

Chemical Analysis Report

SW-DIST-2021-05-28-01

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

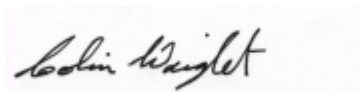
Event Description: **LVI**
Request ID: **RQ-2021-05-24-61**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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: Colin Wright, Program Administrator

Date Certified: 21-JUN-2021 15:07

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored rectangular background.

Case Narrative

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

Results for the following analytical groups are included in this report: Metals, 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: Clark Lake @ NW Lobe

Collection Date/Time: 05/27/2021 11:50

Field ID: G3SW0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2250896	EPA 180.1 Rev. 2.0	Turbidity	38		NTU	P399206	
	EPA 300.0 Rev. 2.1	Chloride	89		mg Cl/L	P399476	
		Sulfate	90		mg SO4/L	P399479	
	SM 2120 B-2011	Color (true)	19	A	PCU	P399013	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P399063	
	SM 2540 C-2011	TDS	518		mg/L	P399519	
	SM 2540 D-2011	TSS	26	I	mg/L	P399105	
	SM 4500 F-C-2011	Fluoride	0.67		mg F/L	P399064	
2250898	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P398987	
2250902	EPA 8321B	2,4-D	0.0065	I	ug/L	P399014	
		Acesulfame K	0.15	I	ug/L	P399017	
		2,4,5-T	0.0040	U	ug/L	P399014	
		AMPA	0.10	U	ug/L	P399017	
		Sucralose	0.085	J	ug/L	P399017	MS
		Acetaminophen	0.0080	U	ug/L	P399014	
		Acetamiprid	0.0020	U	ug/L	P399014	
		Endothall	0.25	U	ug/L	P399017	
		Glufosinate	0.10	U	ug/L	P399017	
		Glyphosate	0.46		ug/L	P399017	
		Afidopyropen	0.0020	U	ug/L	P399014	
		Bentazon	9.1E-04	I	ug/L	P399014	
		Benzovindiflupyr	0.0020	U	ug/L	P399014	
		Carbamazepine	8.0E-04	U	ug/L	P399014	
		Clothianidin	0.0020	U	ug/L	P399014	
		Dinotefuran	0.0020	U	ug/L	P399014	
		Diuron	0.0020	U	ug/L	P399014	
		Fenuron	0.034	I	ug/L	P399014	
		Fluridone	0.0023	I	ug/L	P399014	
		Imazapyr	0.0040	U	ug/L	P399014	
		Hydrocodone	0.0020	U	ug/L	P399014	
		Ibuprofen	0.020	U	ug/L	P399014	
		Imidacloprid	0.0020	U	ug/L	P399014	
		Linuron	0.0040	U	ug/L	P399014	
		Mandestrobin	0.0030	I	ug/L	P399014	
		MCP	0.0020	U	ug/L	P399014	
		Naproxen	0.0080	U	ug/L	P399014	
		Primidone	0.0040	U	ug/L	P399014	
		Pyraclostrobin	0.0020	U	ug/L	P399014	
		Thiamethoxam	0.0020	U	ug/L	P399014	
		Tolfenpyrad	0.0020	U	ug/L	P399014	
		Triclopyr	0.0040	U	ug/L	P399014	
2251218	EPA 200.7 Rev. 4.4	Barium	22.8		ug/L	P399302	
		Calcium	42.0		mg/L	P399302	

Field ID: G3SW0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2251218	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P399302	
		Magnesium	27.5		mg/L	P399302	
		Manganese	6.8		ug/L	P399302	
		Potassium	5.8		mg/L	P399302	
		Sodium	56.2		mg/L	P399302	
	EPA 200.8 Rev. 5.4	Zinc	5.9	I	ug/L	P399302	
		Aluminum	31		ug/L	P399302	
		Antimony	0.39		ug/L	P399302	
		Arsenic	5.58		ug/L	P399302	
		Beryllium	0.010	U	ug/L	P399302	
		Boron**	38.2		ug/L	P399302	
		Cadmium	0.020	U	ug/L	P399302	
		Chromium	0.40	U	ug/L	P399302	
		Copper	0.42	I	ug/L	P399302	
		Lead	0.20	U	ug/L	P399302	
		Nickel	0.54	I	ug/L	P399302	
		Selenium	0.20	U	ug/L	P399302	
		Silver	0.010	U	ug/L	P399302	
		Thallium	0.10	U	ug/L	P399302	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399206

