Chemical Analysis Report

SE-DIST-2021-08-05-02

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

Event Description: **SMP - Palm Beach In-House**
Request ID: **RQ-2021-08-02-85**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
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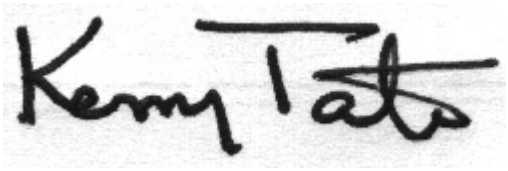
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 12-AUG-2021 11:33



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: Boynton Beach Canal @ Congress **Collection Date/Time: 08/04/2021 12:45**

Field ID: G3SE0054 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2267675	EPA 8321B	2,4-D	1.5		ug/L	P402147	
		Acesulfame K	0.10	U	ug/L	P401931	
		2,4,5-T	0.0040	U	ug/L	P402147	
		AMPA	3.1		ug/L	P401931	
		Acetaminophen	0.021	I	ug/L	P402147	
		Acetamiprid	0.0039	I	ug/L	P402147	
		Endothall	0.25	U	ug/L	P401931	
		Glufosinate	0.10	U	ug/L	P401931	
		Glyphosate	6.6		ug/L	P401931	
		Afidopyropen	0.0020	U	ug/L	P402147	
		Bentazon	0.095		ug/L	P402147	
		Sucralose	0.91		ug/L	P401931	
		Benzovindiflupyr	0.0020	U	ug/L	P402147	
		Carbamazepine	0.0014	I	ug/L	P402147	
		Clothianidin	0.0043	I	ug/L	P402147	
		Dinotefuran	0.24		ug/L	P402147	
		Diuron	0.089		ug/L	P402147	
		Fenuron	0.016	U	ug/L	P402147	
		Fluridone	0.16		ug/L	P402147	
		Imazapyr	0.21		ug/L	P402147	
		Hydrocodone	0.0020	U	ug/L	P402147	
		Ibuprofen	0.020	U	ug/L	P402147	
		Imidacloprid	0.061		ug/L	P402147	MS
		Linuron	0.0040	U	ug/L	P402147	
		Mandestrobin	0.0020	U	ug/L	P402147	
		MCPP	0.0083		ug/L	P402147	
		Naproxen	0.0080	U	ug/L	P402147	
		Primidone	0.0062	I	ug/L	P402147	
		Pyraclostrobin	0.0064	I	ug/L	P402147	
		Thiamethoxam	0.020		ug/L	P402147	MS
		Tolfenpyrad	0.0020	U	ug/L	P402147	
		Triclopyr	0.0040	U	ug/L	P402147	

Ref. Method and Comment:
EPA 8321B: MS accuracy for 2,4-D 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: P401931

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: P402147

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	0.016	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: P401931

