

Chemical Analysis Report

SE-DIST-2019-11-08-02

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

Event Description: **SMP- Tidal creek project**

Request ID: **RQ-2019-11-04-29**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

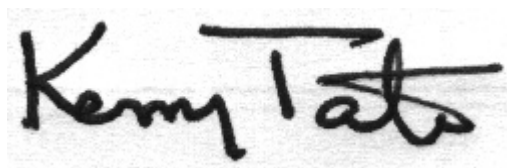
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 25-NOV-2019 11:10

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 first name.

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: Tidal Creek to Lox

Collection Date/Time: 11/07/2019 11:45

Field ID: G2SE0027

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2134963	EPA 8321B	2,4-D	0.0055	I	ug/L	P373857	
		Acesulfame K**	0.10	U	ug/L	P373995	
		AMPA**	0.10	U	ug/L	P373995	
		Sucralose**	0.10	U	ug/L	P373995	
		Acetaminophen**	0.0080	U	ug/L	P373857	
		Acetamiprid**	0.0020	U	ug/L	P373857	
		Endothall**	0.25	U	ug/L	P373995	
		Glufosinate**	0.10	U	ug/L	P373995	
		Glyphosate**	0.25	I	ug/L	P373995	
		Afidopyropen**	0.0020	UJ	ug/L	P373857	
		Bentazon	0.13		ug/L	P373857	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P373857	
		Carbamazepine**	8.0E-04	U	ug/L	P373857	
		Clothianidin**	0.0038	I	ug/L	P373857	
		Dinotefuran**	0.0044	I	ug/L	P373857	
		Diuron	0.0020	U	ug/L	P373857	
		Fenuron	0.016	U	ug/L	P373857	
		Fluridone**	0.015		ug/L	P373857	
		Imazapyr**	0.093		ug/L	P373857	
		Hydrocodone**	0.0020	U	ug/L	P373857	
		Ibuprofen**	0.020	U	ug/L	P373857	
		Imidacloprid	0.048		ug/L	P373857	MS
		Linuron	0.0040	U	ug/L	P373857	
		Mandestrobin**	0.0020	UJ	ug/L	P373857	
		MCPP	0.0020	U	ug/L	P373857	
		Naproxen**	0.0080	U	ug/L	P373857	
		Primidone**	0.0040	U	ug/L	P373857	
		Pyraclostrobin**	0.0020	U	ug/L	P373857	
		Thiamethoxam**	0.0020	U	ug/L	P373857	
		Tolfenpyrad**	0.0020	U	ug/L	P373857	
		Triclopyr**	0.0040	U	ug/L	P373857	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P373857

