

Chemical Analysis Report

SO-DIST-2018-09-18-01

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

Event Description: **3240M : Stroud Creek**

Request ID: **RQ-2018-09-03-66**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Date Certified: 04-OCT-2018 16:22



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: STROUD CREEK @ SR78 UP SIDE

Collection Date/Time: 09/17/2018 11:42

Field ID: AD86604

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2026005	EPA 8321B	2,4-D	0.0043	I	ug/L	P351783	
		Bentazon	0.011		ug/L	P351783	
		MCP	0.0020	U	ug/L	P351783	
		Triclopyr**	0.0040	U	ug/L	P351783	
		Imidacloprid	0.0028	I	ug/L	P351783	
		Diuron	0.0020	U	ug/L	P351783	
		Pyraclostrobin**	0.0020	U	ug/L	P351783	
		Primidone**	0.0040	U	ug/L	P351783	
		Linuron	0.0040	U	ug/L	P351783	
		Acetaminophen**	0.0080	U	ug/L	P351783	
		Fenuron	0.016	U	ug/L	P351783	
		Imazapyr**	0.0040	U	ug/L	P351783	
		Carbamazepine**	8.0E-04	U	ug/L	P351783	
		Fluridone**	5.3E-04	I	ug/L	P351783	
		Hydrocodone**	8.0E-04	U	ug/L	P351783	
		Naproxen**	0.0080	U	ug/L	P351783	
		Ibuprofen**	0.020	U	ug/L	P351783	
		Sucralose**	0.049		ug/L	P351652	
		Acesulfame K**	0.10	U	ug/L	P351652	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351652

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P351783

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	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P351652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	91.4		P	40 - 150
Sucralose	122		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	77.6		P	40 - 150
Acetaminophen	77.3		P	30 - 150
Bentazon	70.6		P	30 - 150
Carbamazepine	70.9		P	40 - 150
Diuron	63.7		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	85.5		P	40 - 150
Hydrocodone	89.5		P	40 - 150
Ibuprofen	89.7		P	40 - 150
Imazapyr	74.5		P	40 - 150
Imidacloprid	77.6		P	40 - 160
Linuron	56.8		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	70.2		P	40 - 150
Primidone	63.8		P	40 - 150
Pyraclostrobin	68.4		P	40 - 150
Triclopyr	94.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P351652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	Acesulfame K	54.9	56.4	P/P	40 - 150
2025880	Sucralose	122	127	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2025880	2,4-D	116	95.7	P/P	40 - 150
2025880	Acetaminophen	76.8	91.9	P/P	30 - 150
2025880	Bentazon	81.4	53.0	P/P	30 - 150
2025880	Carbamazepine	55.7	56.8	P/P	40 - 150
2025880	Diuron	45.9	50.3	P/P	40 - 150
2025880	Fenuron	60.5	64.8	P/P	40 - 150
2025880	Fluridone	77.4	91.4	P/P	40 - 150
2025880	Hydrocodone	77.5	93.3	P/P	40 - 150
2025880	Ibuprofen	116	121	P/P	40 - 150
2025880	Imazapyr	79.7	94.2	P/P	40 - 150
2025880	Imidacloprid	96.5	119	P/P	40 - 160
2025880	Linuron	47.2	53.3	P/P	40 - 150
2025880	MCP	127	135	P/P	40 - 150
2025880	Naproxen	92.2	88.3	P/P	40 - 150
2025880	Primidone	62.0	65.9	P/P	40 - 150
2025880	Pyraclostrobin	80.8	93.5	P/P	40 - 150
2025880	Triclopyr	138	135	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P351652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	Acesulfame K	2.84	Spike	P	0 - 30
2025880	Sucralose	1.80	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P351783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2025880	2,4-D	16.6	Spike	P	0 - 30
2025880	Acetaminophen	17.9	Spike	P	0 - 30
2025880	Bentazon	25.0	Spike	P	0 - 30
2025880	Carbamazepine	1.98	Spike	P	0 - 30
2025880	Diuron	9.19	Spike	P	0 - 30
2025880	Fenuron	6.88	Spike	P	0 - 30
2025880	Fluridone	16.4	Spike	P	0 - 30
2025880	Hydrocodone	18.6	Spike	P	0 - 30
2025880	Ibuprofen	4.44	Spike	P	0 - 30
2025880	Imazapyr	9.36	Spike	P	0 - 30
2025880	Imidacloprid	16.1	Spike	P	0 - 30
2025880	Linuron	12.0	Spike	P	0 - 30
2025880	MCP	6.08	Spike	P	0 - 30
2025880	Naproxen	4.32	Spike	P	0 - 30
2025880	Primidone	5.41	Spike	P	0 - 30
2025880	Pyraclostrobin	14.5	Spike	P	0 - 30
2025880	Triclopyr	1.95	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: 2026005
Field Sample ID: AD86604

