

Chemical Analysis Report

SO-DIST-2023-05-23-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2023 SMP: SO CO OH NO**
Request ID: **RQ-2023-05-15-28**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: William Mullen

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
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: 06-JUN-2023 09:22



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 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: CANAL AT PLANTATIONPKWY

Collection Date/Time: 05/22/2023 09:25

Field ID: G1SD0126

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2411822	EPA 8321B	2,4-D	0.0041	I	ug/L	P430297	
		Acesulfame K	0.10	U	ug/L	P430190	
		2,4,5-T	0.0040	U	ug/L	P430297	
		AMPA	10	U	ug/L	P430190	
		Acetaminophen	0.0080	U	ug/L	P430297	
		Acetamiprid	0.0020	U	ug/L	P430297	
		Endothall	0.25	U	ug/L	P430190	
		Glufosinate	10	U	ug/L	P430190	
		Glyphosate	10	U	ug/L	P430190	
		Afidopyropen	0.0020	U	ug/L	P430297	
		Bentazon	8.0E-04	U	ug/L	P430297	
		Sucralose	0.060		ug/L	P430190	
		Benzovindiflupyr	0.0020	U	ug/L	P430297	
		Carbamazepine	8.0E-04	U	ug/L	P430297	
		Clothianidin	0.0020	U	ug/L	P430297	
		Dinotefuran	0.0020	U	ug/L	P430297	
		Diuron	0.0020	U	ug/L	P430297	
		Fenuron	0.032	U	ug/L	P430297	
		Fluridone	8.0E-04	U	ug/L	P430297	
		Imazapyr	0.0040	U	ug/L	P430297	
		Hydrocodone	0.0020	U	ug/L	P430297	
		Ibuprofen	0.080	U	ug/L	P430297	
		Imidacloprid	0.0020	U	ug/L	P430297	
		Linuron	0.0040	U	ug/L	P430297	
		Mandestrobin	0.0020	U	ug/L	P430297	
		MCPP	0.0020	U	ug/L	P430297	
		Naproxen	0.0080	U	ug/L	P430297	
		Primidone	0.0040	U	ug/L	P430297	
		Pyraclostrobin	0.0020	U	ug/L	P430297	
		Silvex	0.0040	U	ug/L	P430297	
		Thiamethoxam	0.0020	U	ug/L	P430297	
		Tolfenpyrad	0.0020	U	ug/L	P430297	
		Triclopyr	0.0040	U	ug/L	P430297	

Ref. Method and Comment:

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

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: PORT OF THE ISLANDS MARINA

Collection Date/Time: 05/22/2023 10:05

Field ID: G1SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2411823	EPA 200.7 Rev. 4.4	Calcium	502		mg/L	P430551	
		Chromium	4.7	I	ug/L	P430551	
		Iron	120	U	ug/L	P430551	
		Magnesium	1.52E+03		mg/L	P430551	
		Strontium	8.94E+03		ug/L	P430551	
		Tin	300	U	ug/L	P430551	
		Titanium	3.0	U	ug/L	P430551	
	EPA 200.8 Rev. 5.4	Vanadium	8.0	U	ug/L	P430551	
		Zinc	20	U	ug/L	P430551	
		Aluminum	20	U	ug/L	P430551	
		Antimony	0.50	U	ug/L	P430551	
		Arsenic	2.9		ug/L	P430551	
		Beryllium	0.040	U	ug/L	P430551	
		Cadmium	0.20	U	ug/L	P430551	
		Cobalt	0.20	U	ug/L	P430551	
		Copper	9.9		ug/L	P430551	
		Lead	2.0	U	ug/L	P430551	
		Manganese	14.4		ug/L	P430551	
		Molybdenum	9.1		ug/L	P430551	
		Nickel	5.0	U	ug/L	P430551	
		Selenium	2.0	U	ug/L	P430551	
		Silver	0.050	U	ug/L	P430551	
		Thallium	1.0	U	ug/L	P430551	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 06/01/2023.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P430551

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P430551

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
Cadmium	0.020	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 8321B
Batch ID: P430190

