

Chemical Analysis Report

NW-DIST-2020-03-25-03

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

Event Description: **Mullet Creek Contionuious**
Request ID: **RQ-2020-03-16-19**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-APR-2020 18:51

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

Case Narrative

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

Results for the following analytical 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: Mouth of Mullet Creek @ Hwy 20

Collection Date/Time: 03/24/2020 12:45

Field ID: G3NWO137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2167762	EPA 8321B	2,4-D	0.0020	U	ug/L	P381314	
		Acesulfame K**	0.10	U	ug/L	P381172	
		AMPA**	0.10	U	ug/L	P381172	
		Sucralose**	0.010	U	ug/L	P381172	
		Acetaminophen**	0.0080	U	ug/L	P381314	
		Acetamiprid**	0.0020	U	ug/L	P381314	
		Endothall**	0.25	U	ug/L	P381172	
		Glufosinate**	0.10	U	ug/L	P381172	
		Glyphosate**	0.10	U	ug/L	P381172	
		Afidopyropen**	0.0020	UJ	ug/L	P381314	
		Bentazon	8.0E-04	U	ug/L	P381314	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P381314	
		Carbamazepine**	8.0E-04	U	ug/L	P381314	
		Clothianidin**	0.0020	U	ug/L	P381314	
		Dinotefuran**	0.0020	U	ug/L	P381314	
		Diuron	0.0020	U	ug/L	P381314	
		Fenuron	0.016	U	ug/L	P381314	
		Fluridone**	8.0E-04	U	ug/L	P381314	
		Imazapyr**	0.0040	U	ug/L	P381314	
		Hydrocodone**	0.0020	U	ug/L	P381314	
		Ibuprofen**	0.020	U	ug/L	P381314	
		Imidacloprid	0.0020	U	ug/L	P381314	
		Linuron	0.0040	U	ug/L	P381314	
		Mandestrobin**	0.0020	UJ	ug/L	P381314	
		MCPP	0.0020	U	ug/L	P381314	
		Naproxen**	0.0080	U	ug/L	P381314	
		Primidone**	0.0040	U	ug/L	P381314	
		Pyraclostrobin**	0.0020	U	ug/L	P381314	
		Thiamethoxam**	0.0020	U	ug/L	P381314	
		Tolfenpyrad**	0.0020	U	ug/L	P381314	
		Triclopyr**	0.0040	U	ug/L	P381314	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P381172