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	109		P	40 - 150
AMPA	103		P	40 - 150
Endothall	76.4		P	40 - 150
Glufosinate	99.1		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	98.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	96.5		P	40 - 150
2,4,5-T	90.2		P	40 - 150
Acetaminophen	75.1		P	30 - 150
Acetamiprid	77.9		P	40 - 150
Afidopyropen	53.3		P	40 - 150
Bentazon	92.8		P	30 - 150
Benzovindiflupyr	78.0		P	40 - 150
Carbamazepine	83.5		P	40 - 150
Clothianidin	82.0		P	40 - 150
Dinotefuran	79.9		P	40 - 150
Diuron	82.1		P	40 - 150
Fenuron	85.4		P	40 - 150
Fluridone	83.8		P	40 - 150
Hydrocodone	83.8		P	40 - 150
Ibuprofen	76.5		P	40 - 150
Imazapyr	88.2		P	40 - 150
Imidacloprid	83.1		P	40 - 150
Linuron	75.9		P	40 - 150
Mandestrobin	78.0		P	40 - 150
MCPP	95.5		P	40 - 150
Naproxen	82.6		P	40 - 150
Primidone	82.1		P	40 - 150
Pyraclostrobin	75.7		P	40 - 150
Thiamethoxam	86.2		P	40 - 150
Tolfenpyrad	46.0		P	30 - 150
Triclopyr	94.3		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P401931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267098	Acesulfame K	94.7	104	P/P	40 - 150
2267098	AMPA	91.7	92.4	P/P	40 - 150
2267098	Endothall	105	106	P/P	40 - 150
2267098	Glufosinate	124	132	P/P	40 - 150
2267098	Glyphosate	82.4	87.0	P/P	40 - 150
2267098	Sucralose	106	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267226	2,4,5-T	120	104	P/P	40 - 150
2267226	Acetaminophen	98.7	111	P/P	30 - 150
2267226	Acetamiprid	83.4	84.7	P/P	40 - 150
2267226	Afidopyropen	70.6	65.5	P/P	40 - 150
2267226	Bentazon	84.7	93.5	P/P	30 - 150
2267226	Benzovindiflupyr	83.3	87.2	P/P	40 - 150
2267226	Carbamazepine	97.1	105	P/P	40 - 150
2267226	Clothianidin	112	121	P/P	40 - 150
2267226	Dinotefuran	112	130	P/P	40 - 150
2267226	Diuron	74.8	79.0	P/P	40 - 150
2267226	Fenuron	78.7	89.6	P/P	40 - 150
2267226	Fluridone	82.0	78.2	P/P	40 - 150
2267226	Hydrocodone	94.9	104	P/P	40 - 150
2267226	Ibuprofen	78.9	75.4	P/P	40 - 150
2267226	Imazapyr	121	138	P/P	40 - 150
2267226	Imidacloprid	169	172	F/F	40 - 150
2267226	Linuron	76.8	81.4	P/P	40 - 150
2267226	Mandestrobin	84.7	91.4	P/P	40 - 150
2267226	MCPP	135	131	P/P	40 - 150
2267226	Naproxen	116	115	P/P	40 - 150
2267226	Primidone	98.2	112	P/P	40 - 150
2267226	Pyraclostrobin	83.4	92.3	P/P	40 - 150
2267226	Thiamethoxam	138	150	P/F	40 - 150
2267226	Tolfenpyrad	54.2	58.1	P/P	30 - 150
2267226	Triclopyr	122	113	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P401931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267098	Acesulfame K	8.44	Spike	P	0 - 30
2267098	AMPA	0.626	Spike	P	0 - 30
2267098	Endothall	0.228	Spike	P	0 - 30
2267098	Glufosinate	6.32	Spike	P	0 - 30
2267098	Glyphosate	3.37	Spike	P	0 - 30
2267098	Sucralose	2.78	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267226	2,4-D	3.44	Spike	P	0 - 30
2267226	2,4,5-T	14.0	Spike	P	0 - 30
2267226	Acetaminophen	11.7	Spike	P	0 - 30
2267226	Acetamiprid	1.63	Spike	P	0 - 30
2267226	Afidopyropen	7.41	Spike	P	0 - 30
2267226	Bentazon	9.86	Spike	P	0 - 30
2267226	Benzovindiflupyr	4.60	Spike	P	0 - 30
2267226	Carbamazepine	7.70	Spike	P	0 - 30
2267226	Clothianidin	7.64	Spike	P	0 - 30
2267226	Dinotefuran	14.6	Spike	P	0 - 30
2267226	Diuron	5.44	Spike	P	0 - 30
2267226	Fenuron	13.0	Spike	P	0 - 30
2267226	Fluridone	4.79	Spike	P	0 - 30
2267226	Hydrocodone	9.47	Spike	P	0 - 30
2267226	Ibuprofen	4.53	Spike	P	0 - 30
2267226	Imazapyr	12.7	Spike	P	0 - 30
2267226	Imidacloprid	1.35	Spike	P	0 - 30
2267226	Linuron	5.81	Spike	P	0 - 30
2267226	Mandestrobin	7.60	Spike	P	0 - 30
2267226	MCPP	3.06	Spike	P	0 - 30
2267226	Naproxen	0.941	Spike	P	0 - 30
2267226	Primidone	12.7	Spike	P	0 - 30
2267226	Pyraclostrobin	10.2	Spike	P	0 - 30
2267226	Thiamethoxam	8.81	Spike	P	0 - 30
2267226	Tolfenpyrad	7.08	Spike	P	0 - 30
2267226	Triclopyr	7.01	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2267675
Field Sample ID: G3SE0054