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: P430297

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P430297

Component	Result	Code	Units
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Chromium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	101		P	85 - 115
Strontium	102		P	85 - 115
Tin	103		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.6		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	98.9		P	85 - 115
Beryllium	91.9		P	85 - 115
Cadmium	99.9		P	85 - 115
Cobalt	99.6		P	85 - 115
Copper	98.2		P	85 - 115
Lead	96.0		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	97.9		P	85 - 115
Nickel	97.6		P	85 - 115
Selenium	99.1		P	85 - 115
Silver	100		P	85 - 115
Thallium	95.6		P	85 - 115

Reference Method: EPA 8321B

Batch ID: P430190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	116		P	40 - 150
AMPA	103		P	40 - 150
Endothall	146		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	114		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P430297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.2		P	40 - 150
2,4,5-T	86.6		P	40 - 150
Acetaminophen	81.4		P	30 - 150
Acetamiprid	87.3		P	40 - 150
Afidopyropen	62.5		P	30 - 150
Bentazon	107		P	30 - 150
Benzovindiflupyr	86.4		P	40 - 150
Carbamazepine	82.8		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P430297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Clothianidin	96.1		P	40 - 150
Dinotefuran	93.3		P	40 - 150
Diuron	75.7		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	91.2		P	40 - 150
Hydrocodone	86.7		P	40 - 150
Ibuprofen	92.5		P	40 - 150
Imazapyr	96.8		P	40 - 150
Imidacloprid	90.9		P	40 - 150
Linuron	86.6		P	40 - 150
Mandestrobin	78.9		P	40 - 150
MCPP	97.5		P	40 - 150
Naproxen	78.1		P	40 - 150
Primidone	84.4		P	40 - 150
Pyraclostrobin	82.1		P	40 - 150
Silvex	96.6		P	40 - 150
Thiamethoxam	98.2		P	40 - 150
Tolfenpyrad	66.4		P	30 - 150
Triclopyr	80.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412178	Chromium	96.7	99.1	P/P	70 - 130
2412178	Iron	104	105	P/P	70 - 130
2412178	Tin	76.8	78.0	P/P	70 - 130
2412178	Titanium	105	108	P/P	70 - 130
2412178	Vanadium	98.3	103	P/P	70 - 130
2412178	Zinc	96.4	97.8	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412178	Aluminum	106	108	P/P	70 - 130
2412178	Antimony	104	105	P/P	70 - 130
2412178	Arsenic	111	111	P/P	70 - 130
2412178	Beryllium	98.1	97.6	P/P	70 - 130
2412178	Cadmium	95.5	97.1	P/P	70 - 130
2412178	Cobalt	97.9	98.4	P/P	70 - 130
2412178	Copper	92.8	93.5	P/P	70 - 130
2412178	Lead	104	104	P/P	70 - 130
2412178	Manganese	90.5	88.9	P/P	70 - 130
2412178	Molybdenum	115	115	P/P	70 - 130
2412178	Nickel	94.4	94.5	P/P	70 - 130
2412178	Selenium	100	101	P/P	70 - 130
2412178	Silver	92.7	91.1	P/P	70 - 130
2412178	Thallium	100	103	P/P	70 - 130

