

Chemical Analysis Report

CEN-DIST-2021-09-22-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

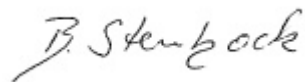
Event Description: **Lake Condel**
Request ID: **RQ-2021-09-13-57**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 01-OCT-2021 16:57



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 group are included in this report: 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: Lake Condel @ Center

Collection Date/Time: 09/21/2021 10:20

Field ID: G4CE0177

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277457	EPA 8321B	2,4-D	0.69		ug/L	P404055	
		Acesulfame K	0.15	I	ug/L	P404050	
		2,4,5-T	0.0040	U	ug/L	P404055	
		AMPA	0.57		ug/L	P404050	
		Acetaminophen	0.0080	U	ug/L	P404055	
		Acetamiprid	0.0020	U	ug/L	P404055	
		Endothall	0.25	U	ug/L	P404050	
		Glufosinate	0.10	U	ug/L	P404050	
		Glyphosate	2.5		ug/L	P404050	
		Afidopyropen	0.0020	U	ug/L	P404055	
		Bentazon	0.011		ug/L	P404055	
		Sucralose	1.8		ug/L	P404050	
		Benzovindiflupyr	0.0020	U	ug/L	P404055	
		Carbamazepine	0.0040		ug/L	P404055	
		Clothianidin	0.0020	U	ug/L	P404055	
		Dinotefuran	0.0020	U	ug/L	P404055	
		Diuron	0.0083		ug/L	P404055	
		Fenuron	0.016	U	ug/L	P404055	
		Fluridone	0.025		ug/L	P404055	
		Imazapyr	0.057		ug/L	P404055	
		Hydrocodone	0.0020	U	ug/L	P404055	
		Ibuprofen	0.020	U	ug/L	P404055	
		Imidacloprid	0.010	J	ug/L	P404055	MS
		Linuron	0.0040	U	ug/L	P404055	
		Mandestrobin	0.0020	U	ug/L	P404055	
		MCPP	0.0041	I	ug/L	P404055	
		Naproxen	0.0080	U	ug/L	P404055	
		Primidone	0.0040	U	ug/L	P404055	
		Pyraclostrobin	0.0020	U	ug/L	P404055	
		Thiamethoxam	0.0020	UJ	ug/L	P404055	MS
		Tolfenpyrad	0.0020	U	ug/L	P404055	
		Triclopyr	0.0040	U	ug/L	P404055	

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. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P404050

