

Chemical Analysis Report

SO-DIST-2023-05-05-01

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

Event Description: **2023 SMP: Stadium Arcadia**
Request ID: **RQ-2023-04-24-70**
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: William Mullen

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Certified by: Colin Wright, Program Administrator

Date Certified: 19-MAY-2023 12:46



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: Charlie Creek up Strm Hwy 17

Collection Date/Time: 05/04/2023 10:00

Field ID: G3SD0237

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2406138	EPA 8321B	2,4-D	0.0033	I	ug/L	P429588	MS
		Acesulfame K	0.10	U	ug/L	P429323	
		2,4,5-T	0.0040	U	ug/L	P429588	
		AMPA	0.20	I	ug/L	P429323	
		Acetaminophen	0.0080	U	ug/L	P429588	
		Acetamiprid	0.0020	U	ug/L	P429588	
		Endothall	0.25	U	ug/L	P429323	
		Glufosinate	0.10	U	ug/L	P429323	
		Glyphosate	0.10	U	ug/L	P429323	
		Afidopyropen	0.0020	U	ug/L	P429588	
		Sucralose	0.017	I	ug/L	P429323	
		Bentazon	8.0E-04	U	ug/L	P429588	
		Benzovindiflupyr	0.0020	U	ug/L	P429588	
		Carbamazepine	8.0E-04	U	ug/L	P429588	
		Clothianidin	0.034		ug/L	P429588	
		Dinotefuran	0.0020	U	ug/L	P429588	
		Diuron	0.010		ug/L	P429588	
		Fenuron	0.032	U	ug/L	P429588	
		Fluridone	8.0E-04	U	ug/L	P429588	
		Imazapyr	0.0040	U	ug/L	P429588	
		Hydrocodone	0.0020	U	ug/L	P429588	
		Ibuprofen	0.080	U	ug/L	P429588	
		Imidacloprid	0.051		ug/L	P429588	
		Linuron	0.0040	U	ug/L	P429588	
		Mandestrobin	0.0020	U	ug/L	P429588	
		MCPP	0.0020	U	ug/L	P429588	
		Naproxen	0.0080	U	ug/L	P429588	
		Primidone	0.0040	U	ug/L	P429588	
		Pyraclostrobin	0.0020	U	ug/L	P429588	
		Silvex	0.0040	U	ug/L	P429588	
		Thiamethoxam	0.011		ug/L	P429588	
		Tolfenpyrad	0.0020	U	ug/L	P429588	
		Triclopyr	0.0040	U	ug/L	P429588	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P429323