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: P373995

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: P373857

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	40 - 160
Acetaminophen	100		P	30 - 160
Acetamiprid	81.3		P	40 - 160
Afidopyropen	81.8		P	40 - 160
Bentazon	83.5		P	30 - 160
Benzovindiflupyr	92.3		P	40 - 160
Carbamazepine	110		P	40 - 160
Clothianidin	95.4		P	40 - 160
Dinotefuran	84.5		P	40 - 160
Diuron	87.1		P	40 - 160
Fenuron	98.6		P	40 - 160
Fluridone	92.5		P	40 - 160
Hydrocodone	103		P	40 - 160
Ibuprofen	84.0		P	30 - 160
Imazapyr	80.7		P	40 - 160
Imidacloprid	93.4		P	40 - 160
Linuron	88.8		P	40 - 160
Mandestrobin	92.2		P	40 - 160
MCPP	135		P	40 - 160
Naproxen	69.0		P	40 - 160
Primidone	91.3		P	40 - 160
Pyraclostrobin	79.4		P	30 - 160
Thiamethoxam	101		P	40 - 160
Tolfenpyrad	51.2		P	40 - 160
Triclopyr	99.9		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	123		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	89.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P373857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134998	2,4-D	128	133	P/P	40 - 160
2134998	Acetaminophen	104	97.0	P/P	30 - 160
2134998	Acetamiprid	89.7	88.1	P/P	40 - 160
2134998	Afidopyropen	96.6	92.1	P/P	40 - 160
2134998	Bentazon	71.9	77.1	P/P	30 - 160
2134998	Benzovindiflupyr	99.1	89.9	P/P	40 - 160
2134998	Carbamazepine	102	93.3	P/P	40 - 160
2134998	Clothianidin	95.0	87.9	P/P	40 - 160
2134998	Dinotefuran	99.5	101	P/P	40 - 160
2134998	Diuron	79.8	80.0	P/P	40 - 160
2134998	Fenuron	102	98.8	P/P	40 - 160
2134998	Fluridone	93.0	96.4	P/P	40 - 160
2134998	Hydrocodone	111	111	P/P	40 - 160
2134998	Ibuprofen	84.8	82.7	P/P	30 - 160
2134998	Imazapyr	125	100	P/P	40 - 160
2134998	Imidacloprid	164	137	F/P	40 - 160
2134998	Linuron	85.9	86.9	P/P	40 - 160
2134998	Mandestrobin	92.4	91.8	P/P	40 - 160
2134998	MCP	134	138	P/P	40 - 160
2134998	Naproxen	67.3	59.1	P/P	40 - 160
2134998	Primidone	97.4	107	P/P	40 - 160
2134998	Pyraclostrobin	79.2	75.9	P/P	30 - 160
2134998	Thiamethoxam	140	128	P/P	40 - 160
2134998	Tolfenpyrad	53.2	62.7	P/P	40 - 160
2134998	Triclopyr	106	113	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P373995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2134903	Acesulfame K	125	118	P/P	40 - 150
2134903	AMPA	106	117	P/P	40 - 150
2134903	Endothall	126	127	P/P	40 - 150
2134903	Glufosinate	122	109	P/P	40 - 150
2134903	Glyphosate	96.3	101	P/P	40 - 140
2134903	Sucralose	107	92.3	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P373857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134998	2,4-D	3.68	Spike	P	0 - 30
2134998	Acetaminophen	7.22	Spike	P	0 - 30
2134998	Acetamiprid	1.82	Spike	P	0 - 30
2134998	Afidopyropen	4.77	Spike	P	0 - 30
2134998	Bentazon	5.65	Spike	P	0 - 30
2134998	Benzovindiflupyr	9.78	Spike	P	0 - 30
2134998	Carbamazepine	8.53	Spike	P	0 - 30
2134998	Clothianidin	7.46	Spike	P	0 - 30
2134998	Dinotefuran	1.87	Spike	P	0 - 30
2134998	Diuron	0.273	Spike	P	0 - 30
2134998	Fenuron	3.09	Spike	P	0 - 30
2134998	Fluridone	3.52	Spike	P	0 - 30
2134998	Hydrocodone	0.456	Spike	P	0 - 30
2134998	Ibuprofen	2.51	Spike	P	0 - 30
2134998	Imazapyr	22.3	Spike	P	0 - 30
2134998	Imidacloprid	18.0	Spike	P	0 - 30
2134998	Linuron	1.17	Spike	P	0 - 30
2134998	Mandestrobin	0.630	Spike	P	0 - 30
2134998	MCPP	3.28	Spike	P	0 - 30
2134998	Naproxen	13.0	Spike	P	0 - 30
2134998	Primidone	9.72	Spike	P	0 - 30
2134998	Pyraclostrobin	4.33	Spike	P	0 - 30
2134998	Thiamethoxam	9.00	Spike	P	0 - 30
2134998	Tolfenpyrad	16.3	Spike	P	0 - 30
2134998	Triclopyr	5.99	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P373995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2134903	Acesulfame K	5.62	Spike	P	0 - 30