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	78.5	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.8	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	99.7	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A107069
Included Lab Sample IDs: 2267675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	65.0	80.9	P/P	60 - 160
Endothall	72.4	66.0	P/P	60 - 160
Sucralose	90.4	85.4	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A107073
Included Lab Sample IDs: 2267675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	109	114	P/P	60 - 160
Glufosinate	96.8	101	P/P	60 - 160
Glyphosate	101	106	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A107150
Included Lab Sample IDs: 2267675

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.1	89.5	P/P	50 - 150
2,4,5-T	100	97.9	P/P	50 - 150
Acetaminophen	93.2	92.0	P/P	60 - 160
Acetamiprid	100	99.9	P/P	50 - 150
Afidopyropen	95.8	93.1	P/P	50 - 150
Bentazon	110	108	P/P	50 - 160
Benzovindiflupyr	97.9	99.4	P/P	50 - 150
Carbamazepine	106	101	P/P	60 - 150
Clothianidin	96.9	95.0	P/P	60 - 150
Dinotefuran	98.6	98.9	P/P	50 - 150
Diuron	107	104	P/P	60 - 160
Fenuron	98.6	101	P/P	60 - 150
Fluridone	101	102	P/P	60 - 160
Hydrocodone	103	105	P/P	60 - 150
Ibuprofen	90.7	91.2	P/P	50 - 160
Imazapyr	101	101	P/P	50 - 150
Imidacloprid	95.6	95.6	P/P	60 - 150
Linuron	102	97.9	P/P	60 - 150
Mandestrobin	98.8	100	P/P	50 - 150
MCPP	96.7	95.7	P/P	50 - 150
Naproxen	93.7	110	P/P	50 - 160
Primidone	93.9	92.6	P/P	60 - 150
Pyraclostrobin	99.9	101	P/P	60 - 150
Thiamethoxam	101	106	P/P	50 - 150
Tolfenpyrad	94.9	93.6	P/P	60 - 150
Triclopyr	101	99.1	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		
					LCS	SMP	MS
EPA 8321B	2,4-D	96.5					3.44
	2,4,5-T	90.2	120	104			14.0
	Acesulfame K	109	94.7	104			8.44
	Acetaminophen	75.1	98.7	111			11.7
	Acetamiprid	77.9	83.4	84.7			1.63
	Afidopyropen	53.3	70.6	65.5			7.41
	AMPA	103	91.7	92.4			0.626
	Bentazon	92.8	84.7	93.5			9.86
	Benzovindiflupyr	78.0	83.3	87.2			4.60
	Carbamazepine	83.5	97.1	105			7.70
	Clothianidin	82.0	112	121			7.64
	Dinotefuran	79.9	112	130			14.6
	Diuron	82.1	74.8	79.0			5.44
	Endothall	76.4	105	106			0.228
	Fenuron	85.4	78.7	89.6			13.0
	Fluridone	83.8	82.0	78.2			4.79
	Glufosinate	99.1	124	132			6.32
	Glyphosate	101	82.4	87.0			3.37
	Hydrocodone	83.8	94.9	104			9.47
	Ibuprofen	76.5	78.9	75.4			4.53
	Imazapyr	88.2	121	138			12.7
	Imidacloprid	83.1	169	172			1.35
	Linuron	75.9	76.8	81.4			5.81
	Mandestrobin	78.0	84.7	91.4			7.60
	MCPP	95.5	135	131			3.06
	Naproxen	82.6	116	115			0.941
	Primidone	82.1	98.2	112			12.7
	Pyraclostrobin	75.7	83.4	92.3			10.2
	Sucralose	98.2	106	103			2.78
	Thiamethoxam	86.2	138	150			8.81
	Tolfenpyrad	46.0	54.2	58.1			7.08
	Triclopyr	94.3	122	113			7.01

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2267675

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/05/2021	08/05/2021 12:30	Juyoung Kim	08/05/2021 14:47	Juyoung Kim	2267675
	08/05/2021	08/05/2021 12:30	Juyoung Kim	08/06/2021 09:53	Juyoung Kim	2267675
	08/05/2021	08/09/2021 08:30	Hoor Shaik	08/10/2021 03:19	Juyoung Kim	2267675
	08/05/2021	08/09/2021 08:30	Hoor Shaik	08/10/2021 14:17	Juyoung Kim	2267675