

Chemical Analysis Report

NW-DIST-2023-06-28-03

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

Event Description: **Freeport Run**
Request ID: **RQ-2023-06-26-12**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

For additional information please contact
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Chris Bowen, B.S.
Kerry Tate, Ph.D.
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Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 07-JUL-2023 11:25



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: Little Black Creek Upstream of Black Creek

Collection Date/Time: 06/26/2023 10:55

Field ID: G3NW0200

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2420239	EPA 8321B	2,4-D	0.0020	U	ug/L	P431822	
		Acesulfame K	0.10	U	ug/L	P431789	
		2,4,5-T	0.0040	U	ug/L	P431822	
		AMPA	0.10	U	ug/L	P431789	
		Acetaminophen	0.0080	U	ug/L	P431822	
		Acetamiprid	0.0020	U	ug/L	P431822	
		Endothall	0.25	U	ug/L	P431789	
		Glufosinate	0.10	U	ug/L	P431789	
		Glyphosate	0.10	U	ug/L	P431789	
		Afidopyropen	0.0020	U	ug/L	P431822	
		Bentazon	8.0E-04	U	ug/L	P431822	
		Sucralose	0.010	U	ug/L	P431789	
		Benzovindiflupyr	0.0020	U	ug/L	P431822	
		Carbamazepine	8.0E-04	U	ug/L	P431822	
		Clothianidin	0.0020	U	ug/L	P431822	
		Dinotefuran	0.0020	U	ug/L	P431822	
		Diuron	0.0020	U	ug/L	P431822	MS
		Fenuron	0.032	U	ug/L	P431822	
		Fluridone	8.0E-04	U	ug/L	P431822	
		Imazapyr	0.0040	U	ug/L	P431822	
		Hydrocodone	0.0020	U	ug/L	P431822	
		Ibuprofen	0.080	U	ug/L	P431822	
		Imidacloprid	0.0020	U	ug/L	P431822	
		Linuron	0.0040	U	ug/L	P431822	
		Mandestrobin	0.0020	U	ug/L	P431822	
		MCPP	0.0020	U	ug/L	P431822	
		Naproxen	0.0080	U	ug/L	P431822	
		Primidone	0.0040	U	ug/L	P431822	
		Pyraclostrobin	0.0020	U	ug/L	P431822	
		Silvex	0.0040	U	ug/L	P431822	
		Thiamethoxam	0.0020	U	ug/L	P431822	
		Tolfenpyrad	0.0020	U	ug/L	P431822	
		Triclopyr	0.0040	U	ug/L	P431822	

Non-Conformance Report

NCR ID: 9941

Event(s)

NW-DIST-2023-06-28-03

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.
Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Kyle Klug 7/5/2023

