

Chemical Analysis Report

CEN-DIST-2019-01-25-03

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

Event Description: **Minnie**
Request ID: **RQ-2019-01-21-54**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Michael Linger

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 11-FEB-2019 15:42



NON-CONFORMANCE REPORT INCLUDED

Case Narrative

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

Results for the following analytical 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 MINNIE @ CENTER

Collection Date/Time: 01/23/2019 11:15

Field ID: G2CE0108

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2056863	EPA 8321B	2,4-D	0.019		ug/L	P357829	
		Sucralose**	0.19		ug/L	P357752	
		Bentazon	0.0054		ug/L	P357829	
		MCP	0.0033	I	ug/L	P357829	
		Triclopyr**	0.0040	U	ug/L	P357829	
		Imidacloprid	0.0071	I	ug/L	P357829	
		Diuron	0.0020	U	ug/L	P357829	
		Pyraclostrobin**	0.0020	U	ug/L	P357829	
		Primidone**	0.0040	U	ug/L	P357829	
		Linuron	0.0040	U	ug/L	P357829	
		Acetaminophen**	0.0080	U	ug/L	P357829	
		Fenuron	0.016	U	ug/L	P357829	
		Imazapyr**	0.030		ug/L	P357829	
		Carbamazepine**	8.0E-04	U	ug/L	P357829	
		Fluridone**	0.0024	I	ug/L	P357829	
		Hydrocodone**	0.0020	U	ug/L	P357829	
		Naproxen**	0.0080	U	ug/L	P357829	
		Ibuprofen**	0.020	U	ug/L	P357829	
		Glyphosate**	0.50		ug/L	P357752	
		AMPA**	0.23	I	ug/L	P357752	
		Endothall**	0.25	U	ug/L	P357752	
		Glufosinate**	0.10	U	ug/L	P357752	
		Acesulfame K**	0.10	U	ug/L	P357752	

Non-Conformance Report

NCR ID: 7460

Event(s)

CEN-DIST-2019-01-25-03

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

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

Resolution: Customer Mike Linger was contacted; email correspondence attached to sample submittal forms.

Authorized by/Date: Kerry Tate, Ph.D. 2/8/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P357752

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: P357829

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P357752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.0		P	40 - 150
AMPA	101		P	40 - 150
Endothall	97.4		P	40 - 150
Glufosinate	95.1		P	40 - 150
Glyphosate	90.8		P	40 - 140
Sucralose	79.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P357829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	64.0		P	40 - 150
Acetaminophen	79.8		P	30 - 150
Bentazon	70.4		P	30 - 150
Carbamazepine	78.5		P	40 - 150
Diuron	63.3		P	40 - 150
Fenuron	93.2		P	40 - 150
Fluridone	75.9		P	40 - 150
Hydrocodone	82.9		P	40 - 150
Ibuprofen	70.1		P	40 - 150
Imazapyr	79.6		P	40 - 150
Imidacloprid	82.9		P	40 - 160
Linuron	55.7		P	40 - 150
MCPP	91.2		P	40 - 150
Naproxen	53.5		P	40 - 150
Primidone	79.9		P	40 - 150
Pyraclostrobin	44.8		P	40 - 150
Triclopyr	42.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P357752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2055989	Acesulfame K	76.1	68.6	P/P	40 - 150
2055989	AMPA	93.5	99.0	P/P	40 - 150
2055989	Endothall	103	91.1	P/P	40 - 150
2055989	Glufosinate	78.0	81.6	P/P	40 - 150
2055989	Glyphosate	83.4	83.5	P/P	40 - 140
2055989	Sucralose	79.9	71.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P357829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2056863	2,4-D	108	118	P/P	40 - 150
2056863	Acetaminophen	88.7	88.2	P/P	30 - 150
2056863	Bentazon	54.9	51.7	P/P	30 - 150
2056863	Carbamazepine	78.0	73.8	P/P	40 - 150
2056863	Diuron	65.4	63.3	P/P	40 - 150
2056863	Fenuron	71.9	72.9	P/P	40 - 150
2056863	Fluridone	103	92.1	P/P	40 - 150
2056863	Hydrocodone	88.2	92.3	P/P	40 - 150
2056863	Ibuprofen	75.6	82.2	P/P	40 - 150
2056863	Imazapyr	114	109	P/P	40 - 150
2056863	Imidacloprid	153	142	P/P	40 - 160
2056863	Linuron	64.0	56.6	P/P	40 - 150
2056863	MCPP	135	140	P/P	40 - 150
2056863	Naproxen	62.6	57.4	P/P	40 - 150
2056863	Primidone	78.3	81.3	P/P	40 - 150
2056863	Pyraclostrobin	70.7	63.8	P/P	40 - 150
2056863	Triclopyr	69.4	85.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P357752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2055989	Acesulfame K	9.79	Spike	P	0 - 30
2055989	AMPA	4.28	Spike	P	0 - 30
2055989	Endothall	12.4	Spike	P	0 - 30
2055989	Glufosinate	4.47	Spike	P	0 - 30
2055989	Glyphosate	0.0757	Spike	P	0 - 30
2055989	Sucralose	9.69	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P357829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2056863	2,4-D	7.13	Spike	P	0 - 30
2056863	Acetaminophen	0.530	Spike	P	0 - 30
2056863	Bentazon	4.03	Spike	P	0 - 30
2056863	Carbamazepine	5.63	Spike	P	0 - 30
2056863	Diuron	3.27	Spike	P	0 - 30
2056863	Fenuron	1.38	Spike	P	0 - 30
2056863	Fluridone	9.72	Spike	P	0 - 30
2056863	Hydrocodone	4.56	Spike	P	0 - 30
2056863	Ibuprofen	8.34	Spike	P	0 - 30
2056863	Imazapyr	3.53	Spike	P	0 - 30
2056863	Imidacloprid	7.15	Spike	P	0 - 30
2056863	Linuron	12.3	Spike	P	0 - 30
2056863	MCP	3.03	Spike	P	0 - 30
2056863	Naproxen	8.68	Spike	P	0 - 30
2056863	Primidone	3.88	Spike	P	0 - 30
2056863	Pyraclostrobin	10.2	Spike	P	0 - 30
2056863	Triclopyr	21.3	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2056863
Field Sample ID: G2CE0108