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: P429588

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: P429323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	144		P	40 - 150
AMPA	97.2		P	40 - 150
Endothall	77.8		P	40 - 150
Glufosinate	79.1		P	40 - 150
Glyphosate	96.7		P	40 - 150
Sucralose	118		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P429588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	87.9		P	40 - 150
2,4,5-T	94.3		P	40 - 150
Acetaminophen	95.9		P	30 - 150
Acetamiprid	81.4		P	40 - 150
Afidopyropen	64.9		P	30 - 150
Bentazon	149		P	30 - 150
Benzovindiflupyr	89.5		P	40 - 150
Carbamazepine	92.5		P	40 - 150
Clothianidin	88.4		P	40 - 150
Dinotefuran	107		P	40 - 150
Diuron	89.3		P	40 - 150
Fenuron	93.2		P	40 - 150
Fluridone	86.4		P	40 - 150
Hydrocodone	93.3		P	40 - 150
Ibuprofen	99.5		P	40 - 150
Imazapyr	87.5		P	40 - 150
Imidacloprid	97.2		P	40 - 150
Linuron	89.7		P	40 - 150
Mandestrobin	87.5		P	40 - 150
MCPP	92.8		P	40 - 150
Naproxen	101		P	40 - 150
Primidone	89.2		P	40 - 150
Pyraclostrobin	86.6		P	40 - 150
Silvex	96.2		P	40 - 150
Thiamethoxam	83.8		P	40 - 150
Tolfenpyrad	54.8		P	30 - 150
Triclopyr	85.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P429323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405697	Acesulfame K	133	135	P/P	40 - 150
2405697	AMPA	91.2	90.8	P/P	40 - 150
2405697	Endothall	77.2	76.0	P/P	40 - 150
2405697	Glufosinate	67.6	69.6	P/P	40 - 150
2405697	Glyphosate	82.8	91.7	P/P	40 - 150
2405697	Sucralose	109	136	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405849	2,4-D	87.0	93.4	P/P	40 - 150
2405849	2,4,5-T	87.1	89.0	P/P	40 - 150
2405849	Acetaminophen	90.9	93.3	P/P	30 - 150
2405849	Acetamiprid	91.0	92.7	P/P	40 - 150
2405849	Afidopyropen	86.1	100	P/P	30 - 150
2405849	Bentazon	162	156	F/F	30 - 150
2405849	Benzovindiflupyr	77.8	79.6	P/P	40 - 150
2405849	Carbamazepine	87.4	93.2	P/P	40 - 150
2405849	Clothianidin	84.4	89.7	P/P	40 - 150
2405849	Dinotefuran	96.1	96.2	P/P	40 - 150
2405849	Diuron	67.8	77.3	P/P	40 - 150
2405849	Fenuron	72.2	75.2	P/P	40 - 150
2405849	Fluridone	84.2	83.9	P/P	40 - 150
2405849	Hydrocodone	75.3	78.8	P/P	40 - 150
2405849	Ibuprofen	68.9	83.6	P/P	40 - 150
2405849	Imazapyr	107	108	P/P	40 - 150
2405849	Imidacloprid	101	105	P/P	40 - 150
2405849	Linuron	78.5	82.6	P/P	40 - 150
2405849	Mandestrobin	82.1	81.5	P/P	40 - 150
2405849	MCP	90.4	99.1	P/P	40 - 150
2405849	Naproxen	98.8	85.3	P/P	40 - 150
2405849	Primidone	77.6	82.1	P/P	40 - 150
2405849	Pyraclostrobin	78.0	81.8	P/P	40 - 150
2405849	Silvex	101	100	P/P	40 - 150
2405849	Thiamethoxam	84.1	85.1	P/P	40 - 150
2405849	Tolfenpyrad	47.2	49.0	P/P	30 - 150
2405849	Triclopyr	87.0	96.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P429323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405697	Acesulfame K	1.22	Spike	P	0 - 30
2405697	AMPA	0.419	Spike	P	0 - 30
2405697	Endothall	1.55	Spike	P	0 - 30
2405697	Glufosinate	3.03	Spike	P	0 - 30
2405697	Glyphosate	10.1	Spike	P	0 - 30
2405697	Sucralose	19.1	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P429588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405849	2,4-D	6.87	Spike	P	0 - 30
2405849	2,4,5-T	2.12	Spike	P	0 - 30
2405849	Acetaminophen	2.57	Spike	P	0 - 30
2405849	Acetamiprid	1.85	Spike	P	0 - 30
2405849	Afidopyropen	15.2	Spike	P	0 - 30
2405849	Bentazon	2.87	Spike	P	0 - 30
2405849	Benzovindiflupyr	2.18	Spike	P	0 - 30
2405849	Carbamazepine	6.11	Spike	P	0 - 30
2405849	Clothianidin	6.06	Spike	P	0 - 30
2405849	Dinotefuran	0.105	Spike	P	0 - 30
2405849	Diuron	11.5	Spike	P	0 - 30
2405849	Fenuron	4.10	Spike	P	0 - 30
2405849	Fluridone	0.407	Spike	P	0 - 30
2405849	Hydrocodone	4.60	Spike	P	0 - 30
2405849	Ibuprofen	19.2	Spike	P	0 - 30
2405849	Imazapyr	0.875	Spike	P	0 - 30
2405849	Imidacloprid	3.35	Spike	P	0 - 30
2405849	Linuron	5.09	Spike	P	0 - 30
2405849	Mandestrobin	0.769	Spike	P	0 - 30
2405849	MCPP	9.22	Spike	P	0 - 30
2405849	Naproxen	14.6	Spike	P	0 - 30
2405849	Primidone	5.58	Spike	P	0 - 30
2405849	Pyraclostrobin	4.78	Spike	P	0 - 30
2405849	Silvex	0.907	Spike	P	0 - 30
2405849	Thiamethoxam	1.21	Spike	P	0 - 30
2405849	Tolfenpyrad	3.59	Spike	P	0 - 30
2405849	Triclopyr	9.91	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2406138
Field Sample ID: G3SD0237

