

Chemical Analysis Report

SO-DIST-2023-09-06-04

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

Event Description: **2023 SMP : Lee Branch**
Request ID: **RQ-2023-09-04-44**
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: Nicole Reistad

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 21-SEP-2023 09:57



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: LEEBRANCHATRAILROAD

Collection Date/Time: 09/05/2023 09:50

Field ID: G3SD0212

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2434448	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P434626	
	SM 2320 B-2011	Total Alkalinity	107		mg CaCO3/L	P434707	
	SM 2540 D-2015	TSS	4	I	mg/L	P435047	
	SM 4500-F- C-2011	Fluoride	0.41		mg F/L	P434710	
2434449	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P434684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P434951	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.090		mg N/L	P435087	
	EPA 365.1 Rev. 2.0	Total-P	0.62		mg P/L	P434704	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P434971	
2434462	EPA 8321B	2,4-D	0.0053	I	ug/L	P434679	
		Acesulfame K	0.10	U	ug/L	P434699	MS
		2,4,5-T	0.0040	U	ug/L	P434679	
		AMPA	0.22	I	ug/L	P434699	
		Acetaminophen	0.011	I	ug/L	P434679	
		Endothall	0.25	U	ug/L	P434699	
		Acetamiprid	0.0020	U	ug/L	P434679	MS, RPD
		Glufosinate	0.10	U	ug/L	P434699	
		Glyphosate	0.28	I	ug/L	P434699	
		Afidopyropen	0.0020	U	ug/L	P434679	MS, RPD
		Bentazon	8.0E-04	U	ug/L	P434679	
		Sucralose	0.10		ug/L	P434699	
		Benzovindiflupyr	0.0020	U	ug/L	P434679	
		Carbamazepine	8.0E-04	U	ug/L	P434679	
		Clothianidin	0.0020	U	ug/L	P434679	
		Dinotefuran	0.0020	U	ug/L	P434679	
		Diuron	0.0022	I	ug/L	P434679	
		Fenuron	0.032	U	ug/L	P434679	
		Fluridone	8.0E-04	U	ug/L	P434679	
		Imazapyr	0.025		ug/L	P434679	
		Hydrocodone	0.0020	U	ug/L	P434679	
		Ibuprofen	0.080	U	ug/L	P434679	
		Imidacloprid	0.0093		ug/L	P434679	
		Linuron	0.0040	U	ug/L	P434679	
		Mandestrobin	0.0020	U	ug/L	P434679	
		MCPP	0.0020	U	ug/L	P434679	
		Naproxen	0.0080	U	ug/L	P434679	
		Primidone	0.0040	U	ug/L	P434679	
		Pyraclostrobin	0.0020	U	ug/L	P434679	
		Silvex	0.0040	U	ug/L	P434679	
		Thiamethoxam	0.0020	U	ug/L	P434679	
		Tolfenpyrad	0.0020	U	ug/L	P434679	
		Triclopyr	0.0040	U	ug/L	P434679	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: FB

Collection Date/Time: 09/05/2023 09:55

Field ID: FB_09052023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2434450	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P434626	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P434915	
	SM 2540 D-2015	TSS	2	U	mg/L	P435047	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P434710	
2434451	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P434789	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P434951	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P435087	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P434851	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P434971	
2434463	EPA 8321B	2,4-D	0.0020	U	ug/L	P434679	
		Acesulfame K	0.10	U	ug/L	P434699	MS
		2,4,5-T	0.0040	U	ug/L	P434679	
		AMPA	0.10	U	ug/L	P434699	
		Acetaminophen	0.0080	U	ug/L	P434679	
		Endothall	0.25	U	ug/L	P434699	
		Acetamiprid	0.0020	U	ug/L	P434679	MS, RPD
		Glufosinate	0.10	U	ug/L	P434699	
		Glyphosate	0.10	U	ug/L	P434699	
		Afidopyropen	0.0020	U	ug/L	P434679	MS, RPD
		Bentazon	8.0E-04	U	ug/L	P434679	
		Sucralose	0.010	U	ug/L	P434699	
		Benzovindiflupyr	0.0020	U	ug/L	P434679	
		Carbamazepine	8.0E-04	U	ug/L	P434679	
		Clothianidin	0.0020	U	ug/L	P434679	
		Dinotefuran	0.0020	U	ug/L	P434679	
		Diuron	0.0020	U	ug/L	P434679	
		Fenuron	0.032	U	ug/L	P434679	
		Fluridone	8.0E-04	U	ug/L	P434679	
		Imazapyr	0.0040	U	ug/L	P434679	
		Hydrocodone	0.0020	U	ug/L	P434679	
		Ibuprofen	0.080	U	ug/L	P434679	
		Imidacloprid	0.0020	U	ug/L	P434679	
		Linuron	0.0040	U	ug/L	P434679	
		Mandestrobin	0.0020	U	ug/L	P434679	
		MCP	0.0020	U	ug/L	P434679	
		Naproxen	0.0080	U	ug/L	P434679	
		Primidone	0.0040	U	ug/L	P434679	
		Pyraclostrobin	0.0020	U	ug/L	P434679	
		Silvex	0.0040	U	ug/L	P434679	
		Thiamethoxam	0.0020	U	ug/L	P434679	
		Tolfenpyrad	0.0020	U	ug/L	P434679	
		Triclopyr	0.0040	U	ug/L	P434679	