2134903	AMPA	10.3	Spike	P	0 - 30
2134903	Endothall	1.17	Spike	P	0 - 30
2134903	Glufosinate	11.6	Spike	P	0 - 30
2134903	Glyphosate	4.77	Spike	P	0 - 30
2134903	Sucralose	14.4	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2134963
Field Sample ID: G2SE0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.6	P	30 - 160
EPA 8321B	Diuron-d6	76.1	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	103	P	30 - 160
EPA 8321B	Primidone-d5	94.2	P	30 - 160
EPA 8321B	Sucralose-d6	36.7	P	30 - 160
EPA 8321B	Sucralose-d6	36.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A95768
Included Lab Sample IDs: 2134963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	107	102	P/P	60 - 160
Glufosinate	119	118	P/P	60 - 160
Glyphosate	131	121	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95769
Included Lab Sample IDs: 2134963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.6	85.9	P/P	60 - 160
Endothall	96.6	108	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A95779
Included Lab Sample IDs: 2134963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	111	P/P	50 - 150
Acetaminophen	108	109	P/P	60 - 160
Acetamiprid	105	106	P/P	50 - 150
Afidopyropen	112	99.7	P/P	50 - 150
Bentazon	108	112	P/P	50 - 160
Benzovindiflupyr	115	122	P/P	50 - 150
Carbamazepine	116	87.0	P/P	60 - 150
Clothianidin	85.4	99.0	P/P	60 - 150
Dinotefuran	94.7	95.5	P/P	50 - 150
Diuron	108	100	P/P	60 - 150
Fenuron	116	113	P/P	60 - 150
Fluridone	112	113	P/P	60 - 160
Hydrocodone	109	113	P/P	60 - 150
Ibuprofen	89.4	94.5	P/P	50 - 160
Imazapyr	105	111	P/P	50 - 150
Imidacloprid	106	101	P/P	60 - 150
Linuron	114	115	P/P	60 - 150
Mandestrobin	114	113	P/P	50 - 150
MCPP	103	100	P/P	50 - 150
Naproxen	109	84.9	P/P	50 - 160
Primidone	102	93.6	P/P	60 - 150
Pyraclostrobin	88.9	88.6	P/P	60 - 150
Thiamethoxam	99.6	99.7	P/P	50 - 150
Tolfenpyrad	89.3	87.9	P/P	60 - 150
Triclopyr	94.3	90.1	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A95849
Included Lab Sample IDs: 2134963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.9	96.0	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	133	128	133		3.68
	Acesulfame K	115	125	118		5.62
	Acetaminophen	100	104	97.0		7.22
	Acetamiprid	81.3	89.7	88.1		1.82
	Afidopyropen	81.8	96.6	92.1		4.77
	AMPA	123	106	117		10.3
	Bentazon	83.5	71.9	77.1		5.65
	Benzovindiflupyr	92.3	99.1	89.9		9.78
	Carbamazepine	110	102	93.3		8.53
	Clothianidin	95.4	95.0	87.9		7.46
	Dinotefuran	84.5	99.5	101		1.87
	Diuron	87.1	79.8	80.0		0.273
	Endothall	103	126	127		1.17
	Fenuron	98.6	102	98.8		3.09
	Fluridone	92.5	93.0	96.4		3.52
	Glufosinate	110	122	109		11.6
	Glyphosate	107	96.3	101		4.77
	Hydrocodone	103	111	111		0.456
	Ibuprofen	84.0	84.8	82.7		2.51
	Imazapyr	80.7	125	100		22.3
	Imidacloprid	93.4	164	137		18.0
	Linuron	88.8	85.9	86.9		1.17
	Mandestrobin	92.2	92.4	91.8		0.630
	MCPP	135	134	138		3.28
	Naproxen	69.0	67.3	59.1		13.0
	Primidone	91.3	97.4	107		9.72
	Pyraclostrobin	79.4	79.2	75.9		4.33
	Sucralose	89.8	107	92.3		14.4
	Thiamethoxam	101	140	128		9.00
	Tolfenpyrad	51.2	53.2	62.7		16.3
	Triclopyr	99.9	106	113		5.99

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2134963
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2134963

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/08/2019	11/12/2019 10:00	Rebecca Ware	11/12/2019 13:28	Rebecca Ware	2134963
	11/08/2019	11/12/2019 10:00	Rebecca Ware	11/12/2019 16:47	Rebecca Ware	2134963
	11/08/2019	11/12/2019 10:00	Rebecca Ware	11/19/2019 23:45	Rebecca Ware	2134963
	11/08/2019	11/13/2019 10:00	Hoor Shaik	11/15/2019 05:14	Juyoung Kim	2134963
	11/08/2019	11/13/2019 10:00	Hoor Shaik	11/15/2019 16:11	Juyoung Kim	2134963