Reference Method: EPA 8321B

Batch ID: P430190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411694	Acesulfame K	102	101	P/P	40 - 150
2411694	AMPA	75.9	75.3	P/P	40 - 150
2411694	Endothall	146	149	P/P	40 - 150
2411694	Glufosinate	60.2	65.4	P/P	40 - 150
2411694	Glyphosate	66.9	64.4	P/P	40 - 150
2411694	Sucralose	117	111	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P430297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411341	2,4-D	100	89.0	P/P	40 - 150
2411341	2,4,5-T	102	99.0	P/P	40 - 150
2411341	Acetaminophen	102	90.6	P/P	30 - 150
2411341	Acetamiprid	80.5	72.8	P/P	40 - 150
2411341	Afidopyrophen	87.0	72.9	P/P	30 - 150
2411341	Benzovindiflupyr	90.1	87.0	P/P	40 - 150
2411341	Carbamazepine	74.9	69.4	P/P	40 - 150
2411341	Clothianidin	104	101	P/P	40 - 150
2411341	Dinotefuran	82.5	77.1	P/P	40 - 150
2411341	Diuron	72.3	70.7	P/P	40 - 150
2411341	Fenuron	74.6	67.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P430297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2411341	Fluridone	92.5	83.1	P/P	40 - 150
2411341	Hydrocodone	75.2	68.8	P/P	40 - 150
2411341	Ibuprofen	82.8	84.4	P/P	40 - 150
2411341	Imazapyr	98.7	87.8	P/P	40 - 150
2411341	Linuron	76.7	76.1	P/P	40 - 150
2411341	Mandestrobin	86.0	84.9	P/P	40 - 150
2411341	MCPP	96.8	97.7	P/P	40 - 150
2411341	Naproxen	80.6	79.7	P/P	40 - 150
2411341	Primidone	102	93.4	P/P	40 - 150
2411341	Pyraclostrobin	94.9	88.8	P/P	40 - 150
2411341	Silvex	87.6	81.4	P/P	40 - 150
2411341	Thiamethoxam	110	103	P/P	40 - 150
2411341	Tolfenpyrad	65.3	61.1	P/P	30 - 150
2411341	Triclopyr	94.0	88.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412178	Calcium	1.38	Spike	P	0 - 20
2412178	Chromium	2.51	Spike	P	0 - 20
2412178	Iron	0.632	Spike	P	0 - 20
2412178	Magnesium	2.48	Spike	P	0 - 20
2412178	Strontium	1.19	Spike	P	0 - 20
2412178	Tin	1.52	Spike	P	0 - 20
2412178	Titanium	3.02	Spike	P	0 - 20
2412178	Vanadium	4.28	Spike	P	0 - 20
2412178	Zinc	1.44	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412178	Aluminum	1.68	Spike	P	0 - 20
2412178	Antimony	0.454	Spike	P	0 - 20
2412178	Arsenic	0.667	Spike	P	0 - 20
2412178	Beryllium	0.501	Spike	P	0 - 20
2412178	Cadmium	1.60	Spike	P	0 - 20
2412178	Cobalt	0.522	Spike	P	0 - 20
2412178	Copper	0.682	Spike	P	0 - 20
2412178	Lead	0.402	Spike	P	0 - 20
2412178	Manganese	1.60	Spike	P	0 - 20
2412178	Molybdenum	0.256	Spike	P	0 - 20
2412178	Nickel	0.0814	Spike	P	0 - 20
2412178	Selenium	0.529	Spike	P	0 - 20
2412178	Silver	1.77	Spike	P	0 - 20
2412178	Thallium	2.67	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P430190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411694	Acesulfame K	0.681	Spike	P	0 - 30
2411694	AMPA	0.788	Spike	P	0 - 30
2411694	Endothall	2.18	Spike	P	0 - 30
2411694	Glufosinate	8.27	Spike	P	0 - 30
2411694	Glyphosate	3.86	Spike	P	0 - 30
2411694	Sucralose	4.39	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P430297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411341	2,4-D	10.8	Spike	P	0 - 30
2411341	2,4,5-T	2.57	Spike	P	0 - 30
2411341	Acetaminophen	11.9	Spike	P	0 - 30
2411341	Acetamiprid	10.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P430297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2411341	Afidopyropen	17.7	Spike	P	0 - 30
2411341	Bentazon	11.0	Spike	P	0 - 30
2411341	Benzovindiflupyr	3.36	Spike	P	0 - 30
2411341	Carbamazepine	7.69	Spike	P	0 - 30
2411341	Clothianidin	2.01	Spike	P	0 - 30
2411341	Dinotefuran	6.78	Spike	P	0 - 30
2411341	Diuron	2.09	Spike	P	0 - 30
2411341	Fenuron	10.8	Spike	P	0 - 30
2411341	Fluridone	7.22	Spike	P	0 - 30
2411341	Hydrocodone	8.82	Spike	P	0 - 30
2411341	Ibuprofen	1.92	Spike	P	0 - 30
2411341	Imazapyr	11.7	Spike	P	0 - 30
2411341	Imidacloprid	5.88	Spike	P	0 - 30
2411341	Linuron	0.788	Spike	P	0 - 30
2411341	Mandestrobin	1.26	Spike	P	0 - 30
2411341	MCPP	0.925	Spike	P	0 - 30
2411341	Naproxen	1.16	Spike	P	0 - 30
2411341	Primidone	9.09	Spike	P	0 - 30
2411341	Pyraclostrobin	6.64	Spike	P	0 - 30
2411341	Silvex	7.31	Spike	P	0 - 30
2411341	Thiamethoxam	6.13	Spike	P	0 - 30
2411341	Tolfenpyrad	6.71	Spike	P	0 - 30
2411341	Triclopyr	5.66	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2411822
Field Sample ID: G1SD0126

