

Chemical Analysis Report

SW-DIST-2019-04-19-02

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

Event Description: **Baker Creek**
Request ID: **RQ-2019-04-08-54**
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
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 02-MAY-2019 13:09

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" in "Tate".

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 by the Florida Department of Health Environmental Laboratory Certification Program 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 @ Thonotosassa Rd

Collection Date/Time: 04/18/2019 09:20

Field ID: G2SW0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2079815	EPA 8321B	2,4-D	0.018		ug/L	P362343	
		Acesulfame K**	0.19	I	ug/L	P362544	MS
		AMPA**	1.3		ug/L	P362544	
		Sucralose**	0.37		ug/L	P362544	
		Acetaminophen**	0.0080	U	ug/L	P362343	
		Endothall**	0.25	U	ug/L	P362544	
		Glufosinate**	0.10	U	ug/L	P362544	
		Bentazon	0.017		ug/L	P362343	
		Glyphosate**	2.1		ug/L	P362544	
		Carbamazepine**	8.0E-04	U	ug/L	P362343	
		Diuron	0.0095		ug/L	P362343	
		Fenuron	0.016	U	ug/L	P362343	
		Fluridone**	0.0056		ug/L	P362343	
		Imazapyr**	0.073		ug/L	P362343	
		Hydrocodone**	0.0020	U	ug/L	P362343	
		Ibuprofen**	0.020	U	ug/L	P362343	
		Imidacloprid	0.041		ug/L	P362343	MS
		Linuron	0.0040	U	ug/L	P362343	
		MCPP	0.0048	I	ug/L	P362343	
		Naproxen**	0.0080	U	ug/L	P362343	
		Primidone**	0.0040	U	ug/L	P362343	
		Pyraclostrobin**	0.0020	U	ug/L	P362343	
		Triclopyr**	0.0040	U	ug/L	P362343	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P362343

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	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
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P362544

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P362343

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	86.2		P	40 - 150
Acetaminophen	83.1		P	30 - 150
Bentazon	83.4		P	30 - 150
Carbamazepine	81.0		P	40 - 150
Diuron	82.1		P	40 - 150
Fenuron	93.8		P	40 - 150
Fluridone	120		P	40 - 150
Hydrocodone	110		P	40 - 150
Ibuprofen	83.3		P	40 - 150
Imazapyr	85.5		P	40 - 150
Imidacloprid	97.9		P	40 - 150
Linuron	75.2		P	40 - 150
MCPP	97.9		P	40 - 150
Naproxen	76.6		P	40 - 150
Primidone	95.6		P	40 - 150
Pyraclostrobin	70.0		P	40 - 150
Triclopyr	75.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362544

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	110		P	40 - 150
AMPA	120		P	40 - 150
Endothall	118		P	40 - 150
Glufosinate	128		P	40 - 150
Glyphosate	125		P	40 - 140
Sucralose	98.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P362343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079441	2,4-D	98.0	81.8	P/P	40 - 150
2079441	Acetaminophen	80.9	79.6	P/P	30 - 150
2079441	Bentazon	56.9	52.0	P/P	30 - 150
2079441	Carbamazepine	92.7	85.8	P/P	40 - 150
2079441	Diuron	72.6	71.6	P/P	40 - 150
2079441	Fenuron	116	111	P/P	40 - 150
2079441	Fluridone	117	122	P/P	40 - 150
2079441	Hydrocodone	107	102	P/P	40 - 150
2079441	Ibuprofen	87.2	78.2	P/P	40 - 150
2079441	Imazapyr	92.8	85.9	P/P	40 - 150
2079441	Imidacloprid	154	122	F/P	40 - 150
2079441	Linuron	79.6	81.1	P/P	40 - 150
2079441	MCPP	107	99.0	P/P	40 - 150
2079441	Naproxen	62.2	66.5	P/P	40 - 150
2079441	Primidone	89.6	90.7	P/P	40 - 150
2079441	Pyraclostrobin	65.5	68.2	P/P	40 - 150
2079441	Triclopyr	75.4	62.5	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P362544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079736	Acesulfame K	187	184	F/F	40 - 150
2079736	AMPA	134	131	P/P	40 - 150
2079736	Endothall	97.9	96.2	P/P	40 - 150
2079736	Glufosinate	130	128	P/P	40 - 150
2079736	Glyphosate	118	117	P/P	40 - 140
2079736	Sucralose	102	104	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079441	2,4-D	16.6	Spike	P	0 - 30
2079441	Acetaminophen	1.65	Spike	P	0 - 30
2079441	Bentazon	5.47	Spike	P	0 - 30
2079441	Carbamazepine	7.29	Spike	P	0 - 30
2079441	Diuron	1.36	Spike	P	0 - 30
2079441	Fenuron	3.79	Spike	P	0 - 30
2079441	Fluridone	2.62	Spike	P	0 - 30
2079441	Hydrocodone	4.57	Spike	P	0 - 30
2079441	Ibuprofen	10.9	Spike	P	0 - 30
2079441	Imazapyr	4.83	Spike	P	0 - 30
2079441	Imidacloprid	19.3	Spike	P	0 - 30
2079441	Linuron	1.78	Spike	P	0 - 30
2079441	MCPP	7.34	Spike	P	0 - 30
2079441	Naproxen	6.69	Spike	P	0 - 30
2079441	Primidone	1.16	Spike	P	0 - 30
2079441	Pyraclostrobin	4.04	Spike	P	0 - 30
2079441	Triclopyr	18.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P362544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079736	Acesulfame K	1.51	Spike	P	0 - 30
2079736	AMPA	2.13	Spike	P	0 - 30
2079736	Endothall	1.79	Spike	P	0 - 30
2079736	Glufosinate	1.06	Spike	P	0 - 30
2079736	Glyphosate	0.940	Spike	P	0 - 30
2079736	Sucralose	2.24	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: 2079815
Field Sample ID: G2SW0012