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P399302

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P399302

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399476

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399479

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398987

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: P399014

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
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: P399017

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: P399013

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P399063

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: P399519

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P399105

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399064

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P399302

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.0		P	85 - 115
Calcium	108		P	85 - 115
Iron	106		P	85 - 115
Magnesium	105		P	85 - 115
Manganese	99.7		P	85 - 115
Potassium	101		P	85 - 115
Sodium	104		P	85 - 115
Zinc	93.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P399302

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.4		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	92.4		P	85 - 115
Boron	107		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	99.7		P	85 - 115
Copper	100		P	85 - 115
Lead	110		P	85 - 115
Nickel	99.6		P	85 - 115
Selenium	103		P	85 - 115
Silver	101		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399479

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398987

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

Reference Method: EPA 8321B

Batch ID: P399014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	113		P	40 - 150
2,4,5-T	111		P	40 - 150
Acetaminophen	92.4		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P399014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetamiprid	84.1		P	40 - 150
Afidopyropen	75.4		P	40 - 150
Bentazon	96.7		P	30 - 150
Benzovindiflupyr	97.0		P	40 - 150
Carbamazepine	91.2		P	40 - 150
Clothianidin	86.9		P	40 - 150
Dinotefuran	94.2		P	40 - 150
Diuron	78.3		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	82.3		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	77.1		P	40 - 150
Imazapyr	96.0		P	40 - 150
Imidacloprid	85.8		P	40 - 150
Linuron	75.1		P	40 - 150
Mandestrobin	109		P	40 - 150
MCPP	116		P	40 - 150
Naproxen	60.5		P	40 - 150
Primidone	92.0		P	40 - 150
Pyraclostrobin	72.8		P	40 - 150
Thiamethoxam	85.6		P	40 - 150
Tolfenpyrad	61.4		P	30 - 150
Triclopyr	108		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P399017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	94.1		P	40 - 150
AMPA	89.9		P	40 - 150
Endothall	88.2		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	104		P	40 - 150
Sucralose	113		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P399013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.5		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P399063

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P399064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	93 - 104

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P399302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251062	Barium	99.4		P	80 - 120
2251062	Calcium	105		P	80 - 120
2251062	Iron	106		P	80 - 120
2251062	Magnesium	102		P	80 - 120
2251062	Manganese	101		P	80 - 120
2251062	Potassium	98.3		P	80 - 120
2251062	Sodium	103		P	80 - 120
2251062	Zinc	98.0		P	80 - 120
2251291	Barium	102	100	P/P	80 - 120
2251291	Calcium	113	108	P/P	80 - 120
2251291	Iron	110	107	P/P	80 - 120
2251291	Magnesium	109	106	P/P	80 - 120
2251291	Manganese	103	101	P/P	80 - 120
2251291	Potassium	105	102	P/P	80 - 120
2251291	Sodium	110	106	P/P	80 - 120
2251291	Zinc	99.0	97.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P399302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251062	Aluminum	98.1		P	80 - 120
2251062	Antimony	104		P	80 - 120
2251062	Arsenic	103		P	80 - 120
2251062	Beryllium	95.5		P	80 - 120
2251062	Boron	101		P	80 - 120
2251062	Cadmium	104		P	80 - 120
2251062	Chromium	101		P	80 - 120
2251062	Copper	102		P	80 - 120
2251062	Lead	111		P	80 - 120
2251062	Nickel	101		P	80 - 120
2251062	Selenium	103		P	80 - 120
2251062	Silver	101		P	80 - 120
2251062	Thallium	107		P	80 - 120
2251291	Aluminum	93.7	96.8	P/P	80 - 120
2251291	Antimony	99.7	101	P/P	80 - 120
2251291	Arsenic	99.5	102	P/P	80 - 120
2251291	Beryllium	89.3	94.0	P/P	80 - 120
2251291	Boron	97.3	98.0	P/P	80 - 120
2251291	Cadmium	102	103	P/P	80 - 120
2251291	Chromium	97.6	98.5	P/P	80 - 120
2251291	Copper	98.9	99.5	P/P	80 - 120
2251291	Lead	108	110	P/P	80 - 120
2251291	Nickel	97.3	97.7	P/P	80 - 120
2251291	Selenium	98.2	99.4	P/P	80 - 120
2251291	Silver	103	102	P/P	80 - 120
2251291	Thallium	102	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250461	Chloride	92.8		P	90 - 110
2250718	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399479