Field ID: FB_09052023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 5310 B-2011: The result was confirmed on 09/15/2023.
EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434626

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434684

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434789

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434951

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435087

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434704

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434851

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

Reference Method: EPA 8321B
Batch ID: P434679

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P434679

Component	Result	Code	Units
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

Reference Method: EPA 8321B

Batch ID: P434699

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 2320 B-2011

Batch ID: P434707

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

Reference Method: SM 2320 B-2011

Batch ID: P434915

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

Reference Method: SM 2540 D-2015

Batch ID: P435047

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P434710

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P434971

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434626

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434789

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434951

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434704

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P434679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.9		P	40 - 150
2,4,5-T	86.5		P	40 - 150
Acetaminophen	74.2		P	30 - 150
Acetamiprid	95.2		P	40 - 150
Afidopyropen	95.8		P	30 - 150
Bentazon	102		P	30 - 150
Benzovindiflupyr	89.1		P	40 - 150
Carbamazepine	91.5		P	40 - 150
Clothianidin	101		P	40 - 150
Dinotefuran	103		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P434679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	86.0		P	40 - 150
Fenuron	99.3		P	40 - 150
Fluridone	92.3		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	86.8		P	40 - 150
Imazapyr	88.6		P	40 - 150
Imidacloprid	92.5		P	40 - 150
Linuron	89.0		P	40 - 150
Mandestrobin	109		P	40 - 150
MCPP	98.2		P	40 - 150
Naproxen	72.7		P	40 - 150
Primidone	96.4		P	40 - 150
Pyraclostrobin	89.3		P	40 - 150
Silvex	90.7		P	40 - 150
Thiamethoxam	99.5		P	40 - 150
Tolfenpyrad	55.0		P	30 - 150
Triclopyr	91.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P434699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	114		P	40 - 150
AMPA	128		P	40 - 150
Endothall	113		P	40 - 150
Glufosinate	99.5		P	40 - 150
Glyphosate	88.7		P	40 - 150
Sucralose	114		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P434707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.8		P	92 - 105

Reference Method: SM 2320 B-2011
Batch ID: P434915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	92 - 105

