

Chemical Analysis Report

SO-DIST-2018-06-27-01

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

Event Description: **3240N : Owl Creek**
Request ID: **RQ-2018-06-04-80**
Customer: **SO-DIST**
Project ID: **SMP**

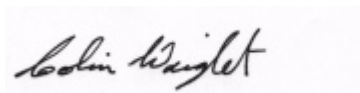
Send Reports to:
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FLDEP South District Office
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Attn: Maryann Dugan

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Report Comment: Sample location and field ID corrected.

Certified by: Colin Wright, Program Administrator

Date Certified: 17-JUL-2018 11:12

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue rectangular background.

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: OWL CREEK @ SR 78

Collection Date/Time: 06/26/2018 11:33

Field ID: AD78837

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2003512	EPA 8321B	2,4-D	0.023		ug/L	P347578	
		Sucralose**	0.010	U	ug/L	P347494	
		Bentazon	8.0E-04	U	ug/L	P347578	
		MCP	0.0020	U	ug/L	P347578	MS
		Triclopyr**	0.0040	U	ug/L	P347578	MS
		Imidacloprid	0.0033	I	ug/L	P347578	
		Diuron	0.0020	U	ug/L	P347578	
		Pyraclostrobin**	0.0020	U	ug/L	P347578	
		Primidone**	0.0040	U	ug/L	P347578	
		Linuron	0.0040	U	ug/L	P347578	
		Acetaminophen**	0.018	I	ug/L	P347578	
		Fenuron	0.016	U	ug/L	P347578	
		Imazapyr**	0.014	I	ug/L	P347578	
		Carbamazepine**	4.0E-04	U	ug/L	P347578	
		Fluridone**	0.0016		ug/L	P347578	
		Hydrocodone**	8.0E-04	U	ug/L	P347578	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347494

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P347578

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	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	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: P347494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	108		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.9		P	40 - 150
Acetaminophen	87.7		P	30 - 150
Bentazon	88.8		P	30 - 150
Carbamazepine	90.0		P	40 - 150
Diuron	80.7		P	40 - 150
Fenuron	94.6		P	40 - 150
Fluridone	93.7		P	40 - 150
Hydrocodone	94.4		P	40 - 150
Imazapyr	82.4		P	40 - 150
Imidacloprid	95.7		P	40 - 160
Linuron	71.0		P	40 - 150
MCPP	125		P	40 - 150
Primidone	86.0		P	40 - 150
Pyraclostrobin	77.2		P	40 - 150
Triclopyr	112		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P347494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003557	Sucralose	110	127	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003741	2,4-D	116	139	P/P	40 - 150
2003741	Acetaminophen	70.3	71.7	P/P	30 - 150
2003741	Bentazon	39.9	48.0	P/P	30 - 150
2003741	Carbamazepine	62.2	62.4	P/P	40 - 150
2003741	Diuron	51.4	53.0	P/P	40 - 150
2003741	Fenuron	58.1	59.0	P/P	40 - 150
2003741	Fluridone	75.2	78.2	P/P	40 - 150
2003741	Hydrocodone	63.4	61.6	P/P	40 - 150
2003741	Imazapyr	64.2	67.5	P/P	40 - 150
2003741	Imidacloprid	113	113	P/P	40 - 160
2003741	Linuron	52.4	53.6	P/P	40 - 150
2003741	MCPP	145	159	P/F	40 - 150
2003741	Primidone	60.5	67.4	P/P	40 - 150
2003741	Pyraclostrobin	80.6	78.3	P/P	40 - 150
2003741	Triclopyr	177	192	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P347494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003557	Sucralose	13.8	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P347578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003741	2,4-D	17.7	Spike	P	0 - 30
2003741	Acetaminophen	1.92	Spike	P	0 - 30
2003741	Bentazon	18.4	Spike	P	0 - 30
2003741	Carbamazepine	0.334	Spike	P	0 - 30
2003741	Diuron	3.13	Spike	P	0 - 30
2003741	Fenuron	1.62	Spike	P	0 - 30
2003741	Fluridone	3.79	Spike	P	0 - 30
2003741	Hydrocodone	2.89	Spike	P	0 - 30
2003741	Imazapyr	4.06	Spike	P	0 - 30
2003741	Imidacloprid	0.103	Spike	P	0 - 30
2003741	Linuron	2.31	Spike	P	0 - 30
2003741	MCP	9.22	Spike	P	0 - 30
2003741	Primidone	10.8	Spike	P	0 - 30
2003741	Pyraclostrobin	2.89	Spike	P	0 - 30
2003741	Triclopyr	8.06	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: 2003512
Field Sample ID: AD78837

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	57.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.5	P	30 - 160
EPA 8321B	Diuron-d6	43.2	P	30 - 160
EPA 8321B	Primidone-d5	57.6	P	30 - 160
EPA 8321B	Sucralose-d6	65.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84988
Included Lab Sample IDs: 2003512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	110	P/P	50 - 150
Acetaminophen	108	108	P/P	60 - 160
Bentazon	135	137	P/P	50 - 150
Carbamazepine	97.8	105	P/P	60 - 160
Diuron	102	99.6	P/P	60 - 150
Fenuron	96.7	98.9	P/P	60 - 150
Fluridone	105	110	P/P	60 - 160
Hydrocodone	102	98.9	P/P	60 - 150
Imazapyr	92.8	80.0	P/P	50 - 150
Imidacloprid	92.0	92.3	P/P	60 - 150
Linuron	86.9	92.3	P/P	60 - 150
MCPP	124	119	P/P	50 - 150
Primidone	90.6	94.7	P/P	60 - 150
Pyraclostrobin	106	102	P/P	60 - 150
Triclopyr	113	98.1	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A85066
Included Lab Sample IDs: 2003512

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	121	P/P	60 - 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	90.9	116	139		17.7
	Acetaminophen	87.7	70.3	71.7		1.92
	Bentazon	88.8	39.9	48.0		18.4
	Carbamazepine	90.0	62.2	62.4		0.334
	Diuron	80.7	51.4	53.0		3.13
	Fenuron	94.6	58.1	59.0		1.62
	Fluridone	93.7	75.2	78.2		3.79
	Hydrocodone	94.4	63.4	61.6		2.89
	Imazapyr	82.4	64.2	67.5		4.06
	Imidacloprid	95.7	113	113		0.103
	Linuron	71.0	52.4	53.6		2.31
	MCPP	125	145	159		9.22
	Primidone	86.0	60.5	67.4		10.8
	Pyraclostrobin	77.2	80.6	78.3		2.89
	Sucralose	108	110	127		13.8
	Triclopyr	112	177	192		8.06

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2003512
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2003512

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/27/2018	07/02/2018 13:00	Mohammad Ghaffari	07/05/2018 22:09	Mohammad Ghaffari	2003512
	06/27/2018	07/02/2018 14:30	Hoor Shaik	07/03/2018 22:49	Juyoung Kim	2003512
	06/27/2018	07/02/2018 14:30	Hoor Shaik	07/04/2018 15:32	Juyoung Kim	2003512