05-62**

Customer: **SO-DIST**

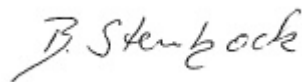
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Chris Hormuth

For additional information please contact
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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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 06-MAY-2021 18:28



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: Harney Pond Canal @ SR 70

Collection Date/Time: 04/08/2021 10:40

Field ID: G4SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238805	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P396590	
		Sulfate	23	Y	mg SO4/L	P396593	
	SM 2320 B-2011	Total Alkalinity	21	Y	mg CaCO3/L	P396499	
	SM 2540 C-2011	TDS	114	AY	mg/L	P396810	
	SM 2540 D-2011	TSS	19	Y	mg/L	P396541	
	SM 4500 F-C-2011	Fluoride	0.066	I	mg F/L	P396500	
2238806	EPA 350.1 Rev. 2.0	Ammonia-N	0.009	Y	mg N/L	P396767	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4	Y	mg N/L	P396730	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P396627	
	EPA 365.1 Rev. 2.0	Total-P	0.075	Y	mg P/L	P396553	
	SM 5310 B-2011	Organic Carbon	17	Y	mg C/L	P396703	
2238811	EPA 8321B	2,4-D	0.026	Y	ug/L	P396348	
		Acesulfame K	0.10	UY	ug/L	P396512	
		2,4,5-T	0.0040	UY	ug/L	P396348	
		AMPA	0.18	IY	ug/L	P396512	
		Sucralose	0.20	Y	ug/L	P396370	
		Acetaminophen	0.0080	UY	ug/L	P396348	
		Acetamiprid	0.0020	UY	ug/L	P396348	
		Endothall	0.25	UY	ug/L	P396512	
		Glufosinate	0.10	UY	ug/L	P396512	
		Glyphosate	0.19	IY	ug/L	P396512	
		Afidopyropen	0.0020	UY	ug/L	P396348	
		Bentazon	0.017	Y	ug/L	P396348	
		Benzovindiflupyr	0.0020	UY	ug/L	P396348	
		Carbamazepine	8.0E-04	UY	ug/L	P396348	
		Clothianidin	0.0042	IY	ug/L	P396348	
		Dinotefuran	0.0020	UY	ug/L	P396348	
		Diuron	0.0020	UY	ug/L	P396348	
		Fenuron	0.016	UY	ug/L	P396348	
		Fluridone	0.0083	Y	ug/L	P396348	
		Imazapyr	0.018	Y	ug/L	P396348	
		Hydrocodone	0.0020	UY	ug/L	P396348	
		Ibuprofen	0.020	UY	ug/L	P396348	
		Imidacloprid	0.011	Y	ug/L	P396348	
		Linuron	0.0040	UY	ug/L	P396348	
		Mandestrobin	0.0020	UY	ug/L	P396348	
		MCP	0.0020	UY	ug/L	P396348	
		Naproxen	0.0080	UY	ug/L	P396348	
		Primidone	0.0040	UY	ug/L	P396348	
		Pyraclostrobin	0.0020	UY	ug/L	P396348	
		Thiamethoxam	0.0029	IY	ug/L	P396348	
		Tolfenpyrad	0.0020	UY	ug/L	P396348	
		Triclopyr	0.0040	UY	ug/L	P396348	

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
EPA 300.0 Rev. 2.1: Sulfate: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 2320 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 2540 C-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 2540 D-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 353.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.							
SM 5310 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.							
EPA 8321B: Y - Sample was received with inadequate sample preservation: see NCR report.							

Sample Location: Indian Praire Canal @ SR 70

Collection Date/Time: 04/08/2021 11:10

Field ID: G4SD0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2238807	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P396590	
		Sulfate	22	Y	mg SO4/L	P396593	
	SM 2320 B-2011	Total Alkalinity	21	Y	mg CaCO3/L	P396499	
	SM 2540 C-2011	TDS	135	Y	mg/L	P396810	
	SM 2540 D-2011	TSS	84	Y	mg/L	P396540	
	SM 4500 F-C-2011	Fluoride	0.066	I	mg F/L	P396500	
2238808	EPA 350.1 Rev. 2.0	Ammonia-N	0.008	Y	mg N/L	P396757	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4	Y	mg N/L	P396730	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P396627	
	EPA 365.1 Rev. 2.0	Total-P	0.11	Y	mg P/L	P396553	
	SM 5310 B-2011	Organic Carbon	17	Y	mg C/L	P396703	
2238810	EPA 8276	Chlordane	5.3	U	ng/L	P396268	
		Toxaphene	32	U	ng/L	P396268	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2320 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 C-2011: Sample temperature was outside the acceptable range when received at the laboratory.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample temperature was outside the acceptable range when received at the laboratory.

