

Chemical Analysis Report

NW-DIST-2023-08-03-02

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

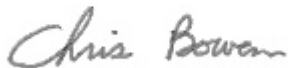
Event Description: **Freeport Run**
Request ID: **RQ-2023-07-31-27**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 11-AUG-2023 09:10



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: LITTLE BLACK CREEK UPSTREAM OF BLACK CREEK **Collection Date/Time: 08/02/2023 10:40**

Field ID: G3NW0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2428478	EPA 8321B	2,4-D	0.0020	U	ug/L	P433321	
		Acesulfame K	0.10	U	ug/L	P433416	
		2,4,5-T	0.0040	U	ug/L	P433321	
		AMPA	0.10	U	ug/L	P433416	
		Acetaminophen	0.0080	U	ug/L	P433321	
		Acetamiprid	0.0020	U	ug/L	P433321	
		Endothall	0.25	U	ug/L	P433416	
		Glufosinate	0.10	U	ug/L	P433416	
		Glyphosate	0.10	U	ug/L	P433416	
		Afidopyropen	0.0020	U	ug/L	P433321	
		Sucralose	0.010	U	ug/L	P433416	
		Bentazon	8.0E-04	U	ug/L	P433321	MS
		Benzovindiflupyr	0.0020	U	ug/L	P433321	
		Carbamazepine	8.0E-04	U	ug/L	P433321	
		Clothianidin	0.0020	U	ug/L	P433321	
		Dinotefuran	0.0020	U	ug/L	P433321	
		Diuron	0.0020	U	ug/L	P433321	
		Fenuron	0.032	U	ug/L	P433321	
		Fluridone	8.0E-04	U	ug/L	P433321	
		Imazapyr	0.0040	U	ug/L	P433321	
		Hydrocodone	0.0020	U	ug/L	P433321	
		Ibuprofen	0.080	U	ug/L	P433321	
		Imidacloprid	0.0020	U	ug/L	P433321	
		Linuron	0.0040	U	ug/L	P433321	
		Mandestrobin	0.0020	U	ug/L	P433321	
		MCPP	0.0020	U	ug/L	P433321	
		Naproxen	0.0080	U	ug/L	P433321	
		Primidone	0.0040	U	ug/L	P433321	
		Pyraclostrobin	0.0020	U	ug/L	P433321	
		Silvex	0.0040	U	ug/L	P433321	
		Thiamethoxam	0.0020	U	ug/L	P433321	
		Tolfenpyrad	0.0020	U	ug/L	P433321	
		Triclopyr	0.0040	U	ug/L	P433321	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P433321

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	0.032	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: P433416

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P433321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.3		P	40 - 150
2,4,5-T	80.8		P	40 - 150
Acetaminophen	87.3		P	30 - 150
Acetamiprid	93.4		P	40 - 150
Afidopyropen	78.9		P	30 - 150
Bentazon	137		P	30 - 150
Benzovindiflupyr	88.3		P	40 - 150
Carbamazepine	66.2		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	114		P	40 - 150
Diuron	63.2		P	40 - 150
Fenuron	94.7		P	40 - 150
Fluridone	102		P	40 - 150
Hydrocodone	97.6		P	40 - 150
Ibuprofen	72.2		P	40 - 150
Imazapyr	77.6		P	40 - 150
Imidacloprid	86.8		P	40 - 150
Linuron	73.7		P	40 - 150
Mandestrobin	95.5		P	40 - 150
MCPP	90.8		P	40 - 150
Naproxen	76.1		P	40 - 150
Primidone	79.2		P	40 - 150
Pyraclostrobin	71.5		P	40 - 150
Silvex	89.4		P	40 - 150
Thiamethoxam	99.0		P	40 - 150
Tolfenpyrad	44.3		P	30 - 150
Triclopyr	82.4		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P433416