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: P404055

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P404050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.2		P	40 - 150
AMPA	97.4		P	40 - 160
Endothall	80.0		P	40 - 150
Glufosinate	93.8		P	40 - 160
Glyphosate	94.7		P	40 - 160
Sucralose	89.9		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P404055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	98.8		P	40 - 150
2,4,5-T	111		P	40 - 150
Acetaminophen	84.9		P	30 - 150
Acetamiprid	92.7		P	40 - 150
Afidopyropen	76.7		P	40 - 150
Bentazon	123		P	30 - 150
Benzovindiflupyr	85.2		P	40 - 150
Carbamazepine	95.6		P	40 - 150
Clothianidin	83.8		P	40 - 150
Dinotefuran	84.6		P	40 - 150
Diuron	76.3		P	40 - 150
Fenuron	90.3		P	40 - 150
Fluridone	86.3		P	40 - 150
Hydrocodone	85.6		P	40 - 150
Ibuprofen	80.5		P	40 - 150
Imazapyr	93.6		P	40 - 150
Imidacloprid	86.5		P	40 - 150
Linuron	95.5		P	40 - 150
Mandestrobin	83.8		P	40 - 150
MCPP	115		P	40 - 150
Naproxen	129		P	40 - 150
Primidone	81.1		P	40 - 150
Pyraclostrobin	80.6		P	40 - 150
Thiamethoxam	92.0		P	40 - 150
Tolfenpyrad	43.6		P	30 - 150
Triclopyr	99.1		P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P404050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276786	Acesulfame K	138	131	P/P	40 - 150
2276786	AMPA	96.0	92.7	P/P	40 - 160
2276786	Endothall	94.4	96.3	P/P	40 - 150
2276786	Glufosinate	88.9	94.0	P/P	40 - 160
2276786	Glyphosate	80.5	84.5	P/P	40 - 160
2276786	Sucralose	100	97.7	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P404055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277457	2,4,5-T	111	110	P/P	40 - 150
2277457	Acetaminophen	97.5	99.8	P/P	30 - 150
2277457	Acetamiprid	96.0	105	P/P	40 - 150
2277457	Afidopyropen	83.1	101	P/P	40 - 150
2277457	Benzovindiflupyr	83.1	104	P/P	40 - 150
2277457	Carbamazepine	103	117	P/P	40 - 150
2277457	Clothianidin	91.8	122	P/P	40 - 150
2277457	Dinotefuran	114	134	P/P	40 - 150
2277457	Diuron	56.9	74.2	P/P	40 - 150
2277457	Fenuron	81.5	91.1	P/P	40 - 150
2277457	Hydrocodone	87.0	102	P/P	40 - 150
2277457	Ibuprofen	59.3	56.9	P/P	40 - 150
2277457	Imazapyr	88.0	107	P/P	40 - 150
2277457	Imidacloprid	145	165	P/F	40 - 150
2277457	Linuron	91.5	88.2	P/P	40 - 150
2277457	Mandestrobin	76.9	90.3	P/P	40 - 150
2277457	MCP	140	137	P/P	40 - 150
2277457	Naproxen	94.1	73.0	P/P	40 - 150
2277457	Primidone	62.3	76.5	P/P	40 - 150
2277457	Pyraclostrobin	79.8	92.9	P/P	40 - 150
2277457	Thiamethoxam	138	155	P/F	40 - 150
2277457	Tolfenpyrad	44.6	45.6	P/P	30 - 150
2277457	Triclopyr	100	121	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P404050

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276786	Acesulfame K	5.37	Spike	P	0 - 30
2276786	AMPA	3.39	Spike	P	0 - 30
2276786	Endothall	1.94	Spike	P	0 - 30
2276786	Glufosinate	5.61	Spike	P	0 - 30
2276786	Glyphosate	4.90	Spike	P	0 - 30
2276786	Sucralose	2.30	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P404055

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277457	2,4-D	2.51	Spike	P	0 - 30
2277457	2,4,5-T	0.823	Spike	P	0 - 30
2277457	Acetaminophen	2.35	Spike	P	0 - 30
2277457	Acetamiprid	8.82	Spike	P	0 - 30
2277457	Afidopyropen	19.8	Spike	P	0 - 30
2277457	Bentazon	12.5	Spike	P	0 - 30
2277457	Benzovindiflupyr	22.4	Spike	P	0 - 30
2277457	Carbamazepine	11.2	Spike	P	0 - 30
2277457	Clothianidin	28.0	Spike	P	0 - 30
2277457	Dinotefuran	16.3	Spike	P	0 - 30
2277457	Diuron	22.7	Spike	P	0 - 30
2277457	Fenuron	11.1	Spike	P	0 - 30
2277457	Fluridone	12.3	Spike	P	0 - 30
2277457	Hydrocodone	15.9	Spike	P	0 - 30
2277457	Ibuprofen	4.12	Spike	P	0 - 30
2277457	Imazapyr	11.4	Spike	P	0 - 30
2277457	Imidacloprid	11.8	Spike	P	0 - 30
2277457	Linuron	3.63	Spike	P	0 - 30
2277457	Mandestrobin	16.0	Spike	P	0 - 30
2277457	MCPP	2.45	Spike	P	0 - 30
2277457	Naproxen	25.3	Spike	P	0 - 30
2277457	Primidone	20.4	Spike	P	0 - 30
2277457	Pyraclostrobin	15.1	Spike	P	0 - 30
2277457	Thiamethoxam	11.9	Spike	P	0 - 30
2277457	Tolfenpyrad	2.13	Spike	P	0 - 30
2277457	Triclopyr	18.9	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2277457