EPA 350.1 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 351.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 353.2 Rev. 2.0: Sample temperature was outside the acceptable range when received at the laboratory.

EPA 365.1 Rev. 2.0: Total-P: Sample temperature was outside the acceptable range when received at the laboratory.

SM 5310 B-2011: Sample temperature was outside the acceptable range when received at the laboratory.

Non-Conformance Report

NCR ID: 8765

Event(s)

SO-DIST-2021-04-12-01

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received outside the acceptable temperature range.

Resolution: Samples logged in according to SMP Protocol.

Samples will be qualified as appropriate.

Customer contacted, email correspondence attached to sample submittal forms.

Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Joshua Ayres 4/19/2021

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: P396590

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396593

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396757

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396767

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396730

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396627

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396553

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

Reference Method: EPA 8276
Batch ID: P396268

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P396348

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P396348

Component	Result	Code	Units
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: P396370

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P396512

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

Reference Method: SM 2320 B-2011

Batch ID: P396499

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

Reference Method: SM 2540 C-2011

Batch ID: P396810

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P396540

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P396541

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396500

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P396703

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: P396590

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396757

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396627

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396553

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

Reference Method: EPA 8276
Batch ID: P396268

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	101	103	P/P	56 - 117
Toxaphene	83.4	81.1	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P396348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	152		P	30 - 160
2,4,5-T	127		P	30 - 160
Acetaminophen	91.1		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P396348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetamiprid	83.0		P	30 - 160
Afidopyropen	62.7		P	30 - 160
Bentazon	92.5		P	30 - 160
Benzovindiflupyr	77.3		P	30 - 160
Carbamazepine	92.9		P	30 - 160
Clothianidin	89.5		P	30 - 160
Dinotefuran	90.4		P	30 - 160
Diuron	64.8		P	30 - 160
Fenuron	101		P	30 - 160
Fluridone	87.3		P	30 - 160
Hydrocodone	86.3		P	30 - 160
Ibuprofen	85.3		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	103		P	30 - 160
Linuron	73.7		P	30 - 160
Mandestrobin	88.6		P	30 - 160
MCPP	148		P	30 - 160
Naproxen	78.6		P	30 - 160
Primidone	91.6		P	30 - 160
Pyraclostrobin	75.3		P	30 - 160
Thiamethoxam	95.3		P	30 - 160
Tolfenpyrad	46.0		P	30 - 160
Triclopyr	130		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	91.7		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P396512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	91.3		P	40 - 150
Endothall	80.3		P	40 - 150
Glufosinate	82.6		P	40 - 150
Glyphosate	100		P	40 - 140

Reference Method: SM 2320 B-2011

Batch ID: P396499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P396500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	90 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P396703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238805	Chloride	105	106	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238805	Sulfate	105	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238849	Ammonia-N	98.8	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238239	Ammonia-N	96.6	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238827	Kjeldahl Nitrogen	108	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238269	NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238516	Total-P	105	107	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P396268

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238383	Chlordane	110	112	P/P	47 - 128
2238383	Toxaphene	77.7	73.9	P/P	11 - 163

