

Chemical Analysis Report

WAS-SECT-2018-08-20-01

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

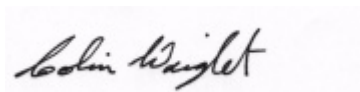
Event Description: **Alligator Creek**
Request ID: **RQ-2018-07-30-18**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Tallahassee, FL 32399
Attn: Curtis Musson

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Certified by: Colin Wright, Program Administrator

Date Certified: 06-SEP-2018 11:47

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 groups are included in this report: Nutrients and 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: Alford Arm Tributary At Miccosukee

Collection Date/Time: 08/20/2018 11:45

Field ID: G1WA0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018318	EPA 180.1 Rev. 2.0	Turbidity	2.2	A	NTU	P350546	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P350843	
		Sulfate	0.20	U	mg SO4/L	P350846	
	SM 2120 B	Color (true)	170		PCU	P350538	
	SM 2320 B-97	Total Alkalinity	8.4		mg CaCO3/L	P350557	
	SM 2540 C-97	TDS	59		mg/L	P350817	
	SM 2540 D-97	TSS	3	I	mg/L	P350808	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P350562	
2018319	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P350690	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P350572	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P350666	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P350611	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P350672	
2018320	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.066		mg P/L	P350533	
2018324	EPA 8321B	2,4-D	0.0060	I	ug/L	P350331	
		Bentazon	0.0021	I	ug/L	P350331	
		MCP	0.0020	UJ	ug/L	P350331	RPD
		Triclopyr**	0.0040	UJ	ug/L	P350331	RPD
		Imidacloprid	0.0020	U	ug/L	P350331	
		Diuron	0.0020	U	ug/L	P350331	
		Pyraclostrobin**	0.0020	U	ug/L	P350331	
		Primidone**	0.0040	U	ug/L	P350331	
		Linuron	0.0040	U	ug/L	P350331	
		Acetaminophen**	0.0080	U	ug/L	P350331	
		Fenuron	0.016	U	ug/L	P350331	
		Imazapyr**	0.0040	U	ug/L	P350331	
		Carbamazepine**	8.0E-04	U	ug/L	P350331	
		Fluridone**	4.0E-04	U	ug/L	P350331	
		Hydrocodone**	8.0E-04	U	ug/L	P350331	
		Naproxen**	0.0080	U	ug/L	P350331	
		Ibuprofen**	0.020	U	ug/L	P350331	
		Sucralose**	0.010	U	ug/L	P350504	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350546

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350843

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350846

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350690

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350572

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350666

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350611

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350533

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P350331

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P350331

Component	Result	Code	Units
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

Reference Method: EPA 8321B
Batch ID: P350504

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P350538

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P350557

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P350817

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P350808

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P350562

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P350672

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P350843

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P350846

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P350690

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P350572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P350666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P350611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P350533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P350331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101	75.1	P/P	40 - 150
Acetaminophen	131	113	P/P	30 - 150
Bentazon	110	99.5	P/P	30 - 150
Carbamazepine	92.3	90.0	P/P	40 - 150
Diuron	91.6	95.4	P/P	40 - 150
Fenuron	117	107	P/P	40 - 150
Fluridone	79.5	76.8	P/P	40 - 150
Hydrocodone	105	101	P/P	40 - 150
Ibuprofen	88.3	81.8	P/P	40 - 150
Imazapyr	102	98.2	P/P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P350331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	113	106	P/P	40 - 160
Linuron	76.1	74.7	P/P	40 - 150
MCPP	109	72.1	P/P	40 - 150
Naproxen	93.1	70.1	P/P	40 - 150
Primidone	109	108	P/P	40 - 150
Pyraclostrobin	78.9	74.0	P/P	40 - 150
Triclopyr	100	64.7	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P350504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P350538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P350557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P350562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P350672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018025	Chloride	94.4		P	90 - 110
2018329	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018025	Sulfate	98.4		P	90 - 110
2018329	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018142	Ammonia-N	97.8	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018319	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018319	NO2NO3-N	99.0	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018141	Total-P	98.7	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018320	O-Phosphate-P	98.5	97.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P350504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2019172	Sucralose	103	106	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P350562

