

Chemical Analysis Report

WQAP-2020-11-04-05

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

Event Description: **Lake Jackson**
Request ID: **RQ-2020-09-14-09**
Customer: **WQAP**
Project ID: **LK-JACKSON**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-NOV-2020 16:48

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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 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: Jumping Gulley Creek

Collection Date/Time: 11/04/2020 12:35

Field ID: G1TLHR0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2206427	EPA 8321B	2,4-D	0.0020	U	ug/L	P389732	
		Acesulfame K**	0.10	U	ug/L	P389773	MS
		AMPA**	0.27	I	ug/L	P389773	
		Sucralose**	0.10		ug/L	P389773	
		Acetaminophen**	0.0080	U	ug/L	P389732	
		Acetamiprid**	0.0020	U	ug/L	P389732	
		Endothall**	0.25	U	ug/L	P389773	
		Glufosinate**	0.10	U	ug/L	P389773	
		Glyphosate**	0.10	U	ug/L	P389773	
		Afidopyropen**	0.0020	U	ug/L	P389732	
		Bentazon	8.0E-04	U	ug/L	P389732	
		Benzovindiflupyr**	0.0020	U	ug/L	P389732	
		Carbamazepine**	8.0E-04	U	ug/L	P389732	
		Clothianidin**	0.0020	U	ug/L	P389732	
		Dinotefuran**	0.0020	U	ug/L	P389732	
		Diuron	0.16		ug/L	P389732	
		Fenuron	0.016	U	ug/L	P389732	
		Fluridone**	8.0E-04	U	ug/L	P389732	
		Imazapyr**	0.066		ug/L	P389732	
		Hydrocodone**	0.0020	U	ug/L	P389732	
		Ibuprofen**	0.020	U	ug/L	P389732	
		Imidacloprid	0.0020	U	ug/L	P389732	
		Linuron	0.0040	U	ug/L	P389732	
		Mandestrobin**	0.0020	U	ug/L	P389732	
		MCPP	0.0020	U	ug/L	P389732	
		Naproxen**	0.0080	U	ug/L	P389732	
		Primidone**	0.0040	U	ug/L	P389732	
		Pyraclostrobin**	0.0020	U	ug/L	P389732	
		Thiamethoxam**	0.0020	U	ug/L	P389732	
		Tolfenpyrad**	0.0020	UJ	ug/L	P389732	CCV
		Triclopyr**	0.0040	U	ug/L	P389732	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P389732

