

Chemical Analysis Report

CEN-DIST-2017-02-10-01

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

Event Description: **Kasey Lk/Lk Dot**
Request ID: **RQ-2017-02-06-56**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 24-FEB-2017 09:23



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: Lake Dot @ Center

Collection Date/Time: 02/09/2017 09:29

Field ID: G2CE0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871784	EPA 8321B	Sucralose**	0.066		ug/L	P319661	
	USGS O-2060-01	Diuron	0.0046	I	ug/L	P319620	
		Fenuron	0.0080	U	ug/L	P319620	
		Imidacloprid	0.041		ug/L	P319620	
		Linuron	0.0040	U	ug/L	P319620	
		Acetaminophen**	0.041		ug/L	P319620	
		Carbamazepine**	4.0E-04	U	ug/L	P319620	
		Primidone**	0.0080	U	ug/L	P319620	
		Fluridone**	0.0080		ug/L	P319620	

Ref. Method and Comment:
 USGS O-2060-01: Bentazon = 0.14 ug/L, 2,4-D = 0.021 ug/L and triclopyr = 0.010 I ug/L.

Sample Location: Kasey Lake @ Center

Collection Date/Time: 02/09/2017 10:18

Field ID: G2CE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1871785	EPA 8321B	Sucralose**	0.017	I	ug/L	P319661	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319620	
		Fenuron	0.0080	U	ug/L	P319620	
		Imidacloprid	0.0040	U	ug/L	P319620	
		Linuron	0.0040	U	ug/L	P319620	
		Acetaminophen**	0.0040	U	ug/L	P319620	
		Carbamazepine**	4.0E-04	U	ug/L	P319620	
		Primidone**	0.0080	U	ug/L	P319620	
		Fluridone**	4.0E-04	U	ug/L	P319620	

Ref. Method and Comment:
 USGS O-2060-01: Bentazon = 0.16 ug/L and 2,4-D = 0.0087 I ug/L.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P319661

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P319620

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P319661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	104		P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P319620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	102		P	40 - 140
Carbamazepine	125		P	40 - 140
Diuron	87.2		P	40 - 140
Fenuron	91.2		P	40 - 140
Fluridone	90.4		P	40 - 140
Imidacloprid	88.0		P	40 - 160
Linuron	90.4		P	40 - 140
Primidone	92.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P319661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1872479	Sucralose	61.3	75.1	P/P	40 - 140

Reference Method: USGS O-2060-01

Batch ID: P319620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1871630	Acetaminophen	66.4	76.8	P/P	40 - 140
1871630	Carbamazepine	62.0	56.0	P/P	40 - 140
1871630	Diuron	47.2	44.8	P/P	40 - 140
1871630	Fenuron	50.8	52.4	P/P	40 - 140
1871630	Fluridone	62.2	56.6	P/P	40 - 140
1871630	Imidacloprid	101	108	P/P	40 - 160
1871630	Linuron	78.8	74.4	P/P	40 - 140
1871630	Primidone	57.6	61.6	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P319661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1872479	Sucralose	14.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P319620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1871630	Acetaminophen	14.5	Spike	P	0 - 30
1871630	Carbamazepine	10.2	Spike	P	0 - 30
1871630	Diuron	5.22	Spike	P	0 - 30
1871630	Fenuron	3.10	Spike	P	0 - 30
1871630	Fluridone	8.28	Spike	P	0 - 30
1871630	Imidacloprid	6.50	Spike	P	0 - 30
1871630	Linuron	5.74	Spike	P	0 - 30
1871630	Primidone	6.71	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: 1871784
 Field Sample ID: G2CE0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	74.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	64.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	68.6	P	40 - 160
USGS O-2060-01	Diuron-d6	47.6	P	40 - 150
USGS O-2060-01	Primidone-d5	102	P	40 - 150

Lab Sample ID: 1871785
 Field Sample ID: G2CE0011

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	67.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	69.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	61.4	P	40 - 160
USGS O-2060-01	Diuron-d6	45.6	P	40 - 150
USGS O-2060-01	Primidone-d5	100	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A74453
 Included Lab Sample IDs: 1871784, 1871785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	95.2	92.0	P/P	60 - 150
Carbamazepine	110	104	P/P	60 - 150
Diuron	98.8	96.4	P/P	60 - 150
Fenuron	106	107	P/P	60 - 150
Fluridone	92.8	87.6	P/P	60 - 150
Imidacloprid	97.6	98.8	P/P	60 - 150
Linuron	98.0	105	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A74453

Included Lab Sample IDs: 1871784, 1871785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	114	113	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A74502

Included Lab Sample IDs: 1871784, 1871785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	86.6	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	LCS	Precision SMP	MS
EPA 8321B	Sucralose	104	61.3 75.1			14.1
USGS O-2060-01	Acetaminophen	102	66.4 76.8			14.5
	Carbamazepine	125	62.0 56.0			10.2
	Diuron	87.2	47.2 44.8			5.22
	Fenuron	91.2	50.8 52.4			3.10
	Fluridone	90.4	62.2 56.6			8.28
	Imidacloprid	88.0	101 108			6.50
	Linuron	90.4	78.8 74.4			5.74
	Primidone	92.4	57.6 61.6			6.71

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1871784, 1871785
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1871784, 1871785

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/10/2017	02/14/2017	Mohammad Ghaffari	02/15/2017	Mohammad Ghaffari	1871784, 1871785
USGS O-2060-01	02/10/2017	02/13/2017	Hoor Shaik	02/13/2017	Juyoung Kim	1871784
	02/10/2017	02/13/2017	Hoor Shaik	02/14/2017	Juyoung Kim	1871785