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017977	Fluoride	95.6	96.1	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P350672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2018141	Organic Carbon	99.0	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P350546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018318	Turbidity	1.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018025	Chloride	2.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P350846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018025	Sulfate	2.75	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P350690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018142	Ammonia-N	0.729	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P350572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018319	Kjeldahl Nitrogen	0.583	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P350666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018319	NO2NO3-N	2.99	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P350611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018141	Total-P	0.730	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P350533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018320	O-Phosphate-P	0.488	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P350331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	2,4-D	29.6	LCS	P	0 - 30
LFB	Acetaminophen	15.4	LCS	P	0 - 30
LFB	Bentazon	10.3	LCS	P	0 - 30
LFB	Carbamazepine	2.51	LCS	P	0 - 30
LFB	Diuron	4.14	LCS	P	0 - 30
LFB	Fenuron	8.57	LCS	P	0 - 30
LFB	Fluridone	3.51	LCS	P	0 - 30
LFB	Hydrocodone	3.72	LCS	P	0 - 30
LFB	Ibuprofen	7.63	LCS	P	0 - 30
LFB	Imazapyr	4.06	LCS	P	0 - 30
LFB	Imidacloprid	6.58	LCS	P	0 - 30
LFB	Linuron	1.81	LCS	P	0 - 30
LFB	MCP	40.5	LCS	F	0 - 30
LFB	Naproxen	28.2	LCS	P	0 - 30
LFB	Primidone	1.36	LCS	P	0 - 30
LFB	Pyraclostrobin	6.43	LCS	P	0 - 30
LFB	Triclopyr	42.9	LCS	F	0 - 30

Reference Method: EPA 8321B
 Batch ID: P350504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2019172	Sucralose	2.64	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P350538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018327	Color (true)	1.90	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P350557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017977	Total Alkalinity	0.688	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P350817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018328	TDS	5.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P350562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P350562

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2017977	Fluoride	0.484	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P350672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018141	Organic Carbon	0.245	Spike	P	0 - 20

* 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: 2018324
Field Sample ID: G1WA0066

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.4	P	30 - 160
EPA 8321B	Diuron-d6	58.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.1	P	30 - 160
EPA 8321B	Primidone-d5	77.3	P	30 - 160
EPA 8321B	Sucralose-d6	96.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86033

Included Lab Sample IDs: 2018320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A86034

Included Lab Sample IDs: 2018318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86035

Included Lab Sample IDs: 2018318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	102	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A86040

Included Lab Sample IDs: 2018318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86040

Included Lab Sample IDs: 2018318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86049

Included Lab Sample IDs: 2018318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.1	103	P/P	90 - 110
Sulfate	96.5	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86076

Included Lab Sample IDs: 2018319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86079

Included Lab Sample IDs: 2018319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.5	96.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86085

Included Lab Sample IDs: 2018319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A86088

Included Lab Sample IDs: 2018319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	95.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86096

Included Lab Sample IDs: 2018319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86110

Included Lab Sample IDs: 2018324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	89.4	77.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86112

Included Lab Sample IDs: 2018324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	106	99.9	P/P	50 - 150
Bentazon	150	136	P/P	50 - 160
Ibuprofen	117	88.7	P/P	50 - 160
MCP	112	111	P/P	50 - 150
Naproxen	84.8	133	P/P	50 - 160
Triclopyr	97.8	100	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A86195

Included Lab Sample IDs: 2018324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	106	111	P/P	60 - 150
Carbamazepine	100	98.0	P/P	60 - 150
Diuron	119	122	P/P	60 - 150
Fenuron	108	107	P/P	60 - 150
Fluridone	111	110	P/P	60 - 160
Hydrocodone	110	110	P/P	60 - 150
Imazapyr	95.9	96.9	P/P	50 - 150
Imidacloprid	109	109	P/P	60 - 150
Linuron	104	113	P/P	60 - 150
Primidone	100	105	P/P	60 - 150
Pyraclostrobin	96.6	97.0	P/P	60 - 150