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.4	P	30 - 160
EPA 8321B	Diuron-d6	52.0	P	30 - 160
EPA 8321B	Endothall-d6	92.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	95.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.2	P	30 - 160
EPA 8321B	Primidone-d5	65.0	P	30 - 160
EPA 8321B	Sucralose-d6	93.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A118997
 Included Lab Sample IDs: 2406138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	151	150	P/P	60 - 160
Sucralose	109	123	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A119009
 Included Lab Sample IDs: 2406138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	90.2	97.5	P/P	60 - 160
Endothall	82.0	78.9	P/P	60 - 160
Glufosinate	79.5	79.6	P/P	60 - 160
Glyphosate	98.9	94.2	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A119170
 Included Lab Sample IDs: 2406138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.3	85.1	P/P	50 - 150
2,4,5-T	92.5	97.8	P/P	50 - 150
Acetaminophen	104	103	P/P	60 - 160
Acetamiprid	109	107	P/P	50 - 150
Afidopyropen	117	90.5	P/P	50 - 150
Bentazon	143	126	P/P	50 - 160
Benzovindiflupyr	103	106	P/P	50 - 150
Carbamazepine	113	116	P/P	60 - 150
Clothianidin	89.1	89.1	P/P	60 - 150
Dinotefuran	114	114	P/P	50 - 150
Diuron	105	102	P/P	60 - 160
Fenuron	95.2	95.1	P/P	60 - 150
Fluridone	116	108	P/P	60 - 160
Hydrocodone	97.7	97.0	P/P	60 - 150
Ibuprofen	93.2	97.3	P/P	50 - 160
Imazapyr	84.4	90.8	P/P	50 - 150
Imidacloprid	104	105	P/P	60 - 150
Linuron	108	115	P/P	60 - 150
Mandestrobin	106	105	P/P	50 - 150
MCPP	104	93.5	P/P	50 - 150
Naproxen	67.4	84.4	P/P	50 - 160
Primidone	93.3	91.3	P/P	60 - 150
Pyraclostrobin	106	108	P/P	60 - 150
Silvex	96.9	87.3	P/P	50 - 150
Thiamethoxam	91.0	88.9	P/P	50 - 150
Tolfenpyrad	95.8	95.5	P/P	60 - 150
Triclopyr	88.6	103	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	87.9	87.0	93.4		6.87
	2,4,5-T	94.3	87.1	89.0		2.12
	Acesulfame K	144	133	135		1.22
	Acetaminophen	95.9	90.9	93.3		2.57
	Acetamiprid	81.4	91.0	92.7		1.85
	Afidopyropen	64.9	86.1	100		15.2
	AMPA	97.2	91.2	90.8		0.419
	Bentazon	149	162	156		2.87
	Benzovindiflupyr	89.5	77.8	79.6		2.18
	Carbamazepine	92.5	87.4	93.2		6.11
	Clothianidin	88.4	84.4	89.7		6.06
	Dinotefuran	107	96.1	96.2		0.105
	Diuron	89.3	67.8	77.3		11.5
	Endothall	77.8	77.2	76.0		1.55
	Fenuron	93.2	72.2	75.2		4.10
	Fluridone	86.4	84.2	83.9		0.407
	Glufosinate	79.1	67.6	69.6		3.03
	Glyphosate	96.7	82.8	91.7		10.1
	Hydrocodone	93.3	75.3	78.8		4.60
	Ibuprofen	99.5	68.9	83.6		19.2
	Imazapyr	87.5	107	108		0.875
	Imidacloprid	97.2	101	105		3.35
	Linuron	89.7	78.5	82.6		5.09
	Mandestrobin	87.5	82.1	81.5		0.769
	MCPP	92.8	90.4	99.1		9.22
	Naproxen	101	98.8	85.3		14.6
	Primidone	89.2	77.6	82.1		5.58
	Pyraclostrobin	86.6	78.0	81.8		4.78
	Silvex	96.2	101	100		0.907
	Sucralose	118	109	136		19.1
	Thiamethoxam	83.8	84.1	85.1		1.21
	Tolfenpyrad	54.8	47.2	49.0		3.59
	Triclopyr	85.6	87.0	96.1		9.91

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2406138

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/05/2023	05/05/2023 13:00	Manjita Shrestha	05/05/2023 23:00	Manjita Shrestha	2406138
	05/05/2023	05/05/2023 13:00	Manjita Shrestha	05/06/2023 23:06	Manjita Shrestha	2406138
	05/05/2023	05/10/2023 09:00	Hoor Shaik	05/11/2023 23:49	Juyoung Kim	2406138