Reference Method: SM 2540 D-2015
Batch ID: P435047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	100		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P434971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434214	Ammonia-N	97.2	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434626	Ammonia-N	98.0	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434449	Kjeldahl Nitrogen	93.0	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434444	NO2NO3-N	94.5	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434388	Total-P	97.3	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2435504	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P434679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434123	2,4,5-T	110	127	P/P	40 - 150
2434123	Acetaminophen	80.3	81.9	P/P	30 - 150
2434123	Acetamiprid	15.3	48.3	F/P	40 - 150
2434123	Afidopyropen	22.2	55.3	F/P	30 - 150
2434123	Bentazon	47.8	47.7	P/P	30 - 150
2434123	Benzovindiflupyr	78.9	78.2	P/P	40 - 150
2434123	Carbamazepine	53.3	54.0	P/P	40 - 150
2434123	Clothianidin	90.2	93.4	P/P	40 - 150
2434123	Dinotefuran	69.9	72.5	P/P	40 - 150
2434123	Diuron	41.6	46.3	P/P	40 - 150
2434123	Fenuron	54.0	54.7	P/P	40 - 150
2434123	Fluridone	41.6	45.0	P/P	40 - 150
2434123	Hydrocodone	67.2	66.7	P/P	40 - 150
2434123	Ibuprofen	60.7	60.8	P/P	40 - 150
2434123	Imazapyr	79.2	78.7	P/P	40 - 150
2434123	Imidacloprid	110	115	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P434679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434123	Linuron	51.7	53.7	P/P	40 - 150
2434123	Mandestrobin	61.4	70.1	P/P	40 - 150
2434123	MCPP	118	121	P/P	40 - 150
2434123	Naproxen	81.6	91.5	P/P	40 - 150
2434123	Primidone	83.2	88.2	P/P	40 - 150
2434123	Pyraclostrobin	74.4	76.3	P/P	40 - 150
2434123	Silvex	111	116	P/P	40 - 150
2434123	Thiamethoxam	77.9	81.8	P/P	40 - 150
2434123	Tolfenpyrad	60.1	52.7	P/P	30 - 150
2434123	Triclopyr	113	124	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P434699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434123	Acesulfame K	152	155	F/F	40 - 150
2434123	AMPA	85.3	82.7	P/P	40 - 150
2434123	Endothall	134	134	P/P	40 - 150
2434123	Glufosinate	107	116	P/P	40 - 150
2434123	Glyphosate	132	130	P/P	40 - 150
2434123	Sucralose	123	122	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434064	Fluoride	99.2	99.8	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434601	Organic Carbon	95.0	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434379	Turbidity	8.28	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434214	Ammonia-N	1.26	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434626	Ammonia-N	0.147	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434449	Kjeldahl Nitrogen	5.51	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P435087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434444	NO2NO3-N	1.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434388	Total-P	0.370	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2435504	Total-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P434679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434123	2,4-D	4.83	Spike	P	0 - 30
2434123	2,4,5-T	14.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P434679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434123	Acetaminophen	1.92	Spike	P	0 - 30
2434123	Acetamiprid	104	Spike	F	0 - 30
2434123	Afidopyropen	85.4	Spike	F	0 - 30
2434123	Bentazon	0.199	Spike	P	0 - 30
2434123	Benzovindiflupyr	0.923	Spike	P	0 - 30
2434123	Carbamazepine	1.43	Spike	P	0 - 30
2434123	Clothianidin	3.50	Spike	P	0 - 30
2434123	Dinotefuran	3.64	Spike	P	0 - 30
2434123	Diuron	7.56	Spike	P	0 - 30
2434123	Fenuron	1.33	Spike	P	0 - 30
2434123	Fluridone	7.77	Spike	P	0 - 30
2434123	Hydrocodone	0.744	Spike	P	0 - 30
2434123	Ibuprofen	0.143	Spike	P	0 - 30
2434123	Imazapyr	0.565	Spike	P	0 - 30
2434123	Imidacloprid	3.76	Spike	P	0 - 30
2434123	Linuron	3.77	Spike	P	0 - 30
2434123	Mandestrobin	13.2	Spike	P	0 - 30
2434123	MCPP	1.79	Spike	P	0 - 30
2434123	Naproxen	11.4	Spike	P	0 - 30
2434123	Primidone	5.88	Spike	P	0 - 30
2434123	Pyraclostrobin	2.45	Spike	P	0 - 30
2434123	Silvex	4.83	Spike	P	0 - 30
2434123	Thiamethoxam	4.93	Spike	P	0 - 30
2434123	Tolfenpyrad	13.1	Spike	P	0 - 30
2434123	Triclopyr	9.38	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P434699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434123	Acesulfame K	1.90	Spike	P	0 - 30
2434123	AMPA	2.75	Spike	P	0 - 30
2434123	Endothall	0.0181	Spike	P	0 - 30
2434123	Glufosinate	8.36	Spike	P	0 - 30
2434123	Glyphosate	1.18	Spike	P	0 - 30
2434123	Sucralose	0.398	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P434707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434064	Total Alkalinity	1.79	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P434915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434794	Total Alkalinity	0.783	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434064	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P434971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434601	Organic Carbon	0.518	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2434462

Field Sample ID: G3SD0212

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	61.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	42.7	P	30 - 160
EPA 8321B	Diuron-d6	31.5	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	52.0	P	30 - 160
EPA 8321B	Primidone-d5	50.8	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Lab Sample ID: 2434463