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.2		P	40 - 150
AMPA	74.6		P	40 - 150
Endothall	93.3		P	40 - 150
Glufosinate	86.6		P	40 - 150
Glyphosate	97.1		P	40 - 150
Sucralose	85.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P433321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2427704	2,4-D	88.2	95.9	P/P	40 - 150
2427704	2,4,5-T	90.9	102	P/P	40 - 150
2427704	Acetaminophen	104	98.3	P/P	30 - 150
2427704	Acetamiprid	71.7	70.5	P/P	40 - 150
2427704	Afidopyropen	75.4	75.7	P/P	30 - 150
2427704	Bentazon	159	153	F/F	30 - 150
2427704	Benzovindiflupyr	77.9	77.7	P/P	40 - 150
2427704	Carbamazepine	56.9	54.2	P/P	40 - 150
2427704	Clothianidin	115	102	P/P	40 - 150
2427704	Dinotefuran	104	86.7	P/P	40 - 150
2427704	Diuron	70.4	76.1	P/P	40 - 150
2427704	Fenuron	75.5	70.4	P/P	40 - 150
2427704	Fluridone	91.6	86.4	P/P	40 - 150
2427704	Hydrocodone	77.7	74.9	P/P	40 - 150
2427704	Ibuprofen	76.1	77.3	P/P	40 - 150
2427704	Imazapyr	83.6	85.1	P/P	40 - 150
2427704	Imidacloprid	124	120	P/P	40 - 150
2427704	Linuron	55.4	58.9	P/P	40 - 150
2427704	Mandestrobin	85.1	86.8	P/P	40 - 150
2427704	MCCP	97.6	103	P/P	40 - 150
2427704	Naproxen	62.7	70.6	P/P	40 - 150
2427704	Primidone	88.6	87.4	P/P	40 - 150
2427704	Pyraclostrobin	75.0	78.3	P/P	40 - 150
2427704	Silvex	108	101	P/P	40 - 150
2427704	Thiamethoxam	104	96.6	P/P	40 - 150
2427704	Tolfenpyrad	51.0	54.3	P/P	30 - 150
2427704	Triclopyr	91.4	94.2	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P433416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2428009	Acesulfame K	113	121	P/P	40 - 150
2428009	AMPA	64.2	62.1	P/P	40 - 150
2428009	Endothall	102	97.4	P/P	40 - 150
2428009	Glufosinate	92.7	78.5	P/P	40 - 150
2428009	Glyphosate	90.6	96.6	P/P	40 - 150
2428009	Sucralose	84.5	87.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P433321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2427704	2,4-D	8.37	Spike	P	0 - 30
2427704	2,4,5-T	11.7	Spike	P	0 - 30
2427704	Acetaminophen	5.21	Spike	P	0 - 30
2427704	Acetamiprid	1.59	Spike	P	0 - 30
2427704	Afidopyropen	0.494	Spike	P	0 - 30
2427704	Bentazon	3.94	Spike	P	0 - 30
2427704	Benzovindiflupyr	0.209	Spike	P	0 - 30
2427704	Carbamazepine	4.86	Spike	P	0 - 30
2427704	Clothianidin	12.0	Spike	P	0 - 30
2427704	Dinotefuran	17.7	Spike	P	0 - 30
2427704	Diuron	7.77	Spike	P	0 - 30
2427704	Fenuron	7.00	Spike	P	0 - 30
2427704	Fluridone	5.83	Spike	P	0 - 30
2427704	Hydrocodone	3.60	Spike	P	0 - 30
2427704	Ibuprofen	1.65	Spike	P	0 - 30
2427704	Imazapyr	1.53	Spike	P	0 - 30
2427704	Imidacloprid	3.22	Spike	P	0 - 30
2427704	Linuron	6.05	Spike	P	0 - 30
2427704	Mandestrobin	2.00	Spike	P	0 - 30
2427704	MCPP	5.49	Spike	P	0 - 30
2427704	Naproxen	11.9	Spike	P	0 - 30
2427704	Primidone	1.33	Spike	P	0 - 30
2427704	Pyraclostrobin	4.30	Spike	P	0 - 30
2427704	Silvex	6.40	Spike	P	0 - 30
2427704	Thiamethoxam	7.56	Spike	P	0 - 30
2427704	Tolfenpyrad	6.16	Spike	P	0 - 30
2427704	Triclopyr	3.01	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P433416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2428009	Acesulfame K	6.32	Spike	P	0 - 30
2428009	AMPA	3.05	Spike	P	0 - 30
2428009	Endothall	4.58	Spike	P	0 - 30
2428009	Glufosinate	16.5	Spike	P	0 - 30
2428009	Glyphosate	5.25	Spike	P	0 - 30
2428009	Sucralose	3.04	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2428478