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		LCS	Precision	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						1.35	
EPA 300.0 Rev. 2.1	Chloride	101		94.4	99.2		2.49	
	Sulfate	99.4		98.4	99.3		2.75	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0		97.8	97.0			0.729
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		104	103			0.583
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102		99.0	102			2.99
EPA 365.1 Rev. 2.0	Total-P	102		98.7	99.7			0.730
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3		98.5	97.7			0.488
EPA 8321B	2,4-D	101	75.1			29.6		
	Acetaminophen	131	113			15.4		
	Bentazon	110	99.5			10.3		
	Carbamazepine	92.3	90.0			2.51		
	Diuron	91.6	95.4			4.14		
	Fenuron	117	107			8.57		
	Fluridone	79.5	76.8			3.51		
	Hydrocodone	105	101			3.72		
	Ibuprofen	88.3	81.8			7.63		
	Imazapyr	102	98.2			4.06		
	Imidacloprid	113	106			6.58		
	Linuron	76.1	74.7			1.81		
	MCP	109	72.1			40.5		
	Naproxen	93.1	70.1			28.2		
	Primidone	109	108			1.36		
	Pyraclostrobin	78.9	74.0			6.43		
	Sucralose	89.4		103	106			2.64
	Triclopyr	100	64.7			42.9		
SM 2120 B	Color (true)	98.1					1.90	
SM 2320 B-97	Total Alkalinity	104					0.688	
SM 2540 C-97	TDS						5.16	
SM 4500 F-C-97	Fluoride	95.3		95.6	96.1			0.484
SM 5310 B-00	Organic Carbon	95.8		99.0	99.4			0.245

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2018318
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2018318
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2018318
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2018319
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2018319
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2018319
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2018319
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2018320
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2018324
SM 2120 B / E31780	True Color measured at 450 nm	2018318
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2018318
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2018318

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2018318
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2018318
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2018319

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/20/2018			08/21/2018 16:11	Megan Treadwell	2018318
EPA 300.0 Rev. 2.1	08/20/2018			08/23/2018 17:11	Lipi Saha	2018318
EPA 350.1 Rev. 2.0	08/20/2018			08/23/2018 13:07	Ping Hua	2018319
EPA 351.2 Rev. 2.0	08/20/2018	08/22/2018 10:30	Adrian Shelby	08/23/2018 11:16	Joseph Suarez	2018319
EPA 353.2 Rev. 2.0	08/20/2018			08/23/2018 12:38	Lauren Bottorf	2018319
EPA 365.1 Rev. 2.0	08/20/2018	08/22/2018 13:40	Sima Feizi	08/23/2018 10:42	Beverly Y. Sanders	2018319
EPA 365.1 Rev. 2.0 dissolved	08/20/2018			08/21/2018 14:47	Virginia P. Brown	2018320
EPA 8321B	08/20/2018	08/21/2018 15:00	Hoor Shaik	08/25/2018 12:53	Juyoung Kim	2018324
	08/20/2018	08/21/2018 15:00	Hoor Shaik	08/25/2018 23:09	Juyoung Kim	2018324
	08/20/2018	08/23/2018 12:45	Mohammad Ghaffari	08/24/2018 09:39	Mohammad Ghaffari	2018324
SM 2120 B	08/20/2018			08/21/2018 16:52	William L. Brown IV	2018318
SM 2320 B-97	08/20/2018			08/22/2018 01:50	Dale L. Simmons	2018318
SM 2540 C-97	08/20/2018			08/22/2018 15:33	Yijie Li	2018318
SM 2540 D-97	08/20/2018			08/22/2018 15:33	Yijie Li	2018318
SM 4500 F-C-97	08/20/2018			08/22/2018 01:50	Dale L. Simmons	2018318
SM 5310 B-00	08/20/2018			08/22/2018 21:15	Megan Treadwell	2018319