

Chemical Analysis Report

CEN-DIST-2017-06-27-01

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

Event Description: **Econ / Wekiva / Long Branch**

Request ID: **RQ-2017-06-26-33**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

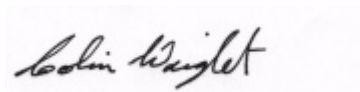
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For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 27-JUL-2017 10:46

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: LITTLE WEKIVA RIVER NEAR EDGEWATER DR.

Collection Date/Time: 06/26/2017 12:20

Field ID: G2CE0062

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909056	EPA 8321B	Sucralose**	0.28		ug/L	P327556	
	USGS O-2060-01	2,4-D	0.16		ug/L	P327607	
		Diuron	0.0086		ug/L	P327607	
		Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	0.012		ug/L	P327607	MS
		Bentazon	0.046		ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0020	U	ug/L	P327607	
		Carbamazepine**	7.1E-04	I	ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.0040	U	ug/L	P327607	
		Fluridone**	0.032		ug/L	P327607	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LITTLE ECON RIVER S OF SR 419 BRIDGE

Collection Date/Time: 06/26/2017 11:20

Field ID: G2CE0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909055	EPA 8321B	Sucralose**	4.5		ug/L	P327556	
	USGS O-2060-01	2,4-D	2.5		ug/L	P327607	
		Diuron	0.0066		ug/L	P327607	
		Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	0.043		ug/L	P327607	MS
		Bentazon	0.043		ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0028	I	ug/L	P327607	
		Carbamazepine**	0.0073		ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.0098	I	ug/L	P327607	
		Fluridone**	0.037		ug/L	P327607	

Ref. Method and Comment:

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes. MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LITTLE ECON RIVER S OF SR 419 BRIDGE (DUPLICATE)

Collection Date/Time: 06/26/2017 11:20

Field ID: G2CE0061_D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909057	EPA 8321B	Sucralose**	3.9		ug/L	P327556	
	USGS O-2060-01	2,4-D	2.1		ug/L	P327607	
		Diuron	0.0064		ug/L	P327607	

Field ID: G2CE0061_D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909057	USGS O-2060-01	Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	0.044		ug/L	P327607	MS
		Bentazon	0.037		ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0029	I	ug/L	P327607	
		Carbamazepine**	0.0081		ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.010	I	ug/L	P327607	
		Fluridone**	0.043		ug/L	P327607	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: FIELD BLANK

Collection Date/Time: 06/26/2017 11:45

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1909058	EPA 8321B	Sucralose**	0.010	U	ug/L	P327614	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P327607	
		Diuron	8.0E-04	U	ug/L	P327607	
		Fenuron	0.0080	U	ug/L	P327607	
		Imidacloprid	8.0E-04	U	ug/L	P327607	MS
		Bentazon	8.0E-04	U	ug/L	P327607	
		Linuron	0.0040	U	ug/L	P327607	
		Acetaminophen**	0.0080	U	ug/L	P327607	
		MCP	0.0020	U	ug/L	P327607	
		Carbamazepine**	4.0E-04	U	ug/L	P327607	
		Triclopyr**	0.0040	U	ug/L	P327607	
		Primidone**	0.0040	U	ug/L	P327607	
		Fluridone**	4.0E-04	U	ug/L	P327607	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy for bentazon 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: P327556

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P327614

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P327607

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P327556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P327614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	90.5		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P327607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.1		P	40 - 150
Acetaminophen	71.2		P	30 - 150
Bentazon	88.8		P	40 - 150
Carbamazepine	92.9		P	40 - 150
Diuron	88.3		P	40 - 150
Fenuron	104		P	40 - 150
Fluridone	85.4		P	40 - 150
Imidacloprid	82.2		P	40 - 160
Linuron	70.5		P	40 - 150
MCPP	85.4		P	40 - 150
Primidone	108		P	40 - 150
Triclopyr	75.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P327556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908842	Sucralose	70.8	89.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P327614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909302	Sucralose	108	92.0	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P327607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1909014	2,4-D	95.2	122	P/P	40 - 150
1909014	Acetaminophen	76.7	104	P/P	30 - 150
1909014	Carbamazepine	84.5	103	P/P	40 - 150
1909014	Diuron	66.5	71.7	P/P	40 - 150
1909014	Fenuron	70.3	83.0	P/P	40 - 150
1909014	Fluridone	41.7	61.3	P/P	40 - 150
1909014	Imidacloprid	160	184	F/F	40 - 160
1909014	Linuron	74.1	87.1	P/P	40 - 150
1909014	MCP	108	121	P/P	40 - 150
1909014	Primidone	85.1	98.2	P/P	40 - 150
1909014	Triclopyr	97.5	116	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P327556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908842	Sucralose	23.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P327614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909302	Sucralose	14.7	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P327607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909014	2,4-D	8.23	Spike	P	0 - 30
1909014	Acetaminophen	30.0	Spike	P	0 - 30
1909014	Bentazon	6.20	Spike	P	0 - 30
1909014	Carbamazepine	17.7	Spike	P	0 - 30
1909014	Diuron	6.33	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P327607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1909014	Fenuron	16.5	Spike	P	0 - 30
1909014	Fluridone	13.5	Spike	P	0 - 30
1909014	Imidacloprid	11.1	Spike	P	0 - 30
1909014	Linuron	16.1	Spike	P	0 - 30
1909014	MCP	10.2	Spike	P	0 - 30
1909014	Primidone	11.1	Spike	P	0 - 30
1909014	Triclopyr	17.3	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: 1909055
Field Sample ID: G2CE0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	142	P	40 - 160
USGS O-2060-01	2,4-D-d3	146	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	104	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	106	P	30 - 165
USGS O-2060-01	Diuron-d6	81.5	P	30 - 160
USGS O-2060-01	Primidone-d5	91.7	P	30 - 150