Field Sample ID: G3NW0200

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.7	P	30 - 160
EPA 8321B	Diuron-d6	38.7	P	30 - 160
EPA 8321B	Endothall-d6	96.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	73.2	P	30 - 160
EPA 8321B	Primidone-d5	68.5	P	30 - 160
EPA 8321B	Sucralose-d6	86.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A120886
Included Lab Sample IDs: 2428478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.8	100	P/P	60 - 160
Sucralose	81.8	78.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A120887
Included Lab Sample IDs: 2428478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	122	P/P	60 - 160
Endothall	98.2	101	P/P	60 - 160
Glufosinate	82.2	86.0	P/P	60 - 160
Glyphosate	99.4	100	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A120922
Included Lab Sample IDs: 2428478

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.5	79.4	P/P	50 - 150
2,4,5-T	82.1	93.1	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 160
Acetamiprid	108	108	P/P	50 - 150
Afidopyropen	91.5	111	P/P	50 - 150
Bentazon	103	103	P/P	50 - 160
Benzovindiflupyr	115	107	P/P	50 - 150
Carbamazepine	104	109	P/P	60 - 150
Clothianidin	99.9	108	P/P	60 - 150
Dinotefuran	117	105	P/P	50 - 150
Diuron	109	107	P/P	60 - 160
Fenuron	105	104	P/P	60 - 150
Fluridone	127	116	P/P	60 - 160
Hydrocodone	114	106	P/P	60 - 150
Ibuprofen	90.0	91.4	P/P	50 - 160
Imazapyr	88.6	92.8	P/P	50 - 150
Imidacloprid	97.4	96.6	P/P	60 - 150
Linuron	98.0	89.6	P/P	60 - 150
Mandestrobin	113	109	P/P	50 - 150
MCPP	91.1	93.9	P/P	50 - 150
Naproxen	78.4	83.9	P/P	50 - 160
Primidone	103	103	P/P	60 - 150
Pyraclostrobin	108	112	P/P	60 - 150
Silvex	96.8	101	P/P	50 - 150
Thiamethoxam	115	102	P/P	50 - 150
Tolfenpyrad	98.5	105	P/P	60 - 150
Triclopyr	104	90.7	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	83.3	88.2	95.9		8.37
	2,4,5-T	80.8	90.9	102		11.7
	Acesulfame K	93.2	113	121		6.32
	Acetaminophen	87.3	104	98.3		5.21
	Acetamiprid	93.4	71.7	70.5		1.59
	Afidopyropen	78.9	75.4	75.7		0.494
	AMPA	74.6	64.2	62.1		3.05
	Bentazon	137	159	153		3.94
	Benzovindiflupyr	88.3	77.9	77.7		0.209
	Carbamazepine	66.2	56.9	54.2		4.86
	Clothianidin	95.4	115	102		12.0
	Dinotefuran	114	104	86.7		17.7
	Diuron	63.2	70.4	76.1		7.77
	Endothall	93.3	102	97.4		4.58
	Fenuron	94.7	75.5	70.4		7.00
	Fluridone	102	91.6	86.4		5.83
	Glufosinate	86.6	92.7	78.5		16.5
	Glyphosate	97.1	90.6	96.6		5.25
	Hydrocodone	97.6	77.7	74.9		3.60
	Ibuprofen	72.2	76.1	77.3		1.65
	Imazapyr	77.6	83.6	85.1		1.53
	Imidacloprid	86.8	124	120		3.22
	Linuron	73.7	55.4	58.9		6.05
	Mandestrobin	95.5	85.1	86.8		2.00
	MCPP	90.8	97.6	103		5.49
	Naproxen	76.1	62.7	70.6		11.9
	Primidone	79.2	88.6	87.4		1.33
	Pyraclostrobin	71.5	75.0	78.3		4.30
	Silvex	89.4	108	101		6.40
	Sucralose	85.4	84.5	87.1		3.04
	Thiamethoxam	99.0	104	96.6		7.56
	Tolfenpyrad	44.3	51.0	54.3		6.16
	Triclopyr	82.4	91.4	94.2		3.01

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2428478

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/03/2023	08/03/2023 13:00	Hoor Shaik	08/05/2023 11:22	Juyoung Kim	2428478
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 14:50	Hana Lee	2428478
	08/03/2023	08/07/2023 10:00	Tae K Lee	08/07/2023 23:08	Hana Lee	2428478