Field Sample ID: G4CE0177

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	128	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	102	P	30 - 160
EPA 8321B	Diuron-d6	72.3	P	30 - 160
EPA 8321B	Endothall-d6	75.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	99.5	P	30 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	91.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A107979
Included Lab Sample IDs: 2277457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.4	99.0	P/P	60 - 160
Glufosinate	96.0	104	P/P	60 - 160
Glyphosate	96.8	102	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A107990
Included Lab Sample IDs: 2277457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	88.3	91.2	P/P	60 - 160
Endothall	78.7	64.4	P/P	60 - 160
Sucralose	91.1	87.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A108014
Included Lab Sample IDs: 2277457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	100	P/P	50 - 150
2,4,5-T	94.7	96.5	P/P	50 - 150
Acetaminophen	104	104	P/P	60 - 160
Acetamiprid	104	100	P/P	50 - 150
Afidopyropen	89.1	101	P/P	50 - 150
Bentazon	116	90.0	P/P	50 - 160
Benzovindiflupyr	110	109	P/P	50 - 150
Carbamazepine	105	111	P/P	60 - 150
Clothianidin	98.8	103	P/P	60 - 150
Dinotefuran	111	98.9	P/P	50 - 150
Diuron	111	106	P/P	60 - 160
Fenuron	101	95.2	P/P	60 - 150
Fluridone	106	105	P/P	60 - 160
Hydrocodone	98.3	101	P/P	60 - 150
Ibuprofen	94.0	74.7	P/P	50 - 160
Imazapyr	104	85.1	P/P	50 - 150
Imidacloprid	99.5	110	P/P	60 - 150
Linuron	96.7	116	P/P	60 - 150
Mandestrobin	102	107	P/P	50 - 150
MCPP	95.8	98.5	P/P	50 - 150
Naproxen	115	100	P/P	50 - 160
Primidone	113	110	P/P	60 - 150
Pyraclostrobin	107	101	P/P	60 - 150
Thiamethoxam	95.6	93.7	P/P	50 - 150
Tolfenpyrad	103	96.7	P/P	60 - 150
Triclopyr	101	105	P/P	50 - 150

* 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 8321B	2,4-D	98.8				2.51
	2,4,5-T	111	110	111		0.823
	Acesulfame K	95.2	138	131		5.37
	Acetaminophen	84.9	97.5	99.8		2.35
	Acetamiprid	92.7	96.0	105		8.82
	Afidopyropen	76.7	101	83.1		19.8
	AMPA	97.4	96.0	92.7		3.39
	Bentazon	123				12.5
	Benzovindiflupyr	85.2	104	83.1		22.4
	Carbamazepine	95.6	117	103		11.2
	Clothianidin	83.8	91.8	122		28.0
	Dinotefuran	84.6	114	134		16.3
	Diuron	76.3	74.2	56.9		22.7
	Endothall	80.0	94.4	96.3		1.94
	Fenuron	90.3	81.5	91.1		11.1
	Fluridone	86.3				12.3
	Glufosinate	93.8	88.9	94.0		5.61
	Glyphosate	94.7	80.5	84.5		4.90
	Hydrocodone	85.6	87.0	102		15.9
	Ibuprofen	80.5	56.9	59.3		4.12
	Imazapyr	93.6	107	88.0		11.4
	Imidacloprid	86.5	145	165		11.8
	Linuron	95.5	88.2	91.5		3.63
	Mandestrobin	83.8	90.3	76.9		16.0
	MCPP	115	137	140		2.45
	Naproxen	129	73.0	94.1		25.3
	Primidone	81.1	62.3	76.5		20.4
	Pyraclostrobin	80.6	92.9	79.8		15.1
	Sucralose	89.9	100	97.7		2.30
	Thiamethoxam	92.0	138	155		11.9
	Tolfenpyrad	43.6	45.6	44.6		2.13
	Triclopyr	99.1	121	100		18.9

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2277457

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/22/2021	09/23/2021 12:30	Juyoung Kim	09/23/2021 22:23	Juyoung Kim	2277457
	09/22/2021	09/23/2021 12:30	Juyoung Kim	09/24/2021 17:43	Manjita Shrestha	2277457
	09/22/2021	09/24/2021 09:00	Hoor Shaik	09/25/2021 02:52	Juyoung Kim	2277457