

Chemical Analysis Report

SO-DIST-2024-02-07-03

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

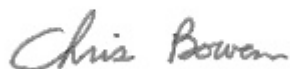
Event Description: **2024 SMP : Myakka River - Snook Haven**
Request ID: **RQ-2024-02-05-27**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Marek Topolski, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Chris Bowen, Environmental Administrator

Date Certified: 16-FEB-2024 12:26



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: MYAKKA RIVER SNOOK HAVEN

Collection Date/Time: 02/06/2024 11:40

Field ID: G3SD0245

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2466849	EPA 8321B	2,4-D	0.0020	U	ug/L	P441220	
		Acesulfame K	0.10	U	ug/L	P440969	
		2,4,5-T	0.0040	U	ug/L	P441220	
		AMPA	0.26	I	ug/L	P440969	
		Acetaminophen	0.0080	U	ug/L	P441220	
		Acetamiprid	0.0020	U	ug/L	P441220	
		Endothall	0.25	U	ug/L	P440969	
		Glufosinate	0.10	U	ug/L	P440969	
		Glyphosate	0.14	I	ug/L	P440969	
		Afidopyropen	0.0020	U	ug/L	P441220	
		Bentazon	0.028		ug/L	P441220	
		Sucralose	0.059		ug/L	P440969	
		Benzovindiflupyr	0.0020	U	ug/L	P441220	
		Carbamazepine	8.0E-04	U	ug/L	P441220	
		Clothianidin	0.0020	U	ug/L	P441220	
		Dinotefuran	0.013		ug/L	P441220	
		Diuron	0.0020	U	ug/L	P441220	
		Fenuron	0.032	U	ug/L	P441220	
		Fluridone	0.0026	I	ug/L	P441220	
		Imazapyr	0.018		ug/L	P441220	
		Hydrocodone	0.0020	U	ug/L	P441220	
		Ibuprofen	0.080	U	ug/L	P441220	
		Imidacloprid	0.0026	I	ug/L	P441220	
		Linuron	0.0040	U	ug/L	P441220	
		Mandestrobin	0.0020	U	ug/L	P441220	
		MCPP	0.0020	U	ug/L	P441220	
		Naproxen	0.0080	U	ug/L	P441220	
		Primidone	0.0040	U	ug/L	P441220	
		Pyraclostrobin	0.0020	U	ug/L	P441220	
		Silvex	0.0040	U	ug/L	P441220	
		Thiamethoxam	0.0020	U	ug/L	P441220	
		Tolfenpyrad	0.0020	U	ug/L	P441220	
		Triclopyr	0.0040	U	ug/L	P441220	