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P389773

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: P389732

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.8		P	30 - 160
Acetaminophen	54.2		P	30 - 160
Acetamiprid	71.9		P	30 - 160
Afidopyropen	51.4		P	30 - 160
Bentazon	41.8		P	30 - 160
Benzovindiflupyr	56.7		P	30 - 160
Carbamazepine	62.2		P	30 - 160
Clothianidin	88.4		P	30 - 160
Dinotefuran	82.3		P	30 - 160
Diuron	53.8		P	30 - 160
Fenuron	112		P	30 - 160
Fluridone	66.7		P	30 - 160
Hydrocodone	64.6		P	30 - 160
Ibuprofen	81.1		P	30 - 160
Imazapyr	78.6		P	30 - 160
Imidacloprid	86.5		P	30 - 160
Linuron	68.9		P	30 - 160
Mandestrobin	64.2		P	30 - 160
MCPP	65.9		P	30 - 160
Naproxen	48.6		P	30 - 160
Primidone	85.8		P	30 - 160
Pyraclostrobin	47.3		P	30 - 160
Thiamethoxam	83.2		P	30 - 160
Tolfenpyrad	33.7		P	30 - 160
Triclopyr	64.1		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P389773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	102		P	40 - 150
AMPA	90.6		P	40 - 150
Endothall	89.2		P	40 - 150
Glufosinate	90.7		P	40 - 150
Glyphosate	102		P	40 - 140
Sucralose	102		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P389732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2206319	2,4-D	55.3	55.1	P/P	30 - 160
2206319	Acetaminophen	34.5	40.1	P/P	30 - 160
2206319	Acetamiprid	56.1	47.3	P/P	30 - 160
2206319	Afidopyropen	43.5	35.2	P/P	30 - 160
2206319	Benzovindiflupyr	54.1	53.0	P/P	30 - 160
2206319	Carbamazepine	54.0	47.3	P/P	30 - 160
2206319	Clothianidin	56.5	59.6	P/P	30 - 160
2206319	Dinotefuran	47.2	53.9	P/P	30 - 160
2206319	Diuron	36.5	35.9	P/P	30 - 160
2206319	Fenuron	60.4	57.8	P/P	30 - 160
2206319	Fluridone	61.3	56.5	P/P	30 - 160
2206319	Hydrocodone	55.6	62.6	P/P	30 - 160
2206319	Ibuprofen	68.0	55.2	P/P	30 - 160
2206319	Imazapyr	78.7	72.7	P/P	30 - 160
2206319	Linuron	65.8	63.1	P/P	30 - 160
2206319	Mandestrobin	59.1	58.4	P/P	30 - 160
2206319	MCCP	59.4	56.3	P/P	30 - 160
2206319	Naproxen	45.4	50.3	P/P	30 - 160
2206319	Primidone	66.7	72.9	P/P	30 - 160
2206319	Pyraclostrobin	48.5	47.3	P/P	30 - 160
2206319	Thiamethoxam	75.7	72.9	P/P	30 - 160
2206319	Tolfenpyrad	47.7	41.2	P/P	30 - 160
2206319	Triclopyr	47.7	51.8	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P389773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2206287	Acesulfame K	19.8	19.6	F/F	40 - 150
2206287	AMPA	75.0	73.1	P/P	40 - 150
2206287	Endothall	92.7	94.1	P/P	40 - 150
2206287	Glufosinate	89.9	85.8	P/P	40 - 150
2206287	Glyphosate	82.5	81.6	P/P	40 - 140
2206287	Sucralose	116	105	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P389732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206319	2,4-D	0.336	Spike	P	0 - 30
2206319	Acetaminophen	15.0	Spike	P	0 - 30
2206319	Acetamiprid	17.1	Spike	P	0 - 30
2206319	Afidopyropen	21.2	Spike	P	0 - 30
2206319	Benzovindiflupyr	2.13	Spike	P	0 - 30
2206319	Carbamazepine	9.73	Spike	P	0 - 30
2206319	Clothianidin	5.22	Spike	P	0 - 30
2206319	Dinotefuran	10.7	Spike	P	0 - 30
2206319	Diuron	1.69	Spike	P	0 - 30
2206319	Fenuron	4.43	Spike	P	0 - 30
2206319	Fluridone	6.37	Spike	P	0 - 30
2206319	Hydrocodone	11.9	Spike	P	0 - 30
2206319	Ibuprofen	20.7	Spike	P	0 - 30
2206319	Imazapyr	4.46	Spike	P	0 - 30
2206319	Imidacloprid	7.08	Spike	P	0 - 30
2206319	Linuron	4.08	Spike	P	0 - 30
2206319	Mandestrobin	1.23	Spike	P	0 - 30
2206319	MCPP	5.42	Spike	P	0 - 30
2206319	Naproxen	10.2	Spike	P	0 - 30
2206319	Primidone	6.47	Spike	P	0 - 30
2206319	Pyraclostrobin	2.60	Spike	P	0 - 30
2206319	Thiamethoxam	3.86	Spike	P	0 - 30
2206319	Tolfenpyrad	14.6	Spike	P	0 - 30
2206319	Triclopyr	8.26	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P389773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2206287	Acesulfame K	0.976	Spike	P	0 - 30
2206287	AMPA	1.82	Spike	P	0 - 30
2206287	Endothall	1.45	Spike	P	0 - 30
2206287	Glufosinate	4.72	Spike	P	0 - 30
2206287	Glyphosate	0.575	Spike	P	0 - 30
2206287	Sucralose	9.43	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2206427