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250461	Sulfate	91.8		P	90 - 110
2250718	Sulfate	94.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P398987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250906	O-Phosphate-P	98.0	99.3	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P399014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250793	2,4-D	119	109	P/P	40 - 150
2250793	2,4,5-T	92.1	77.2	P/P	40 - 150
2250793	Acetaminophen	84.2	82.6	P/P	30 - 150
2250793	Acetamiprid	66.2	66.9	P/P	40 - 150
2250793	Afidopyropen	102	84.3	P/P	40 - 150
2250793	Benzovindiflupyr	95.7	91.9	P/P	40 - 150
2250793	Carbamazepine	72.2	68.9	P/P	40 - 150
2250793	Clothianidin	70.9	78.2	P/P	40 - 150
2250793	Dinotefuran	90.2	94.5	P/P	40 - 150
2250793	Diuron	52.4	51.7	P/P	40 - 150
2250793	Fenuron	75.6	77.9	P/P	40 - 150
2250793	Fluridone	75.7	77.2	P/P	40 - 150
2250793	Hydrocodone	70.7	69.7	P/P	40 - 150
2250793	Ibuprofen	79.6	76.3	P/P	40 - 150
2250793	Imidacloprid	133	125	P/P	40 - 150
2250793	Linuron	75.9	72.8	P/P	40 - 150
2250793	Mandestrobin	129	113	P/P	40 - 150
2250793	MCPP	102	104	P/P	40 - 150
2250793	Naproxen	65.5	65.1	P/P	40 - 150
2250793	Primidone	85.8	86.3	P/P	40 - 150
2250793	Pyraclostrobin	77.3	75.8	P/P	40 - 150
2250793	Thiamethoxam	89.5	87.3	P/P	40 - 150
2250793	Tolfenpyrad	57.1	54.5	P/P	30 - 150
2250793	Triclopyr	88.0	83.7	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P399017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250902	Acesulfame K	84.9	81.4	P/P	40 - 150
2250902	AMPA	72.3	70.9	P/P	40 - 150
2250902	Endothall	93.1	103	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P399017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250902	Glufosinate	105	95.8	P/P	40 - 150
2250902	Glyphosate	99.6	90.0	P/P	40 - 150
2250902	Sucralose	38.7	52.0	F/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P399064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2251100	Fluoride	99.1	98.4	P/P	92 - 107

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P399206

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250943	Turbidity	13.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P399302

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251291	Barium	1.50	Spike	P	0 - 20
2251291	Calcium	2.81	Spike	P	0 - 20
2251291	Iron	2.15	Spike	P	0 - 20
2251291	Magnesium	2.21	Spike	P	0 - 20
2251291	Manganese	1.68	Spike	P	0 - 20
2251291	Potassium	2.85	Spike	P	0 - 20
2251291	Sodium	2.89	Spike	P	0 - 20
2251291	Zinc	1.32	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P399302