Reference Method: EPA 8321B
Batch ID: P396348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237823	2,4-D	125	142	P/P	30 - 160
2237823	2,4,5-T	107	109	P/P	30 - 160
2237823	Acetaminophen	100	109	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P396348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237823	Acetamiprid	89.0	90.6	P/P	30 - 160
2237823	Afidopyropen	67.6	69.6	P/P	30 - 160
2237823	Bentazon	49.5	60.4	P/P	30 - 160
2237823	Benzovindiflupyr	69.4	72.5	P/P	30 - 160
2237823	Carbamazepine	84.9	88.4	P/P	30 - 160
2237823	Clothianidin	97.9	103	P/P	30 - 160
2237823	Dinotefuran	109	111	P/P	30 - 160
2237823	Diuron	53.4	56.4	P/P	30 - 160
2237823	Fenuron	80.0	86.2	P/P	30 - 160
2237823	Fluridone	69.0	70.7	P/P	30 - 160
2237823	Hydrocodone	91.1	114	P/P	30 - 160
2237823	Ibuprofen	83.5	75.6	P/P	30 - 160
2237823	Imazapyr	95.9	94.0	P/P	30 - 160
2237823	Imidacloprid	141	144	P/P	30 - 160
2237823	Linuron	58.1	61.1	P/P	30 - 160
2237823	Mandestrobin	78.4	83.7	P/P	30 - 160
2237823	MCPP	132	134	P/P	30 - 160
2237823	Naproxen	72.8	79.5	P/P	30 - 160
2237823	Primidone	85.2	87.7	P/P	30 - 160
2237823	Pyraclostrobin	71.0	75.0	P/P	30 - 160
2237823	Thiamethoxam	139	138	P/P	30 - 160
2237823	Tolfenpyrad	37.8	37.1	P/P	30 - 160
2237823	Triclopyr	106	115	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237810	Sucralose	108	108	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P396512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238884	Acesulfame K	108	131	P/P	40 - 150
2238884	AMPA	116	124	P/P	40 - 150
2238884	Endothall	94.3	93.9	P/P	40 - 150
2238884	Glufosinate	104	104	P/P	40 - 150
2238884	Glyphosate	76.4	86.2	P/P	40 - 140

Reference Method: SM 4500 F-C-2011

Batch ID: P396500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238906	Fluoride	97.4	98.6	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P396703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2238267	Organic Carbon	98.7	99.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238805	Chloride	0.783	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238805	Sulfate	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238849	Ammonia-N	0.468	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238239	Ammonia-N	0.347	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238827	Kjeldahl Nitrogen	1.28	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238269	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238516	Total-P	1.69	Spike	P	0 - 20

Reference Method: EPA 8276
Batch ID: P396268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238383	Chlordane	1.66	Spike	P	0 - 30
2238383	Toxaphene	5.02	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
 Batch ID: P396268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Chlordane	2.07	LCS	P	0 - 30
LFB	Toxaphene	2.80	LCS	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P396348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237823	2,4-D	11.6	Spike	P	0 - 30
2237823	2,4,5-T	2.57	Spike	P	0 - 30
2237823	Acetaminophen	8.69	Spike	P	0 - 30
2237823	Acetamiprid	1.76	Spike	P	0 - 30
2237823	Afidopyropen	2.92	Spike	P	0 - 30
2237823	Bentazon	8.46	Spike	P	0 - 30
2237823	Benzovindiflupyr	4.40	Spike	P	0 - 30
2237823	Carbamazepine	4.05	Spike	P	0 - 30
2237823	Clothianidin	5.17	Spike	P	0 - 30
2237823	Dinotefuran	1.53	Spike	P	0 - 30
2237823	Diuron	5.48	Spike	P	0 - 30
2237823	Fenuron	7.43	Spike	P	0 - 30
2237823	Fluridone	2.44	Spike	P	0 - 30
2237823	Hydrocodone	22.5	Spike	P	0 - 30
2237823	Ibuprofen	10.0	Spike	P	0 - 30
2237823	Imazapyr	1.06	Spike	P	0 - 30
2237823	Imidacloprid	2.40	Spike	P	0 - 30
2237823	Linuron	4.98	Spike	P	0 - 30
2237823	Mandestrobin	6.52	Spike	P	0 - 30
2237823	MCP	1.21	Spike	P	0 - 30
2237823	Naproxen	8.83	Spike	P	0 - 30
2237823	Primidone	2.90	Spike	P	0 - 30
2237823	Pyraclostrobin	5.47	Spike	P	0 - 30
2237823	Thiamethoxam	0.873	Spike	P	0 - 30
2237823	Tolfenpyrad	1.69	Spike	P	0 - 30
2237823	Triclopyr	8.00	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P396370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237810	Sucralose	0.336	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P396512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238884	Acesulfame K	19.0	Spike	P	0 - 30
2238884	AMPA	6.81	Spike	P	0 - 30
2238884	Endothall	0.410	Spike	P	0 - 30
2238884	Glufosinate	0.212	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P396512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238884	Glyphosate	12.1	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P396499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238906	Total Alkalinity	2.02	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P396810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238805	TDS	0.881	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P396541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237713	TSS	4.76	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P396500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238906	Fluoride	0.953	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2238267	Organic Carbon	0.658	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2238810
Field Sample ID: G4SD0174

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	65.2	P	29 - 92.0
EPA 8276	PCNB	73.9	P	43 - 134