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	118	P	30 - 160
EPA 8321B	Diuron-d6	90.9	P	30 - 160
EPA 8321B	Endothall-d6	83.6	P	30 - 160
EPA 8321B	Endothall-d6	83.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	139	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	139	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.5	P	30 - 160
EPA 8321B	Primidone-d5	96.8	P	30 - 160
EPA 8321B	Sucralose-d6	93.9	P	30 - 160
EPA 8321B	Sucralose-d6	93.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A90917
 Included Lab Sample IDs: 2079815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	128	105	P/P	60 - 160
Glufosinate	117	112	P/P	60 - 160
Glyphosate	115	109	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A90953
 Included Lab Sample IDs: 2079815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	78.3	96.6	P/P	50 - 150
Acetaminophen	114	101	P/P	60 - 160
Bentazon	101	85.0	P/P	50 - 160
Carbamazepine	109	92.2	P/P	60 - 150
Diuron	102	104	P/P	60 - 150
Fenuron	104	107	P/P	60 - 150
Fluridone	97.5	104	P/P	60 - 160
Hydrocodone	102	96.9	P/P	60 - 150
Ibuprofen	107	108	P/P	50 - 160
Imazapyr	102	91.5	P/P	50 - 150
Imidacloprid	109	92.6	P/P	60 - 150
Linuron	100	108	P/P	60 - 150
MCPP	94.8	90.9	P/P	50 - 150
Naproxen	133	82.8	P/P	50 - 160
Primidone	101	113	P/P	60 - 150
Pyraclostrobin	96.3	96.1	P/P	60 - 150
Triclopyr	97.9	98.8	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A90964
 Included Lab Sample IDs: 2079815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	126	144	P/P	60 - 160
Endothall	103	120	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A90985
 Included Lab Sample IDs: 2079815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.7	98.3	P/P	60 - 160

* 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	86.2	98.0	81.8		16.6
	Acesulfame K	110	187	184		1.51
	Acetaminophen	83.1	80.9	79.6		1.65
	AMPA	120	134	131		2.13
	Bentazon	83.4	56.9	52.0		5.47
	Carbamazepine	81.0	92.7	85.8		7.29
	Diuron	82.1	72.6	71.6		1.36
	Endothall	118	97.9	96.2		1.79
	Fenuron	93.8	116	111		3.79
	Fluridone	120	117	122		2.62
	Glufosinate	128	130	128		1.06
	Glyphosate	125	118	117		0.940
	Hydrocodone	110	107	102		4.57
	Ibuprofen	83.3	87.2	78.2		10.9
	Imazapyr	85.5	92.8	85.9		4.83
	Imidacloprid	97.9	154	122		19.3
	Linuron	75.2	79.6	81.1		1.78
	MCPP	97.9	107	99.0		7.34
	Naproxen	76.6	62.2	66.5		6.69
	Primidone	95.6	89.6	90.7		1.16
	Pyraclostrobin	70.0	65.5	68.2		4.04
	Sucralose	98.7	102	104		2.24
	Triclopyr	75.1	75.4	62.5		18.6

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2079815
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2079815

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/19/2019	04/22/2019 10:30	Rebecca Ware	04/22/2019 15:33	Rebecca Ware	2079815
	04/19/2019	04/22/2019 10:30	Rebecca Ware	04/23/2019 12:21	Rebecca Ware	2079815
	04/19/2019	04/22/2019 10:30	Rebecca Ware	04/24/2019 23:13	Rebecca Ware	2079815
	04/19/2019	04/22/2019 14:00	Hoor Shaik	04/24/2019 09:11	Juyoung Kim	2079815