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: P381314

Component	Result	Code	Units
2,4-D	0.0020	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: P381172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	109		P	40 - 150
Endothall	78.3		P	40 - 150
Glufosinate	112		P	40 - 150
Glyphosate	123		P	40 - 140
Sucralose	92.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P381314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	30 - 160
Acetaminophen	75.1		P	30 - 160
Acetamiprid	98.8		P	30 - 160
Afidopyropen	98.3		P	30 - 160
Bentazon	59.2		P	30 - 160
Benzovindiflupyr	80.5		P	30 - 160
Carbamazepine	117		P	30 - 160
Clothianidin	94.6		P	30 - 160
Dinotefuran	87.2		P	30 - 160
Diuron	105		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	84.6		P	30 - 160
Hydrocodone	87.4		P	30 - 160
Ibuprofen	73.2		P	30 - 160
Imazapyr	91.8		P	30 - 160
Imidacloprid	121		P	30 - 160
Linuron	69.9		P	30 - 160
Mandestrobin	86.7		P	30 - 160
MCPP	119		P	30 - 160
Naproxen	68.8		P	30 - 160
Primidone	102		P	30 - 160
Pyraclostrobin	78.8		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	51.4		P	30 - 160
Triclopyr	93.9		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P381172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167436	Acesulfame K	87.6	86.0	P/P	40 - 150
2167436	AMPA	122	116	P/P	40 - 150
2167436	Endothall	98.8	93.5	P/P	40 - 150
2167436	Glufosinate	113	114	P/P	40 - 150
2167436	Glyphosate	118	116	P/P	40 - 140
2167436	Sucralose	88.9	82.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P381314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2167754	2,4-D	115	114	P/P	30 - 160
2167754	Acetaminophen	102	101	P/P	30 - 160
2167754	Acetamiprid	98.0	89.3	P/P	30 - 160
2167754	Afidopyropen	84.5	90.8	P/P	30 - 160
2167754	Bentazon	39.9	42.2	P/P	30 - 160
2167754	Benzovindiflupyr	82.9	74.8	P/P	30 - 160
2167754	Carbamazepine	89.3	89.0	P/P	30 - 160
2167754	Clothianidin	91.0	87.7	P/P	30 - 160
2167754	Dinotefuran	117	114	P/P	30 - 160
2167754	Diuron	89.0	85.9	P/P	30 - 160
2167754	Fenuron	67.0	65.3	P/P	30 - 160
2167754	Fluridone	82.2	81.6	P/P	30 - 160
2167754	Hydrocodone	89.8	87.2	P/P	30 - 160
2167754	Ibuprofen	74.2	67.1	P/P	30 - 160
2167754	Imazapyr	112	113	P/P	30 - 160
2167754	Imidacloprid	140	138	P/P	30 - 160
2167754	Linuron	60.8	62.5	P/P	30 - 160
2167754	Mandestrobin	87.2	80.8	P/P	30 - 160
2167754	MCP	115	112	P/P	30 - 160
2167754	Naproxen	85.0	86.8	P/P	30 - 160
2167754	Primidone	85.6	78.5	P/P	30 - 160
2167754	Pyraclostrobin	85.2	81.2	P/P	30 - 160
2167754	Thiamethoxam	126	120	P/P	30 - 160
2167754	Tolfenpyrad	59.3	53.7	P/P	30 - 160
2167754	Triclopyr	103	104	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P381172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167436	Acesulfame K	1.72	Spike	P	0 - 30
2167436	AMPA	4.65	Spike	P	0 - 30
2167436	Endothall	5.49	Spike	P	0 - 30
2167436	Glufosinate	0.680	Spike	P	0 - 30
2167436	Glyphosate	1.41	Spike	P	0 - 30
2167436	Sucralose	2.64	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P381314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2167754	2,4-D	0.926	Spike	P	0 - 30
2167754	Acetaminophen	1.01	Spike	P	0 - 30
2167754	Acetamiprid	9.26	Spike	P	0 - 30
2167754	Afidopyropen	7.14	Spike	P	0 - 30
2167754	Bentazon	5.67	Spike	P	0 - 30
2167754	Benzovindiflupyr	10.2	Spike	P	0 - 30
2167754	Carbamazepine	0.342	Spike	P	0 - 30
2167754	Clothianidin	3.73	Spike	P	0 - 30
2167754	Dinotefuran	2.79	Spike	P	0 - 30
2167754	Diuron	3.57	Spike	P	0 - 30
2167754	Fenuron	2.66	Spike	P	0 - 30
2167754	Fluridone	0.734	Spike	P	0 - 30
2167754	Hydrocodone	2.95	Spike	P	0 - 30
2167754	Ibuprofen	10.1	Spike	P	0 - 30
2167754	Imazapyr	0.307	Spike	P	0 - 30
2167754	Imidacloprid	1.01	Spike	P	0 - 30
2167754	Linuron	2.75	Spike	P	0 - 30
2167754	Mandestrobin	7.65	Spike	P	0 - 30
2167754	MCP	2.67	Spike	P	0 - 30
2167754	Naproxen	2.10	Spike	P	0 - 30
2167754	Primidone	8.67	Spike	P	0 - 30
2167754	Pyraclostrobin	4.81	Spike	P	0 - 30
2167754	Thiamethoxam	4.76	Spike	P	0 - 30
2167754	Tolfenpyrad	9.91	Spike	P	0 - 30
2167754	Triclopyr	0.577	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2167762

Field Sample ID: G3NWO137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	117	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	107	P	30 - 200
EPA 8321B	Endothall-d6	107	P	30 - 200
EPA 8321B	Glyphosate 13C 15N	139	P	30 - 200
EPA 8321B	Glyphosate 13C 15N	139	P	30 - 200
EPA 8321B	Ibuprofen-d3	81.8	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A98465
Included Lab Sample IDs: 2167762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	68.5	87.5	P/P	40 - 200
Endothall	85.3	70.9	P/P	40 - 200