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.2	P	30 - 160
EPA 8321B	Diuron-d6	71.5	P	30 - 160
EPA 8321B	Endothall-d6	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	56.8	P	30 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Sucralose-d6	72.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A119438
Included Lab Sample IDs: 2411822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	99.7	P/P	50 - 150
2,4,5-T	106	94.0	P/P	50 - 150
Acetaminophen	88.0	86.9	P/P	60 - 160
Acetamiprid	113	112	P/P	50 - 150
Afidopyropen	83.1	86.4	P/P	50 - 150
Bentazon	94.8	126	P/P	50 - 160
Benzovindiflupyr	102	104	P/P	50 - 150
Carbamazepine	110	107	P/P	60 - 150
Clothianidin	106	108	P/P	60 - 150
Dinotefuran	110	111	P/P	50 - 150
Diuron	102	102	P/P	60 - 160
Fenuron	110	111	P/P	60 - 150
Fluridone	118	120	P/P	60 - 160
Hydrocodone	117	109	P/P	60 - 150
Ibuprofen	130	98.6	P/P	50 - 160
Imazapyr	114	117	P/P	50 - 150
Imidacloprid	104	104	P/P	60 - 150
Linuron	108	121	P/P	60 - 150
Mandestrobin	105	107	P/P	50 - 150
MCPP	109	110	P/P	50 - 150
Naproxen	78.4	113	P/P	50 - 160
Primidone	103	106	P/P	60 - 150
Pyraclostrobin	114	110	P/P	60 - 150
Silvex	82.2	90.9	P/P	50 - 150
Thiamethoxam	118	116	P/P	50 - 150
Tolfenpyrad	112	105	P/P	60 - 150
Triclopyr	84.1	87.1	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A119443
Included Lab Sample IDs: 2411822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	102	P/P	60 - 160
Endothall	156	148	P/P	60 - 160
Glufosinate	105	99.8	P/P	60 - 160
Glyphosate	91.2	99.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A119444
Included Lab Sample IDs: 2411822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	145	145	P/P	60 - 160
Sucralose	99.8	111	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A119501
Included Lab Sample IDs: 2411823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119501

Included Lab Sample IDs: 2411823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.9	99.5	P/P	90 - 110
Antimony	99.3	98.9	P/P	90 - 110
Arsenic	99.2	100	P/P	90 - 110
Beryllium	101	103	P/P	90 - 110
Cadmium	98.2	97.4	P/P	90 - 110
Cobalt	100	100	P/P	90 - 110
Copper	97.7	98.3	P/P	90 - 110
Lead	94.0	93.1	P/P	90 - 110
Manganese	102	99.6	P/P	90 - 110
Molybdenum	97.5	97.4	P/P	90 - 110
Nickel	98.4	99.0	P/P	90 - 110
Selenium	98.0	97.6	P/P	90 - 110
Thallium	96.7	95.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119529

Included Lab Sample IDs: 2411823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	102	P/P	90 - 110
Chromium	98.9	101	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Strontium	101	100	P/P	90 - 110
Tin	101	102	P/P	90 - 110
Titanium	101	102	P/P	90 - 110
Vanadium	100	101	P/P	90 - 110
Zinc	98.4	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119532