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	116	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.8	P	30 - 160
EPA 8321B	Diuron-d6	53.5	P	30 - 160
EPA 8321B	Endothall-d6	151	P	40 - 160
EPA 8321B	Ibuprofen-d3	83.6	P	30 - 160
EPA 8321B	Sucralose-d6	149	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A86591
Included Lab Sample IDs: 2026005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	89.6	90.7	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A86652
Included Lab Sample IDs: 2026005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	116	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86696
Included Lab Sample IDs: 2026005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	71.6	77.5	P/P	60 - 160
Carbamazepine	106	103	P/P	60 - 160
Diuron	101	98.9	P/P	60 - 150
Fenuron	95.9	98.5	P/P	60 - 150
Fluridone	108	109	P/P	60 - 160
Hydrocodone	94.0	94.9	P/P	60 - 150
Imazapyr	85.1	70.0	P/P	50 - 150
Imidacloprid	79.9	80.2	P/P	60 - 150
Linuron	99.2	101	P/P	60 - 150
Primidone	72.0	76.5	P/P	60 - 150
Pyraclostrobin	97.8	112	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A86770
Included Lab Sample IDs: 2026005

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.4	118	P/P	50 - 150
Bentazon	94.9	135	P/P	50 - 160
Ibuprofen	89.5	89.8	P/P	50 - 160
MCP	102	110	P/P	50 - 150
Naproxen	70.6	103	P/P	50 - 160
Triclopyr	94.1	123	P/P	50 - 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	MS
EPA 8321B	2,4-D	77.6	116	95.7			16.6
	Acesulfame K	91.4	54.9	56.4			2.84
	Acetaminophen	77.3	76.8	91.9			17.9
	Bentazon	70.6	81.4	53.0			25.0
	Carbamazepine	70.9	55.7	56.8			1.98
	Diuron	63.7	45.9	50.3			9.19
	Fenuron	93.5	60.5	64.8			6.88
	Fluridone	85.5	77.4	91.4			16.4
	Hydrocodone	89.5	77.5	93.3			18.6
	Ibuprofen	89.7	116	121			4.44
	Imazapyr	74.5	79.7	94.2			9.36
	Imidacloprid	77.6	96.5	119			16.1
	Linuron	56.8	47.2	53.3			12.0
	MCPD	101	127	135			6.08
	Naproxen	70.2	92.2	88.3			4.32
	Primidone	63.8	62.0	65.9			5.41
	Pyraclostrobin	68.4	80.8	93.5			14.5
	Sucralose	122	122	127			1.80
	Triclopyr	94.0	138	135			1.95

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2026005

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/18/2018	09/19/2018 15:30	Mohammad Ghaffari	09/19/2018 19:06	Mohammad Ghaffari	2026005
	09/18/2018	09/19/2018 15:30	Mohammad Ghaffari	09/21/2018 20:43	Mohammad Ghaffari	2026005
	09/18/2018	09/20/2018 10:00	Hoor Shaik	09/24/2018 06:08	Mohammad Ghaffari	2026005
	09/18/2018	09/20/2018 10:00	Hoor Shaik	09/27/2018 13:49	Juyoung Kim	2026005