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P440969

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: P441220

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: P440969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	132		P	40 - 150
AMPA	90.4		P	40 - 160
Endothall	81.0		P	40 - 160
Glufosinate	96.4		P	40 - 160
Glyphosate	93.7		P	40 - 160
Sucralose	83.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P441220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	70.8		P	40 - 150
2,4,5-T	68.5		P	40 - 150
Acetaminophen	77.6		P	30 - 150
Acetamiprid	69.0		P	40 - 150
Afidopyropen	60.2		P	30 - 150
Bentazon	68.7		P	30 - 150
Benzovindiflupyr	77.5		P	40 - 150
Carbamazepine	73.1		P	40 - 150
Clothianidin	79.6		P	40 - 150
Dinotefuran	89.3		P	40 - 150
Diuron	69.4		P	40 - 150
Fenuron	83.7		P	40 - 150
Fluridone	80.3		P	40 - 150
Hydrocodone	85.8		P	40 - 150
Ibuprofen	78.9		P	40 - 150
Imazapyr	69.9		P	40 - 150
Imidacloprid	79.9		P	40 - 150
Linuron	73.3		P	40 - 150
Mandestrobin	73.7		P	40 - 150
MCPP	65.1		P	40 - 150
Naproxen	77.8		P	40 - 150
Primidone	70.0		P	40 - 150
Pyraclostrobin	74.8		P	40 - 150
Silvex	56.5		P	40 - 150
Thiamethoxam	85.8		P	40 - 150
Tolfenpyrad	49.0		P	30 - 150
Triclopyr	66.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P440969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2466652	Acesulfame K	136	138	P/P	40 - 150
2466652	AMPA	87.1	89.4	P/P	40 - 160
2466652	Endothall	104	111	P/P	40 - 160
2466652	Glufosinate	98.8	93.8	P/P	40 - 160
2466652	Glyphosate	83.2	89.6	P/P	40 - 160
2466652	Sucralose	78.9	86.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P441220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467206	2,4-D	59.3	61.4	P/P	40 - 150
2467206	2,4,5-T	55.1	54.3	P/P	40 - 150
2467206	Acetaminophen	80.1	87.4	P/P	30 - 150
2467206	Acetamiprid	59.1	66.0	P/P	40 - 150
2467206	Afidopyropen	60.4	67.2	P/P	30 - 150
2467206	Benzovindiflupyr	75.6	86.2	P/P	40 - 150
2467206	Carbamazepine	62.2	65.6	P/P	40 - 150
2467206	Clothianidin	78.7	79.5	P/P	40 - 150
2467206	Dinotefuran	81.1	91.2	P/P	40 - 150
2467206	Diuron	56.0	60.5	P/P	40 - 150
2467206	Fenuron	99.5	102	P/P	40 - 150
2467206	Hydrocodone	68.7	74.3	P/P	40 - 150
2467206	Ibuprofen	90.8	108	P/P	40 - 150
2467206	Imidacloprid	96.9	108	P/P	40 - 150
2467206	Linuron	61.3	64.9	P/P	40 - 150
2467206	Mandestrobin	74.6	80.4	P/P	40 - 150
2467206	MCP	61.9	69.9	P/P	40 - 150
2467206	Naproxen	134	114	P/P	40 - 150
2467206	Primidone	68.4	78.2	P/P	40 - 150
2467206	Pyraclostrobin	76.7	89.4	P/P	40 - 150
2467206	Silvex	55.5	56.6	P/P	40 - 150
2467206	Thiamethoxam	75.5	84.9	P/P	40 - 150
2467206	Tolfenpyrad	46.7	57.9	P/P	30 - 150
2467206	Triclopyr	53.3	53.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P440969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2466652	Acesulfame K	1.04	Spike	P	0 - 30
2466652	AMPA	2.64	Spike	P	0 - 30
2466652	Endothall	6.04	Spike	P	0 - 30
2466652	Glufosinate	5.25	Spike	P	0 - 30
2466652	Glyphosate	7.49	Spike	P	0 - 30
2466652	Sucralose	8.89	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P441220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467206	2,4-D	3.29	Spike	P	0 - 30
2467206	2,4,5-T	1.48	Spike	P	0 - 30
2467206	Acetaminophen	8.66	Spike	P	0 - 30
2467206	Acetamiprid	11.0	Spike	P	0 - 30
2467206	Afidopyropen	10.6	Spike	P	0 - 30
2467206	Bentazon	1.19	Spike	P	0 - 30
2467206	Benzovindiflupyr	13.0	Spike	P	0 - 30
2467206	Carbamazepine	5.32	Spike	P	0 - 30
2467206	Clothianidin	0.996	Spike	P	0 - 30
2467206	Dinotefuran	11.8	Spike	P	0 - 30
2467206	Diuron	5.78	Spike	P	0 - 30
2467206	Fenuron	2.05	Spike	P	0 - 30
2467206	Fluridone	5.45	Spike	P	0 - 30
2467206	Hydrocodone	7.90	Spike	P	0 - 30
2467206	Ibuprofen	17.6	Spike	P	0 - 30
2467206	Imazapyr	1.24	Spike	P	0 - 30
2467206	Imidacloprid	10.3	Spike	P	0 - 30
2467206	Linuron	5.73	Spike	P	0 - 30
2467206	Mandestrobin	7.46	Spike	P	0 - 30
2467206	MCPP	12.1	Spike	P	0 - 30
2467206	Naproxen	16.6	Spike	P	0 - 30
2467206	Primidone	13.4	Spike	P	0 - 30
2467206	Pyraclostrobin	15.4	Spike	P	0 - 30
2467206	Silvex	2.08	Spike	P	0 - 30
2467206	Thiamethoxam	11.7	Spike	P	0 - 30
2467206	Tolfenpyrad	21.4	Spike	P	0 - 30
2467206	Triclopyr	0.836	Spike	P	0 - 30