Field Sample ID: G1TLHR0033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	42.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.0	P	30 - 160
EPA 8321B	Diuron-d6	41.2	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.5	P	30 - 160
EPA 8321B	Primidone-d5	62.5	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A102008
Included Lab Sample IDs: 2206427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	114	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A102036
Included Lab Sample IDs: 2206427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	104	P/P	50 - 150
Acetaminophen	109	109	P/P	60 - 160
Acetamiprid	107	114	P/P	50 - 150
Afidopyropen	88.1	81.5	P/P	50 - 150
Bentazon	78.9	85.4	P/P	50 - 160
Benzovindiflupyr	105	108	P/P	50 - 150
Carbamazepine	92.1	93.0	P/P	60 - 150
Clothianidin	102	114	P/P	60 - 150
Dinotefuran	101	99.5	P/P	50 - 150
Diuron	80.8	87.0	P/P	60 - 160
Fenuron	111	113	P/P	60 - 150
Fluridone	96.1	99.1	P/P	60 - 160
Hydrocodone	109	109	P/P	60 - 150
Ibuprofen	87.2	97.9	P/P	50 - 160
Imazapyr	106	103	P/P	50 - 160
Imidacloprid	101	85.2	P/P	60 - 150
Linuron	89.6	100	P/P	60 - 150
Mandestrobin	95.5	97.2	P/P	50 - 150
MCPP	98.2	90.7	P/P	50 - 150
Naproxen	90.9	130	P/P	50 - 160
Primidone	102	109	P/P	60 - 150
Pyraclostrobin	105	111	P/P	60 - 150
Thiamethoxam	108	104	P/P	50 - 150
Tolfenpyrad	150	151*	P/F	60 - 150
Triclopyr	86.7	93.3	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A102055
Included Lab Sample IDs: 2206427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.2	88.6	P/P	50 - 160
Glufosinate	94.8	95.9	P/P	50 - 160
Glyphosate	101	105	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A102056
Included Lab Sample IDs: 2206427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	122	101	P/P	50 - 160
Endothall	102	102	P/P	60 - 160

Quality Assurance Report

Calibration Verification

* 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	60.8	55.3	55.1		0.336
	Acesulfame K	102	19.8	19.6		0.976
	Acetaminophen	54.2	40.1	34.5		15.0
	Acetamiprid	71.9	47.3	56.1		17.1
	Afidopyropen	51.4	43.5	35.2		21.2
	AMPA	90.6	75.0	73.1		1.82
	Bentazon	41.8				
	Benzovindiflupyr	56.7	54.1	53.0		2.13
	Carbamazepine	62.2	47.3	54.0		9.73
	Clothianidin	88.4	59.6	56.5		5.22
	Dinotefuran	82.3	53.9	47.2		10.7
	Diuron	53.8	36.5	35.9		1.69
	Endothall	89.2	92.7	94.1		1.45
	Fenuron	112	57.8	60.4		4.43
	Fluridone	66.7	61.3	56.5		6.37
	Glufosinate	90.7	89.9	85.8		4.72
	Glyphosate	102	82.5	81.6		0.575
	Hydrocodone	64.6	62.6	55.6		11.9
	Ibuprofen	81.1	68.0	55.2		20.7
	Imazapyr	78.6	78.7	72.7		4.46
	Imidacloprid	86.5				7.08
	Linuron	68.9	65.8	63.1		4.08
	Mandestrobin	64.2	59.1	58.4		1.23
	MCPP	65.9	59.4	56.3		5.42
	Naproxen	48.6	45.4	50.3		10.2
	Primidone	85.8	72.9	66.7		6.47
	Pyraclostrobin	47.3	48.5	47.3		2.60
	Sucralose	102	116	105		9.43
	Thiamethoxam	83.2	72.9	75.7		3.86
	Tolfenpyrad	33.7	47.7	41.2		14.6
	Triclopyr	64.1	47.7	51.8		8.26

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2206427
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2206427

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/04/2020	11/05/2020 09:00	Hoor Shaik	11/06/2020 14:35	Juyoung Kim	2206427
	11/04/2020	11/05/2020 10:00	Rebecca Ware	11/05/2020 15:27	Rebecca Ware	2206427
	11/04/2020	11/05/2020 10:00	Rebecca Ware	11/06/2020 15:20	Rebecca Ware	2206427
	11/04/2020	11/05/2020 10:00	Rebecca Ware	11/06/2020 19:48	Rebecca Ware	2206427