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	58.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	47.7	P	30 - 160
EPA 8321B	Diuron-d6	44.2	P	30 - 160
EPA 8321B	Endothall-d6	66.8	P	40 - 160
EPA 8321B	Endothall-d6	66.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	49.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	49.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	67.4	P	30 - 160
EPA 8321B	Primidone-d5	55.8	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89056
Included Lab Sample IDs: 2056863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	125	122	P/P	60 - 160
Glufosinate	115	105	P/P	60 - 160
Glyphosate	109	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89057
Included Lab Sample IDs: 2056863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.2	77.3	P/P	60 - 160
Endothall	102	104	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89162
Included Lab Sample IDs: 2056863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.6	88.4	P/P	50 - 150
Acetaminophen	111	108	P/P	60 - 160
Bentazon	96.1	105	P/P	50 - 160
Carbamazepine	108	108	P/P	60 - 150
Diuron	109	109	P/P	60 - 150
Fenuron	105	103	P/P	60 - 150
Fluridone	103	104	P/P	60 - 160
Hydrocodone	102	101	P/P	60 - 150
Ibuprofen	100	97.9	P/P	50 - 160
Imazapyr	106	94.6	P/P	50 - 150
Imidacloprid	99.4	92.1	P/P	60 - 150
Linuron	98.2	106	P/P	60 - 150
MCPP	94.4	95.3	P/P	50 - 150
Naproxen	134	129	P/P	50 - 160
Primidone	100	98.8	P/P	60 - 150
Pyraclostrobin	102	107	P/P	60 - 150
Triclopyr	124	115	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A89207
Included Lab Sample IDs: 2056863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.1	80.6	P/P	60 - 160

* 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 LCS	SMP	MS
EPA 8321B	2,4-D	64.0	108	118			7.13
	Acesulfame K	87.0	76.1	68.6			9.79
	Acetaminophen	79.8	88.7	88.2			0.530
	AMPA	101	93.5	99.0			4.28
	Bentazon	70.4	54.9	51.7			4.03
	Carbamazepine	78.5	78.0	73.8			5.63
	Diuron	63.3	65.4	63.3			3.27
	Endothall	97.4	103	91.1			12.4
	Fenuron	93.2	71.9	72.9			1.38
	Fluridone	75.9	103	92.1			9.72
	Glufosinate	95.1	78.0	81.6			4.47
	Glyphosate	90.8	83.4	83.5			0.0757
	Hydrocodone	82.9	88.2	92.3			4.56
	Ibuprofen	70.1	75.6	82.2			8.34
	Imazapyr	79.6	114	109			3.53
	Imidacloprid	82.9	153	142			7.15
	Linuron	55.7	64.0	56.6			12.3
	MCPP	91.2	135	140			3.03
	Naproxen	53.5	62.6	57.4			8.68
	Primidone	79.9	78.3	81.3			3.88
	Pyraclostrobin	44.8	70.7	63.8			10.2
	Sucralose	79.4	79.9	71.6			9.69
	Triclopyr	42.5	69.4	85.9			21.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2056863
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2056863

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 12:47	Mohammad Ghaffari	2056863
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	01/28/2019 16:02	Mohammad Ghaffari	2056863
	01/25/2019	01/28/2019 09:45	Mohammad Ghaffari	02/05/2019 12:52	Rebecca Ware	2056863
	01/25/2019	01/30/2019 09:00	Hoor Shaik	01/31/2019 08:18	Juyoung Kim	2056863