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: P431789

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: P431822

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P431789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	117		P	40 - 150
Endothall	95.8		P	40 - 150
Glufosinate	94.9		P	40 - 150
Glyphosate	105		P	40 - 150
Sucralose	89.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P431822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 150
2,4,5-T	97.6		P	40 - 150
Acetaminophen	72.8		P	30 - 150
Acetamiprid	72.9		P	40 - 150
Afidopyropen	51.2		P	30 - 150
Bentazon	117		P	30 - 150
Benzovindiflupyr	86.3		P	40 - 150
Carbamazepine	85.7		P	40 - 150
Clothianidin	89.9		P	40 - 150
Dinotefuran	85.1		P	40 - 150
Diuron	85.2		P	40 - 150
Fenuron	88.9		P	40 - 150
Fluridone	95.5		P	40 - 150
Hydrocodone	87.7		P	40 - 150
Ibuprofen	76.4		P	40 - 150
Imazapyr	79.6		P	40 - 150
Imidacloprid	86.6		P	40 - 150
Linuron	87.3		P	40 - 150
Mandestrobin	84.3		P	40 - 150
MCPP	91.7		P	40 - 150
Naproxen	82.9		P	40 - 150
Primidone	74.9		P	40 - 150
Pyraclostrobin	76.0		P	40 - 150
Silvex	84.2		P	40 - 150
Thiamethoxam	86.4		P	40 - 150
Tolfenpyrad	53.7		P	30 - 150
Triclopyr	88.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P431789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419763	Acesulfame K	111	115	P/P	40 - 150
2419763	AMPA	130	124	P/P	40 - 150
2419763	Endothall	101	102	P/P	40 - 150
2419763	Glufosinate	90.3	90.8	P/P	40 - 150
2419763	Glyphosate	92.9	94.1	P/P	40 - 150
2419763	Sucralose	92.4	92.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P431822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419423	2,4-D	107	111	P/P	40 - 150
2419423	2,4,5-T	115	111	P/P	40 - 150
2419423	Acetaminophen	66.5	79.7	P/P	30 - 150
2419423	Acetamiprid	73.4	78.2	P/P	40 - 150
2419423	Afidopyropen	52.8	57.4	P/P	30 - 150
2419423	Bentazon	78.5	91.9	P/P	30 - 150
2419423	Benzovindiflupyr	80.3	81.6	P/P	40 - 150
2419423	Carbamazepine	71.4	77.9	P/P	40 - 150
2419423	Clothianidin	93.5	109	P/P	40 - 150
2419423	Dinotefuran	79.1	91.0	P/P	40 - 150
2419423	Diuron	30.0	32.2	F/F	40 - 150
2419423	Fenuron	74.3	78.1	P/P	40 - 150
2419423	Fluridone	84.4	93.5	P/P	40 - 150
2419423	Hydrocodone	75.6	79.3	P/P	40 - 150
2419423	Ibuprofen	58.1	56.4	P/P	40 - 150
2419423	Imazapyr	80.0	92.9	P/P	40 - 150
2419423	Imidacloprid	113	126	P/P	40 - 150
2419423	Linuron	58.4	67.4	P/P	40 - 150
2419423	Mandestrobin	83.4	85.8	P/P	40 - 150
2419423	MCPP	110	126	P/P	40 - 150
2419423	Naproxen	74.3	81.7	P/P	40 - 150
2419423	Primidone	79.2	95.3	P/P	40 - 150
2419423	Pyraclostrobin	80.5	84.2	P/P	40 - 150
2419423	Silvex	92.3	103	P/P	40 - 150
2419423	Thiamethoxam	87.6	88.9	P/P	40 - 150
2419423	Tolfenpyrad	55.3	64.9	P/P	30 - 150
2419423	Triclopyr	101	110	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P431789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419763	Acesulfame K	3.19	Spike	P	0 - 30
2419763	AMPA	4.05	Spike	P	0 - 30
2419763	Endothall	1.23	Spike	P	0 - 30
2419763	Glufosinate	0.600	Spike	P	0 - 30
2419763	Glyphosate	1.25	Spike	P	0 - 30
2419763	Sucralose	0.215	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P431822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419423	2,4-D	3.67	Spike	P	0 - 30
2419423	2,4,5-T	2.94	Spike	P	0 - 30
2419423	Acetaminophen	18.0	Spike	P	0 - 30
2419423	Acetamiprid	6.32	Spike	P	0 - 30
2419423	Afidopyropen	8.40	Spike	P	0 - 30
2419423	Bentazon	15.8	Spike	P	0 - 30
2419423	Benzovindiflupyr	1.67	Spike	P	0 - 30
2419423	Carbamazepine	8.79	Spike	P	0 - 30
2419423	Clothianidin	15.1	Spike	P	0 - 30
2419423	Dinotefuran	14.0	Spike	P	0 - 30
2419423	Diuron	7.21	Spike	P	0 - 30
2419423	Fenuron	4.99	Spike	P	0 - 30
2419423	Fluridone	8.93	Spike	P	0 - 30
2419423	Hydrocodone	4.83	Spike	P	0 - 30
2419423	Ibuprofen	2.93	Spike	P	0 - 30
2419423	Imazapyr	14.9	Spike	P	0 - 30
2419423	Imidacloprid	11.0	Spike	P	0 - 30
2419423	Linuron	14.4	Spike	P	0 - 30
2419423	Mandestrobin	2.83	Spike	P	0 - 30
2419423	MCPP	13.5	Spike	P	0 - 30
2419423	Naproxen	9.51	Spike	P	0 - 30
2419423	Primidone	18.5	Spike	P	0 - 30
2419423	Pyraclostrobin	4.48	Spike	P	0 - 30
2419423	Silvex	10.9	Spike	P	0 - 30
2419423	Thiamethoxam	1.43	Spike	P	0 - 30
2419423	Tolfenpyrad	16.0	Spike	P	0 - 30
2419423	Triclopyr	8.50	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2420239

