

Chemical Analysis Report

SW-DIST-2019-05-16-04

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

Event Description: **McKay Creek Pinellas Site#27-11**

Request ID: **RQ-2019-05-13-08**

Customer: **SW-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 29-MAY-2019 16:14

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 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: McKAY CREEK @ BLUFF DR. (PC27-11)

Collection Date/Time: 05/15/2019 10:19

Field ID: G5SW0145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086964	EPA 8321B	2,4-D	0.0069	I	ug/L	P364056	
		Acesulfame K**	0.10	U	ug/L	P364189	
		AMPA**	0.18	I	ug/L	P364189	
		Sucralose**	0.34		ug/L	P364189	
		Acetaminophen**	0.0080	U	ug/L	P364056	
		Endothall**	0.25	U	ug/L	P364189	
		Glufosinate**	0.10	U	ug/L	P364189	
		Bentazon	0.043		ug/L	P364056	
		Glyphosate**	0.12	I	ug/L	P364189	
		Carbamazepine**	8.0E-04	U	ug/L	P364056	
		Diuron	0.0020	U	ug/L	P364056	
		Fenuron	0.016	U	ug/L	P364056	
		Fluridone**	0.048		ug/L	P364056	
		Imazapyr**	0.015	I	ug/L	P364056	MS
		Hydrocodone**	0.0020	U	ug/L	P364056	
		Ibuprofen**	0.020	U	ug/L	P364056	
		Imidacloprid	0.013		ug/L	P364056	
		Linuron	0.0040	U	ug/L	P364056	
		MCPP	0.025		ug/L	P364056	MS
		Naproxen**	0.0080	U	ug/L	P364056	
		Primidone**	0.0048	I	ug/L	P364056	
		Pyraclostrobin**	0.0020	U	ug/L	P364056	
		Triclopyr**	0.0040	U	ug/L	P364056	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P364056

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
MCP	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: P364189

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: P364056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	96.7		P	40 - 150
Acetaminophen	85.1		P	30 - 150
Bentazon	112		P	30 - 150
Carbamazepine	97.1		P	40 - 150
Diuron	94.0		P	40 - 150
Fenuron	118		P	40 - 150
Fluridone	99.7		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	82.9		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	73.1		P	40 - 150
MCPP	117		P	40 - 150
Naproxen	97.7		P	40 - 150
Primidone	92.4		P	40 - 150
Pyraclostrobin	82.8		P	40 - 150
Triclopyr	68.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P364189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	138		P	40 - 150
Endothall	120		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	101		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P364056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2087044	2,4-D	119	132	P/P	40 - 150
2087044	Acetaminophen	66.5	70.3	P/P	30 - 150
2087044	Bentazon	88.1	85.4	P/P	30 - 150
2087044	Carbamazepine	74.5	73.2	P/P	40 - 150
2087044	Diuron	69.1	66.3	P/P	40 - 150
2087044	Fenuron	73.9	72.1	P/P	40 - 150
2087044	Fluridone	120	109	P/P	40 - 150
2087044	Hydrocodone	79.7	76.3	P/P	40 - 150
2087044	Ibuprofen	77.4	76.2	P/P	40 - 150
2087044	Imazapyr	157	152	F/F	40 - 150
2087044	Imidacloprid	130	125	P/P	40 - 150
2087044	Linuron	65.4	63.1	P/P	40 - 150
2087044	MCPP	151	154	F/F	40 - 150
2087044	Naproxen	67.0	76.5	P/P	40 - 150
2087044	Primidone	79.8	77.9	P/P	40 - 150
2087044	Pyraclostrobin	93.7	92.5	P/P	40 - 150
2087044	Triclopyr	96.8	113	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P364189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2087406	Acesulfame K	115	116	P/P	40 - 150
2087406	AMPA	128	129	P/P	40 - 150
2087406	Endothall	122	119	P/P	40 - 150
2087406	Glufosinate	108	113	P/P	40 - 150
2087406	Glyphosate	102	99.8	P/P	40 - 140
2087406	Sucralose	105	102	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P364056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2087044	2,4-D	6.94	Spike	P	0 - 30
2087044	Acetaminophen	5.60	Spike	P	0 - 30
2087044	Bentazon	0.908	Spike	P	0 - 30
2087044	Carbamazepine	1.70	Spike	P	0 - 30
2087044	Diuron	3.54	Spike	P	0 - 30
2087044	Fenuron	2.50	Spike	P	0 - 30
2087044	Fluridone	3.73	Spike	P	0 - 30
2087044	Hydrocodone	4.39	Spike	P	0 - 30
2087044	Ibuprofen	1.46	Spike	P	0 - 30
2087044	Imazapyr	1.08	Spike	P	0 - 30
2087044	Imidacloprid	2.89	Spike	P	0 - 30
2087044	Linuron	3.68	Spike	P	0 - 30
2087044	MCP	1.72	Spike	P	0 - 30
2087044	Naproxen	13.3	Spike	P	0 - 30
2087044	Primidone	2.46	Spike	P	0 - 30
2087044	Pyraclostrobin	1.31	Spike	P	0 - 30
2087044	Triclopyr	15.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P364189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2087406	Acesulfame K	1.06	Spike	P	0 - 30
2087406	AMPA	0.634	Spike	P	0 - 30
2087406	Endothall	2.63	Spike	P	0 - 30
2087406	Glufosinate	4.10	Spike	P	0 - 30
2087406	Glyphosate	2.51	Spike	P	0 - 30
2087406	Sucralose	3.20	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: 2086964
Field Sample ID: G5SW0145