Reference Method: EPA 8321B
Run ID: A98468
Included Lab Sample IDs: 2167762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	98.6	99.6	P/P	40 - 200
Glufosinate	118	119	P/P	40 - 200
Glyphosate	120	128	P/P	40 - 200

Reference Method: EPA 8321B
Run ID: A98487
Included Lab Sample IDs: 2167762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A98689
Included Lab Sample IDs: 2167762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	93.5	P/P	50 - 150
Acetaminophen	91.0	93.2	P/P	60 - 160
Acetamiprid	105	98.7	P/P	50 - 150
Afidopyropen	102	98.6	P/P	50 - 150
Bentazon	87.8	81.1	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 150
Carbamazepine	100	103	P/P	60 - 150
Clothianidin	96.3	98.1	P/P	60 - 150
Dinotefuran	93.4	97.9	P/P	50 - 150
Diuron	97.2	102	P/P	60 - 160
Fenuron	90.6	91.4	P/P	60 - 150
Fluridone	106	102	P/P	60 - 160
Hydrocodone	107	102	P/P	60 - 150
Ibuprofen	97.7	96.4	P/P	50 - 160
Imazapyr	106	91.6	P/P	50 - 150
Imidacloprid	96.7	95.0	P/P	60 - 150
Linuron	98.4	94.4	P/P	60 - 150
Mandestrobin	107	106	P/P	50 - 150
MCPP	91.2	93.9	P/P	50 - 150
Naproxen	63.6	84.9	P/P	50 - 160
Primidone	99.6	96.9	P/P	60 - 150
Pyraclostrobin	107	104	P/P	60 - 150
Thiamethoxam	98.4	94.9	P/P	50 - 150
Tolfenpyrad	104	102	P/P	60 - 150
Triclopyr	99.7	90.9	P/P	50 - 150

Quality Assurance Report

Calibration Verification

* 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	111	115	114		0.926
	Acesulfame K	112	87.6	86.0		1.72
	Acetaminophen	75.1	102	101		1.01
	Acetamiprid	98.8	98.0	89.3		9.26
	Afidopyropen	98.3	84.5	90.8		7.14
	AMPA	109	122	116		4.65
	Bentazon	59.2	39.9	42.2		5.67
	Benzovindiflupyr	80.5	82.9	74.8		10.2
	Carbamazepine	117	89.3	89.0		0.342
	Clothianidin	94.6	91.0	87.7		3.73
	Dinotefuran	87.2	117	114		2.79
	Diuron	105	89.0	85.9		3.57
	Endothall	78.3	98.8	93.5		5.49
	Fenuron	102	67.0	65.3		2.66
	Fluridone	84.6	82.2	81.6		0.734
	Glufosinate	112	113	114		0.680
	Glyphosate	123	118	116		1.41
	Hydrocodone	87.4	89.8	87.2		2.95
	Ibuprofen	73.2	74.2	67.1		10.1
	Imazapyr	91.8	112	113		0.307
	Imidacloprid	121	140	138		1.01
	Linuron	69.9	60.8	62.5		2.75
	Mandestrobin	86.7	87.2	80.8		7.65
	MCPP	119	115	112		2.67
	Naproxen	68.8	85.0	86.8		2.10
	Primidone	102	85.6	78.5		8.67
	Pyraclostrobin	78.8	85.2	81.2		4.81
	Sucralose	92.3	88.9	82.6		2.64
	Thiamethoxam	101	126	120		4.76
	Tolfenpyrad	51.4	59.3	53.7		9.91
	Triclopyr	93.9	103	104		0.577

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2167762
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2167762

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/25/2020	03/26/2020 09:30	Mohammad Ghaffari	03/26/2020 12:54	Mohammad Ghaffari	2167762
	03/25/2020	03/26/2020 09:30	Mohammad Ghaffari	03/26/2020 20:04	Mohammad Ghaffari	2167762
	03/25/2020	03/26/2020 09:30	Mohammad Ghaffari	03/27/2020 13:57	Mohammad Ghaffari	2167762
	03/25/2020	03/30/2020 10:00	Hoor Shaik	04/07/2020 03:36	Juyoung Kim	2167762