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251291	Aluminum	3.19	Spike	P	0 - 20
2251291	Antimony	0.851	Spike	P	0 - 20
2251291	Arsenic	2.07	Spike	P	0 - 20
2251291	Beryllium	5.13	Spike	P	0 - 20
2251291	Boron	0.664	Spike	P	0 - 20
2251291	Cadmium	0.698	Spike	P	0 - 20
2251291	Chromium	0.968	Spike	P	0 - 20
2251291	Copper	0.543	Spike	P	0 - 20
2251291	Lead	2.05	Spike	P	0 - 20
2251291	Nickel	0.352	Spike	P	0 - 20
2251291	Selenium	1.20	Spike	P	0 - 20
2251291	Silver	1.13	Spike	P	0 - 20
2251291	Thallium	2.85	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399476

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250461	Chloride	0.637	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P399479

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250461	Sulfate	1.61	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P398987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250906	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P399014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250793	2,4-D	8.58	Spike	P	0 - 30
2250793	2,4,5-T	17.5	Spike	P	0 - 30
2250793	Acetaminophen	1.98	Spike	P	0 - 30
2250793	Acetamiprid	0.967	Spike	P	0 - 30
2250793	Afidopyropen	18.7	Spike	P	0 - 30
2250793	Bentazon	6.97	Spike	P	0 - 30
2250793	Benzovindiflupyr	4.07	Spike	P	0 - 30
2250793	Carbamazepine	4.79	Spike	P	0 - 30
2250793	Clothianidin	9.73	Spike	P	0 - 30
2250793	Dinotefuran	4.61	Spike	P	0 - 30
2250793	Diuron	1.23	Spike	P	0 - 30
2250793	Fenuron	3.03	Spike	P	0 - 30
2250793	Fluridone	1.97	Spike	P	0 - 30
2250793	Hydrocodone	1.38	Spike	P	0 - 30
2250793	Ibuprofen	4.25	Spike	P	0 - 30
2250793	Imazapyr	4.99	Spike	P	0 - 30
2250793	Imidacloprid	6.13	Spike	P	0 - 30
2250793	Linuron	4.22	Spike	P	0 - 30
2250793	Mandestrobin	13.8	Spike	P	0 - 30
2250793	MCP	1.87	Spike	P	0 - 30
2250793	Naproxen	0.658	Spike	P	0 - 30
2250793	Primidone	0.591	Spike	P	0 - 30
2250793	Pyraclostrobin	1.87	Spike	P	0 - 30
2250793	Thiamethoxam	2.45	Spike	P	0 - 30
2250793	Tolfenpyrad	4.69	Spike	P	0 - 30
2250793	Triclopyr	4.98	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P399017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250902	Acesulfame K	3.94	Spike	P	0 - 30
2250902	AMPA	1.92	Spike	P	0 - 30
2250902	Endothall	10.5	Spike	P	0 - 30
2250902	Glufosinate	8.87	Spike	P	0 - 30
2250902	Glyphosate	8.49	Spike	P	0 - 30
2250902	Sucralose	27.3	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P399013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P399013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250896	Color (true)	6.91	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P399063

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251100	Total Alkalinity	0.360	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P399519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250731	TDS	4.29	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P399064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2251100	Fluoride	0.506	Spike	P	0 - 2.1

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

Quality Assurance Report Surrogates

Lab Sample ID: 2250902

Field Sample ID: G3SW0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	52.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.1	P	30 - 160
EPA 8321B	Diuron-d6	41.0	P	30 - 160
EPA 8321B	Endothall-d6	92.8	P	30 - 160
EPA 8321B	Endothall-d6	92.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.7	P	30 - 160
EPA 8321B	Primidone-d5	78.0	P	30 - 160
EPA 8321B	Sucralose-d6	41.0	P	30 - 160
EPA 8321B	Sucralose-d6	41.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105764

Included Lab Sample IDs: 2250898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105767

Included Lab Sample IDs: 2250896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A105768

Included Lab Sample IDs: 2250896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	101	P/P	90 - 115

Reference Method: SM 2320 B-2011

Run ID: A105797

Included Lab Sample IDs: 2250896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A105797

Included Lab Sample IDs: 2250896

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

Reference Method: EPA 8321B

Run ID: A105827

Included Lab Sample IDs: 2250902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.5	95.8	P/P	60 - 160
Endothall	87.0	120	P/P	60 - 160
Sucralose	125	94.1	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A105838