Included Lab Sample IDs: 2411823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	100	100	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		Precision SMP	MS
			LCS			
EPA 200.7 Rev. 4.4	Calcium	101				1.38
	Chromium	102	96.7	99.1		2.51
	Iron	104	104	105		0.632
	Magnesium	101				2.48
	Strontium	102				1.19
	Tin	103	76.8	78.0		1.52
	Titanium	104	105	108		3.02
	Vanadium	103	98.3	103		4.28
	Zinc	102	96.4	97.8		1.44
EPA 200.8 Rev. 5.4	Aluminum	98.6	106	108		1.68
	Antimony	101	104	105		0.454
	Arsenic	98.9	111	111		0.667
	Beryllium	91.9	98.1	97.6		0.501
	Cadmium	99.9	95.5	97.1		1.60
	Cobalt	99.6	97.9	98.4		0.522
	Copper	98.2	92.8	93.5		0.682
	Lead	96.0	104	104		0.402
	Manganese	101	90.5	88.9		1.60
	Molybdenum	97.9	115	115		0.256
	Nickel	97.6	94.4	94.5		0.0814
	Selenium	99.1	100	101		0.529
	Silver	100	92.7	91.1		1.77
	Thallium	95.6	100	103		2.67
	2,4-D	94.2	100	89.0		10.8
	2,4,5-T	86.6	102	99.0		2.57
	Acesulfame K	116	102	101		0.681
EPA 8321B	Acetaminophen	81.4	102	90.6		11.9
	Acetamiprid	87.3	80.5	72.8		10.1
	Afidopyropen	62.5	87.0	72.9		17.7
	AMPA	103	75.9	75.3		0.788
	Bentazon	107				11.0
	Benzovindiflupyr	86.4	90.1	87.0		3.36
	Carbamazepine	82.8	74.9	69.4		7.69
	Clothianidin	96.1	104	101		2.01
	Dinotefuran	93.3	82.5	77.1		6.78
	Diuron	75.7	72.3	70.7		2.09
	Endothall	146	146	149		2.18
	Fenuron	93.5	74.6	67.0		10.8
	Fluridone	91.2	92.5	83.1		7.22
	Glufosinate	104	60.2	65.4		8.27
	Glyphosate	101	66.9	64.4		3.86
	Hydrocodone	86.7	75.2	68.8		8.82
	Ibuprofen	92.5	82.8	84.4		1.92
	Imazapyr	96.8	98.7	87.8		11.7
	Imidacloprid	90.9				5.88
	Linuron	86.6	76.7	76.1		0.788
	Mandestrobin	78.9	86.0	84.9		1.26
	MCPP	97.5	96.8	97.7		0.925
	Naproxen	78.1	80.6	79.7		1.16
	Primidone	84.4	102	93.4		9.09
	Pyraclostrobin	82.1	94.9	88.8		6.64
	Silvex	96.6	87.6	81.4		7.31
	Sucralose	114	117	111		4.39
	Thiamethoxam	98.2	110	103		6.13

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision		MS
						SMP		
EPA 8321B	Tolfenpyrad	66.4	65.3	61.1				6.71
	Triclopyr	80.4	94.0	88.8				5.66

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2411823
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2411823
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2411822

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	05/23/2023	05/30/2023 11:35	George D Taylor	06/02/2023 02:00	McKinley C Carter	2411823
	05/23/2023	05/30/2023 11:35	George D Taylor	06/02/2023 02:08	McKinley C Carter	2411823
EPA 200.8 Rev. 5.4	05/23/2023	05/30/2023 11:35	George D Taylor	06/01/2023 00:04	Emily M Philpot	2411823
	05/23/2023	05/30/2023 11:35	George D Taylor	06/01/2023 01:21	Emily M Philpot	2411823
	05/23/2023	05/30/2023 11:35	George D Taylor	06/01/2023 19:09	Emily M Philpot	2411823
	05/23/2023	05/30/2023 11:35	George D Taylor	06/01/2023 19:09	Emily M Philpot	2411823
EPA 8321B	05/23/2023	05/24/2023 12:00	Touraj Touran	05/24/2023 14:56	Touraj Touran	2411822
	05/23/2023	05/24/2023 12:00	Touraj Touran	05/24/2023 19:44	Touraj Touran	2411822
	05/23/2023	05/24/2023 12:00	Touraj Touran	05/25/2023 02:42	Touraj Touran	2411822
	05/23/2023	05/25/2023 09:00	Hoor Shaik	05/26/2023 14:28	Juyoung Kim	2411822