Field Sample ID: FB_09052023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	66.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.1	P	30 - 160
EPA 8321B	Diuron-d6	67.7	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	30 - 160
EPA 8321B	Ibuprofen-d3	72.3	P	30 - 160
EPA 8321B	Primidone-d5	88.0	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121379

Included Lab Sample IDs: 2434448, 2434450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	97.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121407

Included Lab Sample IDs: 2434449

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

Reference Method: SM 2320 B-2011

Run ID: A121417

Included Lab Sample IDs: 2434448

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.9	99.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121417

Included Lab Sample IDs: 2434448, 2434450

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

Reference Method: EPA 8321B

Run ID: A121442

Included Lab Sample IDs: 2434462, 2434463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.8	92.5	P/P	50 - 150
2,4,5-T	92.1	89.7	P/P	50 - 150
Acetaminophen	86.1	86.2	P/P	60 - 160
Acetamiprid	111	110	P/P	50 - 150
Afidopyropen	103	106	P/P	50 - 150
Bentazon	116	115	P/P	50 - 160
Benzovindiflupyr	103	102	P/P	50 - 150
Carbamazepine	104	106	P/P	60 - 150
Clothianidin	105	99.3	P/P	60 - 150
Dinotefuran	109	113	P/P	50 - 150
Diuron	105	108	P/P	60 - 160
Fenuron	107	106	P/P	60 - 150
Fluridone	106	100	P/P	60 - 160
Hydrocodone	114	114	P/P	60 - 150
Ibuprofen	89.0	106	P/P	50 - 160
Imazapyr	93.7	91.1	P/P	50 - 150
Imidacloprid	99.8	99.1	P/P	60 - 150
Linuron	102	106	P/P	60 - 150
Mandestrobin	127	129	P/P	50 - 150
MCPP	94.9	91.5	P/P	50 - 150
Naproxen	110	100	P/P	50 - 160
Primidone	98.7	104	P/P	60 - 150
Pyraclostrobin	111	113	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A121442

Included Lab Sample IDs: 2434462, 2434463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silvex	85.4	88.5	P/P	50 - 150
Thiamethoxam	107	110	P/P	50 - 150
Tolfenpyrad	105	104	P/P	60 - 150
Triclopyr	82.3	95.9	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121450

Included Lab Sample IDs: 2434449

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121452

Included Lab Sample IDs: 2434451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A121456

Included Lab Sample IDs: 2434462, 2434463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	117	133	P/P	60 - 160
Sucralose	122	122	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A121466

Included Lab Sample IDs: 2434462, 2434463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.5	92.5	P/P	60 - 160
Endothall	127	114	P/P	60 - 160
Glufosinate	99.4	98.3	P/P	60 - 160
Glyphosate	84.9	88.1	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A121501

Included Lab Sample IDs: 2434450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121508

Included Lab Sample IDs: 2434451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.8	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A121525

Included Lab Sample IDs: 2434449, 2434451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A121570

Included Lab Sample IDs: 2434449, 2434451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	95.5	P/P	90 - 110
NO2NO3-N	98.5	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121605

