

Chemical Analysis Report

SW-DIST-2018-03-13-01

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

Event Description: **Baker w/D&B**
Request ID: **RQ-2018-03-12-20**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-MAR-2018 17:42



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 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: Baker Creek

Collection Date/Time: 03/12/2018 12:00

Field ID: G2SW0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1974309	EPA 8321B	2,4-D	0.012		ug/L	P341440	
		Sucralose**	0.38		ug/L	P341353	
		Bentazon	0.0054		ug/L	P341440	
		MCP	0.0020	U	ug/L	P341440	MS
		Triclopyr**	0.0040	U	ug/L	P341440	
		Imidacloprid	0.017		ug/L	P341440	
		Diuron	0.0097		ug/L	P341440	
		Pyraclostrobin**	0.0020	U	ug/L	P341440	
		Primidone**	0.0040	U	ug/L	P341440	
		Linuron	0.0040	U	ug/L	P341440	
		Acetaminophen**	0.0080	U	ug/L	P341440	
		Fenuron	0.0097	I	ug/L	P341440	
		Imazapyr**	0.068		ug/L	P341440	
		Carbamazepine**	7.0E-04	I	ug/L	P341440	RPD
		Fluridone**	0.0020	I	ug/L	P341440	

Ref. Method and Comment:
 EPA 8321B: Results confirmed in re-analysis.

Sample Location: Baker Creek dup

Collection Date/Time: 03/12/2018 12:05

Field ID: G2SW0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1974310	EPA 8321B	2,4-D	0.012		ug/L	P341440	
		Sucralose**	0.38		ug/L	P341353	
		Bentazon	0.0049		ug/L	P341440	
		MCP	0.0020	U	ug/L	P341440	MS
		Triclopyr**	0.0040	U	ug/L	P341440	
		Imidacloprid	0.017		ug/L	P341440	
		Diuron	0.0096		ug/L	P341440	
		Pyraclostrobin**	0.0020	U	ug/L	P341440	
		Primidone**	0.0040	U	ug/L	P341440	
		Linuron	0.0040	U	ug/L	P341440	
		Acetaminophen**	0.0080	U	ug/L	P341440	
		Fenuron	0.0080	U	ug/L	P341440	
		Imazapyr**	0.067		ug/L	P341440	
		Carbamazepine**	4.9E-04	I	ug/L	P341440	RPD
		Fluridone**	0.0019	I	ug/L	P341440	

Ref. Method and Comment:
 EPA 8321B: Results confirmed in re-analysis.

Sample Location: Baker Creek blank

Collection Date/Time: 03/12/2018 12:25

Field ID: G2SW0012

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1974311	EPA 8321B	2,4-D	0.0020	U	ug/L	P341440	

Field ID: G2SW0012

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1974311	EPA 8321B	Sucralose**	0.01	U	ug/L	P341353	
		Bentazon	8.0E-04	U	ug/L	P341440	
		MCP	0.0020	U	ug/L	P341440	MS
		Triclopyr**	0.0040	U	ug/L	P341440	
		Imidacloprid	0.0020	U	ug/L	P341440	
		Diuron	0.0020	U	ug/L	P341440	
		Pyraclostrobin**	0.0020	U	ug/L	P341440	
		Primidone**	0.0040	U	ug/L	P341440	
		Linuron	0.0040	U	ug/L	P341440	
		Acetaminophen**	0.0080	U	ug/L	P341440	
		Fenuron	0.0080	U	ug/L	P341440	
		Imazapyr**	0.0040	U	ug/L	P341440	
		Carbamazepine**	4.0E-04	U	ug/L	P341440	RPD
		Fluridone**	8.0E-04	U	ug/L	P341440	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P341353