Field Sample ID: G3NW0200

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	56.0	P	30 - 160
EPA 8321B	Diuron-d6	40.1	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.9	P	30 - 160
EPA 8321B	Primidone-d5	74.7	P	30 - 160
EPA 8321B	Sucralose-d6	87.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A120108
Included Lab Sample IDs: 2420239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	96.1	P/P	50 - 150
2,4,5-T	94.1	84.5	P/P	50 - 150
Acetaminophen	120	122	P/P	60 - 160
Acetamiprid	107	108	P/P	50 - 150
Afidopyropen	98.0	104	P/P	50 - 150
Bentazon	123	115	P/P	50 - 160
Benzovindiflupyr	105	112	P/P	50 - 150
Carbamazepine	119	116	P/P	60 - 150
Clothianidin	101	111	P/P	60 - 150
Dinotefuran	110	112	P/P	50 - 150
Diuron	121	122	P/P	60 - 160
Fenuron	109	108	P/P	60 - 150
Fluridone	112	113	P/P	60 - 160
Hydrocodone	112	107	P/P	60 - 150
Ibuprofen	87.3	79.0	P/P	50 - 160
Imazapyr	90.5	83.8	P/P	50 - 150
Imidacloprid	98.9	98.9	P/P	60 - 150
Linuron	103	96.3	P/P	60 - 150
Mandestrobin	109	110	P/P	50 - 150
MCPP	84.4	85.8	P/P	50 - 150
Naproxen	127	77.8	P/P	50 - 160
Primidone	99.2	94.7	P/P	60 - 150
Pyraclostrobin	110	117	P/P	60 - 150
Silvex	89.9	82.7	P/P	50 - 150
Thiamethoxam	110	123	P/P	50 - 150
Tolfenpyrad	107	114	P/P	60 - 150
Triclopyr	104	100	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A120150
Included Lab Sample IDs: 2420239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	129	135	P/P	60 - 160
Sucralose	83.0	86.4	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A120153
Included Lab Sample IDs: 2420239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	134	136	P/P	60 - 160
Endothall	98.0	99.7	P/P	60 - 160
Glufosinate	104	103	P/P	60 - 160
Glyphosate	113	108	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 SMP	MS
			LCS			
EPA 8321B	2,4-D	110	107	111		3.67
	2,4,5-T	97.6	115	111		2.94
	Acesulfame K	101	111	115		3.19
	Acetaminophen	72.8	66.5	79.7		18.0
	Acetamiprid	72.9	73.4	78.2		6.32
	Afidopyropen	51.2	52.8	57.4		8.40
	AMPA	117	130	124		4.05
	Bentazon	117	78.5	91.9		15.8
	Benzovindiflupyr	86.3	80.3	81.6		1.67
	Carbamazepine	85.7	71.4	77.9		8.79
	Clothianidin	89.9	93.5	109		15.1
	Dinotefuran	85.1	79.1	91.0		14.0
	Diuron	85.2	30.0	32.2		7.21
	Endothall	95.8	101	102		1.23
	Fenuron	88.9	74.3	78.1		4.99
	Fluridone	95.5	84.4	93.5		8.93
	Glufosinate	94.9	90.3	90.8		0.600
	Glyphosate	105	92.9	94.1		1.25
	Hydrocodone	87.7	75.6	79.3		4.83
	Ibuprofen	76.4	58.1	56.4		2.93
	Imazapyr	79.6	80.0	92.9		14.9
	Imidacloprid	86.6	113	126		11.0
	Linuron	87.3	58.4	67.4		14.4
	Mandestrobin	84.3	83.4	85.8		2.83
	MCPP	91.7	110	126		13.5
	Naproxen	82.9	74.3	81.7		9.51
	Primidone	74.9	79.2	95.3		18.5
	Pyraclostrobin	76.0	80.5	84.2		4.48
	Silvex	84.2	92.3	103		10.9
	Sucralose	89.5	92.4	92.2		0.215
	Thiamethoxam	86.4	87.6	88.9		1.43
	Tolfenpyrad	53.7	55.3	64.9		16.0
	Triclopyr	88.4	101	110		8.50

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2420239

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/28/2023	06/28/2023 13:00	Hoor Shaik	06/29/2023 04:12	Juyoung Kim	2420239
	06/28/2023	06/29/2023 16:00	Hana Lee	06/30/2023 22:02	Tae K Lee	2420239
	06/28/2023	06/29/2023 16:00	Hana Lee	07/01/2023 19:15	Tae K Lee	2420239