Included Lab Sample IDs: 2434449, 2434451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	102	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity	101				8.28	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	97.2	99.2			1.26
	Ammonia-N	97.4	98.0	97.8			0.147
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	93.0	103			5.51
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.5	94.5	95.5			1.05
EPA 365.1 Rev. 2.0	Total-P	106	97.3	97.8			0.370
	Total-P	108	102	102			0.0
EPA 8321B	2,4-D	97.9					4.83
	2,4,5-T	86.5	110	127			14.6
	Acesulfame K	114	152	155			1.90
	Acetaminophen	74.2	80.3	81.9			1.92
	Acetamiprid	95.2	15.3	48.3			104
	Afidopyropen	95.8	22.2	55.3			85.4
	AMPA	128	85.3	82.7			2.75
	Bentazon	102	47.8	47.7			0.199
	Benzovindiflupyr	89.1	78.9	78.2			0.923
	Carbamazepine	91.5	53.3	54.0			1.43
	Clothianidin	101	90.2	93.4			3.50
	Dinotefuran	103	69.9	72.5			3.64
	Diuron	86.0	41.6	46.3			7.56
	Endothall	113	134	134			0.0181
	Fenuron	99.3	54.0	54.7			1.33
	Fluridone	92.3	41.6	45.0			7.77
	Glufosinate	99.5	107	116			8.36
	Glyphosate	88.7	132	130			1.18
	Hydrocodone	102	67.2	66.7			0.744
	Ibuprofen	86.8	60.7	60.8			0.143
	Imazapyr	88.6	79.2	78.7			0.565
	Imidacloprid	92.5	110	115			3.76
	Linuron	89.0	51.7	53.7			3.77
	Mandestrobin	109	61.4	70.1			13.2
	MCPP	98.2	118	121			1.79
	Naproxen	72.7	81.6	91.5			11.4
	Primidone	96.4	83.2	88.2			5.88
	Pyraclostrobin	89.3	74.4	76.3			2.45
	Silvex	90.7	111	116			4.83
	Sucralose	114	123	122			0.398
	Thiamethoxam	99.5	77.9	81.8			4.93
	Tolfenpyrad	55.0	60.1	52.7			13.1
	Triclopyr	91.6	113	124			9.38
SM 2320 B-2011	Total Alkalinity	95.8				1.79	
	Total Alkalinity	98.2				0.783	
SM 2540 D-2015	TSS	100					
SM 4500-F- C-2011	Fluoride	98.3	99.2	99.8			0.480
SM 5310 B-2011	Organic Carbon	95.0	95.0	96.0			0.518

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2434448, 2434450
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2434449, 2434451
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2434449, 2434451
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2434449, 2434451

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2434449, 2434451
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2434462, 2434463
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2434448, 2434450
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2434448, 2434450
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2434448, 2434450
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2434449, 2434451

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	09/06/2023			09/06/2023 15:37	Khloe J Berg	2434448
	09/06/2023			09/06/2023 15:38	Khloe J Berg	2434450
EPA 350.1 Rev. 2.0	09/06/2023			09/07/2023 12:53	Khloe J Berg	2434449
	09/06/2023			09/11/2023 13:22	Khloe J Berg	2434451
EPA 351.2 Rev. 2.0	09/06/2023	09/14/2023 15:31	Simonne.V. Calhoun	09/18/2023 15:45	Samantha L Bates	2434449
	09/06/2023	09/14/2023 15:31	Simonne.V. Calhoun	09/18/2023 15:50	Samantha L Bates	2434451
EPA 353.2 Rev. 2.0	09/06/2023			09/13/2023 14:41	Anna M. Plaviak	2434449
	09/06/2023			09/13/2023 15:51	Anna M. Plaviak	2434451
EPA 365.1 Rev. 2.0	09/06/2023	09/08/2023 15:16	Adam P Silver	09/11/2023 11:45	Chandler E Cox	2434449
	09/06/2023	09/12/2023 17:58	Adam P Silver	09/13/2023 15:23	Simonne.V. Calhoun	2434451
EPA 8321B	09/06/2023	09/08/2023 10:00	Tae K Lee	09/08/2023 17:34	Hana Lee	2434462
	09/06/2023	09/08/2023 10:00	Tae K Lee	09/08/2023 17:49	Hana Lee	2434463
	09/06/2023	09/08/2023 10:00	Tae K Lee	09/11/2023 15:56	Hana Lee	2434462
	09/06/2023	09/08/2023 10:00	Tae K Lee	09/11/2023 16:09	Hana Lee	2434463
	09/06/2023	09/08/2023 15:45	Hoor Shaik	09/08/2023 19:18	Juyoung Kim	2434462
	09/06/2023	09/08/2023 15:45	Hoor Shaik	09/08/2023 19:36	Juyoung Kim	2434463
SM 2320 B-2011	09/06/2023			09/07/2023 23:36	Dale L. Simmons	2434448
	09/06/2023			09/13/2023 07:19	Dale L. Simmons	2434450
SM 2540 D-2015	09/06/2023			09/11/2023 15:46	Yijie Li	2434448, 2434450
SM 4500-F- C-2011	09/06/2023			09/07/2023 23:01	Dale L. Simmons	2434450
	09/06/2023			09/07/2023 23:36	Dale L. Simmons	2434448
SM 5310 B-2011	09/06/2023			09/13/2023 18:47	Elise M. Gillis	2434449
	09/06/2023			09/13/2023 19:01	Elise M. Gillis	2434451