Lab Sample ID: 2238811
Field Sample ID: G4SD0173

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.7	P	30 - 160
EPA 8321B	Diuron-d6	53.0	P	30 - 160
EPA 8321B	Endothall-d6	127	P	40 - 160
EPA 8321B	Endothall-d6	127	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	40 - 160
EPA 8321B	Ibuprofen-d3	89.4	P	30 - 160
EPA 8321B	Primidone-d5	86.0	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104682

Included Lab Sample IDs: 2238805, 2238807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	100	P/P	90 - 110
Sulfate	98.7	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104684

Included Lab Sample IDs: 2238811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.8	101	P/P	50 - 150
2,4,5-T	107	104	P/P	50 - 150
Acetaminophen	93.7	96.0	P/P	60 - 160
Acetamiprid	98.3	105	P/P	50 - 150
Afidopyropen	84.8	97.8	P/P	50 - 150
Bentazon	96.1	115	P/P	50 - 160
Benzovindiflupyr	94.4	98.8	P/P	50 - 160
Carbamazepine	107	108	P/P	60 - 150
Clothianidin	97.1	93.1	P/P	60 - 150
Dinotefuran	110	106	P/P	50 - 150
Diuron	104	98.3	P/P	60 - 160
Fenuron	109	97.2	P/P	60 - 150
Fluridone	107	98.1	P/P	60 - 160
Hydrocodone	104	108	P/P	60 - 150
Ibuprofen	96.4	107	P/P	50 - 160
Imazapyr	106	122	P/P	50 - 160
Imidacloprid	109	100	P/P	60 - 150
Linuron	94.7	106	P/P	60 - 150
Mandestrobin	112	101	P/P	50 - 150
MCPP	103	112	P/P	50 - 150
Naproxen	111	106	P/P	50 - 160
Primidone	95.6	91.2	P/P	60 - 150
Pyraclostrobin	102	101	P/P	60 - 150
Thiamethoxam	106	83.7	P/P	50 - 150
Tolfenpyrad	102	100	P/P	60 - 150
Triclopyr	102	101	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A104709

Included Lab Sample IDs: 2238805, 2238807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104709

Included Lab Sample IDs: 2238805, 2238807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104750

Included Lab Sample IDs: 2238806, 2238808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104763

Included Lab Sample IDs: 2238806, 2238808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104787

Included Lab Sample IDs: 2238806, 2238808

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

Reference Method: EPA 8321B

Run ID: A104794

Included Lab Sample IDs: 2238811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.9	94.5	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104806

Included Lab Sample IDs: 2238808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104809

Included Lab Sample IDs: 2238806

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.4	97.6	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A104811

Included Lab Sample IDs: 2238810

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	98.5		P	80 - 120
Toxaphene	94.2		P	80 - 120

Reference Method: EPA 8321B

Run ID: A104854

Included Lab Sample IDs: 2238811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	128	122	P/P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A104854
Included Lab Sample IDs: 2238811

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	96.4	P/P	40 - 160
Endothall	141	72.7	P/P	40 - 160
Glufosinate	103	82.6	P/P	40 - 160
Glyphosate	113	119	P/P	40 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A104871
Included Lab Sample IDs: 2238806, 2238808