Lab Sample ID: 1909056
Field Sample ID: G2CE0062

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	142	P	40 - 160
USGS O-2060-01	2,4-D-d3	123	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	122	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	110	P	30 - 165
USGS O-2060-01	Diuron-d6	96.9	P	30 - 160
USGS O-2060-01	Primidone-d5	71.0	P	30 - 150

Lab Sample ID: 1909057
Field Sample ID: G2CE0061_D

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	114	P	40 - 160
USGS O-2060-01	2,4-D-d3	157	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	108	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	117	P	30 - 165
USGS O-2060-01	Diuron-d6	100	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1909058

Field Sample ID: Field Blank

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	110	P	40 - 160
USGS O-2060-01	2,4-D-d3	90.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	98.9	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	99.3	P	30 - 165
USGS O-2060-01	Diuron-d6	108	P	30 - 160
USGS O-2060-01	Primidone-d5	107	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A77414

Included Lab Sample IDs: 1909055, 1909056, 1909057, 1909058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	138	125	P/P	60 - 160
Sucralose	141	138	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A77714

Included Lab Sample IDs: 1909055, 1909056, 1909057, 1909058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	98.2	P/P	50 - 150
2,4-D	98.2	94.8	P/P	50 - 150
Bentazon	107	92.9	P/P	50 - 150
Bentazon	92.9	90.8	P/P	50 - 150
MCP	77.8	79.7	P/P	50 - 150
MCP	89.6	77.8	P/P	50 - 150
Triclopyr	74.7	86.8	P/P	50 - 150
Triclopyr	81.9	74.7	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1909055, 1909056, 1909057, 1909058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	104	93.0	P/P	60 - 150
Acetaminophen	93.0	93.3	P/P	60 - 150
Carbamazepine	83.4	98.4	P/P	60 - 150
Carbamazepine	95.9	83.4	P/P	60 - 150
Diuron	80.1	90.8	P/P	60 - 150
Diuron	97.0	80.1	P/P	60 - 150
Fenuron	102	89.6	P/P	60 - 150
Fenuron	89.6	111	P/P	60 - 150
Fluridone	105	96.2	P/P	60 - 160
Fluridone	93.2	105	P/P	60 - 160
Imidacloprid	84.6	106	P/P	60 - 150
Imidacloprid	95.8	84.6	P/P	60 - 150
Linuron	91.7	93.4	P/P	60 - 150
Linuron	93.4	89.4	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77717

Included Lab Sample IDs: 1909055, 1909056, 1909057, 1909058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	105	99.9	P/P	60 - 150
Primidone	99.9	98.4	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A77880

Included Lab Sample IDs: 1909055, 1909057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.5	105	P/P	50 - 150
2,4-D	91.1	109	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	Sucralose	83.0		70.8	89.8			23.0
	Sucralose	90.5		108	92.0			14.7
USGS O-2060-01	2,4-D	88.1		95.2	122			8.23
	Acetaminophen	71.2		76.7	104			30.0
	Bentazon	88.8						6.20
	Carbamazepine	92.9		84.5	103			17.7
	Diuron	88.3		66.5	71.7			6.33
	Fenuron	104		70.3	83.0			16.5
	Fluridone	85.4		41.7	61.3			13.5
	Imidacloprid	82.2		160	184			11.1
	Linuron	70.5		74.1	87.1			16.1
	MCPP	85.4		108	121			10.2
	Primidone	108		85.1	98.2			11.1
	Triclopyr	75.8		97.5	116			17.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1909055, 1909056, 1909057, 1909058
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1909055, 1909056, 1909057, 1909058
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1909055, 1909056, 1909057, 1909058

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/27/2017	06/28/2017	Mohammad Ghaffari	06/28/2017	Mohammad Ghaffari	1909055, 1909056, 1909057, 1909058
USGS O-2060-01	06/27/2017	06/29/2017	Hoor Shaik	07/11/2017	Juyoung Kim	1909055, 1909056, 1909057, 1909058
	06/27/2017	06/29/2017	Hoor Shaik	07/19/2017	Juyoung Kim	1909055, 1909057