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P341440

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P341353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	88.0		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P341440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.7		P	40 - 150
Acetaminophen	110		P	30 - 150
Bentazon	77.3		P	30 - 150
Carbamazepine	97.3		P	40 - 150
Diuron	66.7		P	40 - 150
Fenuron	99.8		P	40 - 150
Fluridone	60.4		P	40 - 150
Imazapyr	67.2		P	40 - 150
Imidacloprid	97.2		P	40 - 160
Linuron	71.7		P	40 - 150
MCP	63.3		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	62.7		P	40 - 150
Triclopyr	67.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P341353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1974062	Sucralose	120	124	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P341440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1974889	2,4-D	52.5	49.4	P/P	40 - 150
1974889	Acetaminophen	136	113	P/P	30 - 150
1974889	Bentazon	31.8	30.5	P/P	30 - 150
1974889	Carbamazepine	95.6	69.0	P/P	40 - 150
1974889	Diuron	65.1	57.5	P/P	40 - 150
1974889	Fenuron	93.6	76.9	P/P	40 - 150
1974889	Fluridone	57.7	57.9	P/P	40 - 150
1974889	Imazapyr	62.5	57.5	P/P	40 - 150
1974889	Imidacloprid	152	118	P/P	40 - 160
1974889	Linuron	85.7	72.0	P/P	40 - 150
1974889	MCP	37.0	35.0	F/F	40 - 150
1974889	Primidone	110	93.0	P/P	40 - 150
1974889	Pyraclostrobin	76.6	67.0	P/P	40 - 150
1974889	Triclopyr	40.4	41.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P341353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P341353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1974062	Sucralose	3.16	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P341440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1974889	2,4-D	5.44	Spike	P	0 - 30
1974889	Acetaminophen	18.9	Spike	P	0 - 30
1974889	Bentazon	3.92	Spike	P	0 - 30
1974889	Carbamazepine	32.4	Spike	F	0 - 30
1974889	Diuron	12.4	Spike	P	0 - 30
1974889	Fenuron	19.5	Spike	P	0 - 30
1974889	Fluridone	0.353	Spike	P	0 - 30
1974889	Imazapyr	8.29	Spike	P	0 - 30
1974889	Imidacloprid	25.3	Spike	P	0 - 30
1974889	Linuron	17.4	Spike	P	0 - 30
1974889	MCP	5.56	Spike	P	0 - 30
1974889	Primidone	17.1	Spike	P	0 - 30
1974889	Pyraclostrobin	13.3	Spike	P	0 - 30
1974889	Triclopyr	2.36	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1974309
Field Sample ID: G2SW0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.5	P	30 - 160
EPA 8321B	Diuron-d6	70.3	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	40 - 160

Lab Sample ID: 1974310
Field Sample ID: G2SW0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	59.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.8	P	30 - 160
EPA 8321B	Diuron-d6	74.2	P	30 - 160
EPA 8321B	Primidone-d5	99.6	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1974311
Field Sample ID: G2SW0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.3	P	30 - 160
EPA 8321B	Diuron-d6	81.7	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	77.6	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A82710
Included Lab Sample IDs: 1974309, 1974310, 1974311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.0	86.5	P/P	60 - 150
Sucralose	86.5	84.4	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A82734
Included Lab Sample IDs: 1974309, 1974310, 1974311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	102	P/P	50 - 150
Acetaminophen	112	114	P/P	60 - 150
Bentazon	136	127	P/P	50 - 150
Carbamazepine	137	133	P/P	60 - 150
Diuron	115	119	P/P	60 - 150
Fenuron	111	114	P/P	60 - 150
Fluridone	120	117	P/P	60 - 160
Imazapyr	91.5	101	P/P	50 - 150
Imidacloprid	113	108	P/P	60 - 150
Linuron	105	110	P/P	60 - 150
MCPP	102	103	P/P	50 - 150
Primidone	98.1	105	P/P	60 - 150
Pyraclostrobin	118	119	P/P	60 - 150
Triclopyr	96.4	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	LCS	Precision SMP	MS
EPA 8321B	2,4-D	71.7	52.5 49.4			5.44
	Acetaminophen	110	136 113			18.9
	Bentazon	77.3	31.8 30.5			3.92
	Carbamazepine	97.3	95.6 69.0			32.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Diuron	66.7	65.1	57.5		12.4
	Fenuron	99.8	93.6	76.9		19.5
	Fluridone	60.4	57.7	57.9		0.353
	Imazapyr	67.2	62.5	57.5		8.29
	Imidacloprid	97.2	152	118		25.3
	Linuron	71.7	85.7	72.0		17.4
	MCPP	63.3	37.0	35.0		5.56
	Primidone	103	110	93.0		17.1
	Pyraclostrobin	62.7	76.6	67.0		13.3
	Sucralose	88.0	120	124		3.16
	Triclopyr	67.1	40.4	41.3		2.36

Reference Method Descriptions

Method / DoH Cert

EPA 8321B / E31780

EPA 8321B / E31780

Description

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Water soluble organic compounds by HPLC/MS/MS

Associated Samples

1974309, 1974310, 1974311

1974309, 1974310, 1974311

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/13/2018	03/15/2018	Hoor Shaik	03/16/2018	Julie Michelle Frank	1974309, 1974310, 1974311
	03/13/2018	03/15/2018	Hoor Shaik	03/17/2018	Julie Michelle Frank	1974309, 1974310, 1974311
	03/13/2018	03/15/2018	Julie Michelle Frank	03/16/2018	Juyoung Kim	1974309, 1974310, 1974311