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	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 300.0 Rev. 2.1	Chloride	105		105	106			0.783
	Sulfate	107		105	107			1.18
EPA 350.1 Rev. 2.0	Ammonia-N	99.8		98.8	98.0			0.468
	Ammonia-N	98.6		96.6	96.2			0.347
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109		108	109			1.28
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0		99.0	100			1.01
EPA 365.1 Rev. 2.0	Total-P	105		105	107			1.69
EPA 8276	Chlordane	101	103	110	112	2.07		1.66
	Toxaphene	83.4	81.1	77.7	73.9	2.80		5.02
EPA 8321B	2,4-D	152		125	142			11.6
	2,4,5-T	127		107	109			2.57
	Acesulfame K	104		108	131			19.0
	Acetaminophen	91.1		100	109			8.69
	Acetamiprid	83.0		89.0	90.6			1.76
	Afidopyropen	62.7		67.6	69.6			2.92
	AMPA	91.3		116	124			6.81
	Bentazon	92.5		49.5	60.4			8.46
	Benzovindiflupyr	77.3		69.4	72.5			4.40
	Carbamazepine	92.9		84.9	88.4			4.05
	Clothianidin	89.5		97.9	103			5.17
	Dinotefuran	90.4		109	111			1.53
	Diuron	64.8		53.4	56.4			5.48
	Endothall	80.3		94.3	93.9			0.410
	Fenuron	101		80.0	86.2			7.43
	Fluridone	87.3		69.0	70.7			2.44
	Glufosinate	82.6		104	104			0.212
	Glyphosate	100		76.4	86.2			12.1
	Hydrocodone	86.3		91.1	114			22.5
	Ibuprofen	85.3		83.5	75.6			10.0
	Imazapyr	100		95.9	94.0			1.06
	Imidacloprid	103		141	144			2.40
	Linuron	73.7		58.1	61.1			4.98
	Mandestrobin	88.6		78.4	83.7			6.52
	MCPP	148		132	134			1.21
	Naproxen	78.6		72.8	79.5			8.83
	Primidone	91.6		85.2	87.7			2.90
	Pyraclostrobin	75.3		71.0	75.0			5.47
	Sucralose	91.7		108	108			0.336
	Thiamethoxam	95.3		139	138			0.873
	Tolfenpyrad	46.0		37.8	37.1			1.69
	Triclopyr	130		106	115			8.00
SM 2320 B-2011	Total Alkalinity	101					2.02	
SM 2540 C-2011	TDS						0.881	
SM 2540 D-2011	TSS						4.76	
SM 4500 F-C-2011	Fluoride	96.9		97.4	98.6			0.953
SM 5310 B-2011	Organic Carbon	98.1		98.7	99.5			0.658

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2238805, 2238807
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2238805, 2238807
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2238806, 2238808

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2238806, 2238808
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2238806, 2238808
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2238806, 2238808
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2238810
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2238811
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2238811
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2238805, 2238807
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2238805, 2238807
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2238805, 2238807
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2238805, 2238807
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2238806, 2238808

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	04/10/2021			04/14/2021 04:28	Lipi Saha	2238805
	04/10/2021			04/14/2021 05:41	Lipi Saha	2238807
EPA 350.1 Rev. 2.0	04/10/2021			04/18/2021 13:47	Ping Hua	2238806
	04/10/2021			04/18/2021 14:35	Ping Hua	2238808
EPA 351.2 Rev. 2.0	04/10/2021	04/17/2021 12:00	Yen Ta	04/20/2021 16:32	Virginia P. Brown	2238806
	04/10/2021	04/17/2021 12:00	Yen Ta	04/20/2021 16:34	Virginia P. Brown	2238808
EPA 353.2 Rev. 2.0	04/10/2021			04/15/2021 13:38	Lauren Lees	2238806
	04/10/2021			04/15/2021 13:39	Lauren Lees	2238808
EPA 365.1 Rev. 2.0	04/10/2021	04/14/2021 16:27	Madeline Gruver	04/15/2021 11:41	Shengyu Ding	2238806
	04/10/2021	04/14/2021 16:27	Madeline Gruver	04/15/2021 11:42	Shengyu Ding	2238808
EPA 8276	04/10/2021	04/13/2021 08:00	Fe-Val Siddell	04/16/2021 13:47	Chiran X. Ghimire	2238810
EPA 8321B	04/10/2021	04/12/2021 14:00	Hoor Shaik	04/13/2021 11:54	Juyoung Kim	2238811
	04/10/2021	04/12/2021 15:00	Rebecca Ware	04/14/2021 21:26	Rebecca Ware	2238811
	04/10/2021	04/12/2021 15:00	Rebecca Ware	04/16/2021 22:43	Mohammad Ghaffari	2238811
SM 2320 B-2011	04/10/2021			04/13/2021 20:38	Dale L. Simmons	2238805
	04/10/2021			04/13/2021 20:51	Dale L. Simmons	2238807
SM 2540 C-2011	04/10/2021			04/13/2021 14:23	Yijie Li	2238805, 2238807
SM 2540 D-2011	04/10/2021			04/13/2021 14:23	Yijie Li	2238805, 2238807
SM 4500 F-C-2011	04/10/2021			04/13/2021 20:38	Dale L. Simmons	2238805
	04/10/2021			04/13/2021 20:51	Dale L. Simmons	2238807
SM 5310 B-2011	04/10/2021			04/15/2021 18:12	Lauren Lees	2238806
	04/10/2021			04/15/2021 18:23	Lauren Lees	2238808