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	128	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.8	P	30 - 160
EPA 8321B	Diuron-d6	78.1	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	112	P	30 - 160
EPA 8321B	Primidone-d5	93.8	P	30 - 160
EPA 8321B	Sucralose-d6	55.5	P	30 - 160
EPA 8321B	Sucralose-d6	55.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A91553
 Included Lab Sample IDs: 2086964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.2	93.3	P/P	60 - 160
Glufosinate	95.1	103	P/P	60 - 160
Glyphosate	94.1	91.9	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A91586
 Included Lab Sample IDs: 2086964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.0	101	P/P	60 - 160
Endothall	127	123	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A91622
 Included Lab Sample IDs: 2086964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.8	94.3	P/P	50 - 150
Acetaminophen	101	103	P/P	60 - 160
Bentazon	106	107	P/P	50 - 160
Carbamazepine	103	102	P/P	60 - 150
Diuron	107	106	P/P	60 - 150
Fenuron	107	107	P/P	60 - 150
Fluridone	104	101	P/P	60 - 160
Hydrocodone	106	107	P/P	60 - 150
Ibuprofen	104	111	P/P	50 - 160
Imazapyr	107	104	P/P	50 - 150
Imidacloprid	97.1	94.9	P/P	60 - 150
Linuron	99.6	103	P/P	60 - 150
MCPP	90.4	98.5	P/P	50 - 150
Naproxen	108	94.4	P/P	50 - 160
Primidone	103	98.3	P/P	60 - 150
Pyraclostrobin	102	104	P/P	60 - 150
Triclopyr	97.8	92.4	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A91646
 Included Lab Sample IDs: 2086964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	109	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	
					LCS	SMP
EPA 8321B	2,4-D	96.7	119	132		6.94
	Acesulfame K	111	115	116		1.06
	Acetaminophen	85.1	66.5	70.3		5.60
	AMPA	138	128	129		0.634
	Bentazon	112	88.1	85.4		0.908
	Carbamazepine	97.1	74.5	73.2		1.70
	Diuron	94.0	69.1	66.3		3.54
	Endothall	120	122	119		2.63
	Fenuron	118	73.9	72.1		2.50
	Fluridone	99.7	120	109		3.73
	Glufosinate	110	108	113		4.10
	Glyphosate	107	102	99.8		2.51
	Hydrocodone	105	79.7	76.3		4.39
	Ibuprofen	82.9	77.4	76.2		1.46
	Imazapyr	103	157	152		1.08
	Imidacloprid	102	130	125		2.89
	Linuron	73.1	65.4	63.1		3.68
	MCPP	117	151	154		1.72
	Naproxen	97.7	67.0	76.5		13.3
	Primidone	92.4	79.8	77.9		2.46
	Pyraclostrobin	82.8	93.7	92.5		1.31
	Sucralose	101	105	102		3.20
	Triclopyr	68.8	96.8	113		15.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2086964
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2086964

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/16/2019	05/17/2019 10:00	Hoor Shaik	05/21/2019 14:48	Juyoung Kim	2086964
	05/16/2019	05/20/2019 10:30	Rebecca Ware	05/20/2019 12:56	Rebecca Ware	2086964
	05/16/2019	05/20/2019 10:30	Rebecca Ware	05/21/2019 12:23	Rebecca Ware	2086964
	05/16/2019	05/20/2019 10:30	Rebecca Ware	05/24/2019 03:07	Rebecca Ware	2086964