

Chemical Analysis Report

SW-DIST-2018-02-15-01

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

Event Description: **Pinellas LR3- Bishop Creek**
Request ID: **RQ-2018-02-12-25**
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: Liang Lin, Environmental Administrator

Date Certified: 02-MAR-2018 09:37

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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: BISHOP CREEK @ OAKCREST DRIVE

Collection Date/Time: 02/14/2018 09:05

Field ID: G1SW0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1968092	EPA 8321B	2,4-D	0.073		ug/L	P340164	
		Sucralose**	0.34		ug/L	P340023	
		Bentazon	0.023	J	ug/L	P340164	MS
		MCP	0.026	J	ug/L	P340164	MS
		Triclopyr**	0.0040	U	ug/L	P340164	
		Imidacloprid	0.15		ug/L	P340164	
		Diuron	0.0020	U	ug/L	P340164	
		Primidone**	0.0040	U	ug/L	P340164	
		Linuron	0.0040	U	ug/L	P340164	
		Acetaminophen**	0.0080	U	ug/L	P340164	
		Fenuron	0.0080	U	ug/L	P340164	
		Carbamazepine**	4.9E-04	I	ug/L	P340164	
		Fluridone**	0.47		ug/L	P340164	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for fluridone could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: BISHOP CREEK @ HARBOR LAKES

Collection Date/Time: 02/14/2018 09:53

Field ID: G1SW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1968093	EPA 8321B	2,4-D	0.0020	U	ug/L	P340164	
		Sucralose**	0.12		ug/L	P340169	
		Bentazon	0.033		ug/L	P340164	MS
		MCP	0.0020	U	ug/L	P340164	MS
		Triclopyr**	0.0040	U	ug/L	P340164	
		Imidacloprid	0.013		ug/L	P340164	
		Diuron	0.0020	U	ug/L	P340164	
		Primidone**	0.0040	U	ug/L	P340164	
		Linuron	0.0040	U	ug/L	P340164	
		Acetaminophen**	0.0080	U	ug/L	P340164	
		Fenuron	0.0080	U	ug/L	P340164	
		Carbamazepine**	4.0E-04	U	ug/L	P340164	
		Fluridone**	0.70		ug/L	P340164	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for fluridone 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: P340023

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P340164

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
Imidacloprid	0.0020	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

Reference Method: EPA 8321B
Batch ID: P340169

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P340023

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.1		P	40 - 150
Acetaminophen	113		P	30 - 150
Bentazon	128		P	30 - 150
Carbamazepine	104		P	40 - 150
Diuron	93.0		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	89.6		P	40 - 150
Imidacloprid	105		P	40 - 160
Linuron	100		P	40 - 150
MCPP	75.6		P	40 - 150
Primidone	120		P	40 - 150
Triclopyr	77.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	92.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P340023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967901	Sucralose	100	96.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968092	2,4-D	58.9	69.4	P/P	40 - 150
1968092	Acetaminophen	119	114	P/P	30 - 150
1968092	Bentazon	22.8	25.4	F/F	30 - 150
1968092	Carbamazepine	90.3	88.6	P/P	40 - 150
1968092	Diuron	72.4	66.6	P/P	40 - 150
1968092	Fenuron	95.9	92.7	P/P	40 - 150
1968092	Imidacloprid	106	102	P/P	40 - 160
1968092	Linuron	81.2	76.1	P/P	40 - 150
1968092	MCPD	31.4	29.8	F/F	40 - 150
1968092	Primidone	110	103	P/P	40 - 150
1968092	Triclopyr	51.1	54.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1968429	Sucralose	93.4	99.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P340023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967901	Sucralose	2.06	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P340164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968092	2,4-D	6.77	Spike	P	0 - 30
1968092	Acetaminophen	4.36	Spike	P	0 - 30
1968092	Bentazon	4.77	Spike	P	0 - 30
1968092	Carbamazepine	1.87	Spike	P	0 - 30
1968092	Diuron	8.36	Spike	P	0 - 30
1968092	Fenuron	3.33	Spike	P	0 - 30
1968092	Imidacloprid	1.30	Spike	P	0 - 30
1968092	Linuron	6.55	Spike	P	0 - 30
1968092	MCPD	2.56	Spike	P	0 - 30
1968092	Primidone	6.48	Spike	P	0 - 30
1968092	Triclopyr	5.52	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P340169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968429	Sucralose	6.58	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: 1968092
Field Sample ID: G1SW0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	46.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.3	P	30 - 160
EPA 8321B	Diuron-d6	75.4	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160

Lab Sample ID: 1968093
Field Sample ID: G1SW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	62.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	137	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.6	P	30 - 160
EPA 8321B	Diuron-d6	81.2	P	30 - 160
EPA 8321B	Primidone-d5	121	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A82169
Included Lab Sample IDs: 1968092

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	96.9	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A82189
Included Lab Sample IDs: 1968093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.8	88.7	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A82285

Included Lab Sample IDs: 1968092, 1968093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.4	98.3	P/P	50 - 150
Acetaminophen	122	109	P/P	60 - 150
Bentazon	121	98.9	P/P	50 - 150
Carbamazepine	98.3	105	P/P	60 - 150
Diuron	123	128	P/P	60 - 150
Fenuron	120	119	P/P	60 - 150
Fluridone	108	112	P/P	60 - 160
Imidacloprid	110	114	P/P	60 - 150
Linuron	118	121	P/P	60 - 150
MCP	92.9	94.0	P/P	50 - 150
Primidone	116	118	P/P	60 - 150
Triclopyr	105	117	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	89.1	58.9 69.4			6.77
	Acetaminophen	113	119 114			4.36
	Bentazon	128	22.8 25.4			4.77
	Carbamazepine	104	90.3 88.6			1.87
	Diuron	93.0	72.4 66.6			8.36
	Fenuron	120	95.9 92.7			3.33
	Fluridone	89.6				
	Imidacloprid	105	106 102			1.30
	Linuron	100	81.2 76.1			6.55
	MCP	75.6	31.4 29.8			2.56
	Primidone	120	110 103			6.48
	Sucralose	97.4	100 96.9			2.06
	Sucralose	92.7	93.4 99.7			6.58
	Triclopyr	77.8	51.1 54.0			5.52

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

1968092, 1968093
1968092, 1968093

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/15/2018	02/16/2018	Julie Michelle Frank	02/17/2018	Juyoung Kim	1968092
	02/15/2018	02/20/2018	Hoor Shaik	02/21/2018	Julie Michelle Frank	1968092, 1968093
	02/15/2018	02/20/2018	Hoor Shaik	02/22/2018	Julie Michelle Frank	1968092, 1968093
	02/15/2018	02/20/2018	Julie Michelle Frank	02/21/2018	Juyoung Kim	1968093