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2466849

Field Sample ID: G3SD0245

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	60.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.5	P	30 - 160
EPA 8321B	Diuron-d6	60.4	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	111	P	30 - 160
EPA 8321B	Primidone-d5	74.1	P	30 - 160
EPA 8321B	Sucralose-d6	78.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A124028
Included Lab Sample IDs: 2466849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.7	91.1	P/P	60 - 160
Endothall	83.7	81.6	P/P	60 - 160
Glufosinate	91.3	89.3	P/P	60 - 160
Glyphosate	92.6	98.2	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A124029
Included Lab Sample IDs: 2466849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	149	134	P/P	60 - 160
Sucralose	85.8	84.9	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A124151
Included Lab Sample IDs: 2466849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.3	83.8	P/P	50 - 150
2,4,5-T	79.0	79.5	P/P	50 - 150
Acetaminophen	104	101	P/P	60 - 160
Acetamiprid	109	107	P/P	50 - 150
Afidopyropen	108	108	P/P	50 - 150
Bentazon	87.5	76.4	P/P	50 - 160
Benzovindiflupyr	104	101	P/P	50 - 150
Carbamazepine	107	114	P/P	60 - 150
Clothianidin	102	100	P/P	60 - 150
Dinotefuran	106	105	P/P	50 - 150
Diuron	98.3	108	P/P	60 - 160
Fenuron	105	104	P/P	60 - 150
Fluridone	112	115	P/P	60 - 160
Hydrocodone	110	110	P/P	60 - 150
Ibuprofen	124	150	P/P	50 - 160
Imazapyr	82.8	74.5	P/P	50 - 150
Imidacloprid	99.1	101	P/P	60 - 150
Linuron	97.2	91.8	P/P	60 - 150
Mandestrobin	103	98.7	P/P	50 - 150
MCPP	94.9	81.8	P/P	50 - 150
Naproxen	129	129	P/P	50 - 160
Primidone	96.1	96.4	P/P	60 - 150
Pyraclostrobin	108	109	P/P	60 - 150
Silvex	81.9	76.7	P/P	50 - 150
Thiamethoxam	116	111	P/P	50 - 150
Tolfenpyrad	98.7	98.2	P/P	60 - 150
Triclopyr	78.1	69.6	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	MS
			LCS	SMP		
EPA 8321B	2,4-D	70.8	59.3	61.4		3.29
	2,4,5-T	68.5	55.1	54.3		1.48
	Acesulfame K	132	136	138		1.04
	Acetaminophen	77.6	80.1	87.4		8.66
	Acetamiprid	69.0	59.1	66.0		11.0
	Afidopyropen	60.2	60.4	67.2		10.6
	AMPA	90.4	87.1	89.4		2.64
	Bentazon	68.7				1.19
	Benzovindiflupyr	77.5	75.6	86.2		13.0
	Carbamazepine	73.1	62.2	65.6		5.32
	Clothianidin	79.6	78.7	79.5		0.996
	Dinotefuran	89.3	81.1	91.2		11.8
	Diuron	69.4	56.0	60.5		5.78
	Endothall	81.0	104	111		6.04
	Fenuron	83.7	99.5	102		2.05
	Fluridone	80.3				5.45
	Glufosinate	96.4	98.8	93.8		5.25
	Glyphosate	93.7	83.2	89.6		7.49
	Hydrocodone	85.8	68.7	74.3		7.90
	Ibuprofen	78.9	90.8	108		17.6
	Imazapyr	69.9				1.24
	Imidacloprid	79.9	96.9	108		10.3
	Linuron	73.3	61.3	64.9		5.73
	Mandestrobin	73.7	74.6	80.4		7.46
	MCPP	65.1	61.9	69.9		12.1
	Naproxen	77.8	134	114		16.6
	Primidone	70.0	68.4	78.2		13.4
	Pyraclostrobin	74.8	76.7	89.4		15.4
	Silvex	56.5	55.5	56.6		2.08
	Sucralose	83.7	78.9	86.3		8.89
	Thiamethoxam	85.8	75.5	84.9		11.7
	Tolfenpyrad	49.0	46.7	57.9		21.4
	Triclopyr	66.4	53.3	53.8		0.836

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2466849

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/07/2024	02/07/2024 11:30	Tae K Lee	02/07/2024 15:27	Tae K Lee	2466849
	02/07/2024	02/07/2024 11:30	Tae K Lee	02/07/2024 16:51	Tae K Lee	2466849
	02/07/2024	02/13/2024 09:00	Hoor Shaik	02/13/2024 20:09	Juyoung Kim	2466849