Included Lab Sample IDs: 2250902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.8	89.1	P/P	60 - 160
Glufosinate	96.5	97.4	P/P	60 - 160
Glyphosate	93.9	107	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A105850
Included Lab Sample IDs: 2250902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.5	109	P/P	50 - 150
2,4,5-T	121	109	P/P	50 - 150
Acetaminophen	105	119	P/P	60 - 160
Acetamiprid	107	107	P/P	50 - 150
Afidopyropen	102	107	P/P	50 - 150
Bentazon	134	121	P/P	50 - 160
Benzovindiflupyr	119	141	P/P	50 - 150
Carbamazepine	105	109	P/P	60 - 150
Clothianidin	101	110	P/P	60 - 150
Dinotefuran	99.3	107	P/P	50 - 150
Diuron	103	101	P/P	60 - 160
Fenuron	95.7	96.3	P/P	60 - 150
Fluridone	107	103	P/P	60 - 160
Hydrocodone	98.0	102	P/P	60 - 150
Ibuprofen	122	119	P/P	50 - 160
Imazapyr	82.1	97.1	P/P	50 - 150
Imidacloprid	95.2	101	P/P	60 - 150
Linuron	94.1	98.9	P/P	60 - 150
Mandestrobin	132	140	P/P	50 - 150
MCPP	96.1	94.7	P/P	50 - 150
Naproxen	71.9	84.1	P/P	50 - 160
Primidone	97.3	87.2	P/P	60 - 150
Pyraclostrobin	109	112	P/P	60 - 150
Thiamethoxam	104	105	P/P	50 - 150
Tolfenpyrad	105	114	P/P	60 - 150
Triclopyr	105	110	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A105953
Included Lab Sample IDs: 2251218

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	104	101	P/P	90 - 110
Calcium	105	100	P/P	90 - 110
Iron	104	98.7	P/P	90 - 110
Magnesium	102	97.4	P/P	90 - 110
Manganese	104	101	P/P	90 - 110
Potassium	102	97.1	P/P	90 - 110
Sodium	103	97.9	P/P	90 - 110
Zinc	101	99.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A105956
Included Lab Sample IDs: 2250896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.8	99.9	P/P	90 - 110
Sulfate	99.4	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106028

Included Lab Sample IDs: 2251218

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.7	97.2	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	96.6	96.2	P/P	90 - 110
Boron	99.8	97.6	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	96.6	97.3	P/P	90 - 110
Copper	97.6	97.6	P/P	90 - 110
Lead	109	109	P/P	90 - 110
Nickel	97.9	97.7	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Silver	98.1	98.9	P/P	90 - 110
Thallium	95.0	94.9	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						13.7	
EPA 200.7 Rev. 4.4	Barium	98.0	99.4	102	100			1.50
	Calcium	108	105	113	108			2.81
	Iron	106	106	110	107			2.15
	Magnesium	105	102	109	106			2.21
	Manganese	99.7	101	103	101			1.68
	Potassium	101	98.3	105	102			2.85
	Sodium	104	103	110	106			2.89
	Zinc	93.4	98.0	99.0	97.7			1.32
EPA 200.8 Rev. 5.4	Aluminum	99.4	98.1	93.7	96.8			3.19
	Antimony	102	104	99.7	101			0.851
	Arsenic	102	103	99.5	102			2.07
	Beryllium	92.4	95.5	89.3	94.0			5.13
	Boron	107	101	97.3	98.0			0.664
	Cadmium	103	104	102	103			0.698
	Chromium	99.7	101	97.6	98.5			0.968
	Copper	100	102	98.9	99.5			0.543
	Lead	110	111	108	110			2.05
	Nickel	99.6	101	97.3	97.7			0.352
	Selenium	103	103	98.2	99.4			1.20
	Silver	101	101	103	102			1.13
	Thallium	104	107	102	104			2.85
EPA 300.0 Rev. 2.1	Chloride	97.3	92.8	97.2			0.637	
	Sulfate	96.2	91.8	94.9			1.61	
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.0	99.3				1.32
EPA 8321B	2,4-D	113	119	109				8.58
	2,4,5-T	111	92.1	77.2				17.5
	Acesulfame K	94.1	84.9	81.4				3.94
	Acetaminophen	92.4	84.2	82.6				1.98
	Acetamiprid	84.1	66.2	66.9				0.967
	Afidopyropen	75.4	102	84.3				18.7
	AMPA	89.9	72.3	70.9				1.92
	Bentazon	96.7						6.97
	Benzovindiflupyr	97.0	95.7	91.9				4.07
	Carbamazepine	91.2	72.2	68.9				4.79
	Clothianidin	86.9	70.9	78.2				9.73
	Dinotefuran	94.2	90.2	94.5				4.61
	Diuron	78.3	52.4	51.7				1.23
	Endothall	88.2	93.1	103				10.5
	Fenuron	111	75.6	77.9				3.03
	Fluridone	82.3	75.7	77.2				1.97
	Glufosinate	104	105	95.8				8.87
	Glyphosate	104	99.6	90.0				8.49
	Hydrocodone	86.6	70.7	69.7				1.38
	Ibuprofen	77.1	79.6	76.3				4.25
	Imazapyr	96.0						4.99
	Imidacloprid	85.8	133	125				6.13
	Linuron	75.1	75.9	72.8				4.22
	Mandestrobin	109	129	113				13.8
	MCPP	116	102	104				1.87
	Naproxen	60.5	65.5	65.1				0.658
	Primidone	92.0	85.8	86.3				0.591
	Pyraclostrobin	72.8	77.3	75.8				1.87
	Sucralose	113	38.7	52.0				27.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Thiamethoxam	85.6	89.5 87.3			2.45
	Tolfenpyrad	61.4	57.1 54.5			4.69
	Triclopyr	108	88.0 83.7			4.98
SM 2120 B-2011	Color (true)	98.5			6.91	
SM 2320 B-2011	Total Alkalinity	99.8			0.360	
SM 2540 C-2011	TDS				4.29	
SM 4500 F-C-2011	Fluoride	99.5	99.1 98.4			0.506

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2250896
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2251218
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2251218
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2250896
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2250896
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2250898
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2250902
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2250902
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2250896
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2250896
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2250896
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2250896
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2250896

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	05/28/2021			05/28/2021 16:00	Sarah A Nixon	2250896
EPA 200.7 Rev. 4.4	05/28/2021	06/07/2021 14:20	Elliott D. Healy	06/08/2021 16:16	Betina Topolski	2251218
EPA 200.8 Rev. 5.4	05/28/2021	06/07/2021 14:20	Elliott D. Healy	06/11/2021 17:53	Alexander Thompson	2251218
EPA 300.0 Rev. 2.1	05/28/2021			06/09/2021 14:54	Lipi Saha	2250896
EPA 365.1 Rev. 2.0 dissolved	05/28/2021			05/28/2021 13:03	Lipi Saha	2250898
EPA 8321B	05/28/2021	06/01/2021 09:00	Hoor Shaik	06/02/2021 14:03	Juyoung Kim	2250902
	05/28/2021	06/02/2021 08:00	Juyoung Kim	06/02/2021 10:20	Juyoung Kim	2250902
	05/28/2021	06/02/2021 08:00	Juyoung Kim	06/02/2021 13:50	Pramila Ghimire	2250902
SM 2120 B-2011	05/28/2021			05/28/2021 17:19	Madeline Gruver	2250896
SM 2320 B-2011	05/28/2021			06/01/2021 19:22	Dale L. Simmons	2250896
SM 2540 C-2011	05/28/2021			06/01/2021 14:02	Yijie Li	2250896
SM 2540 D-2011	05/28/2021			06/01/2021 14:02	Yijie Li	2250896
SM 4500 F-C-2011	05/28/2021			06/01/2021 19:22	Dale L. Simmons	2250896