

Chemical Analysis Report

NE-DIST-2018-04-06-02

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

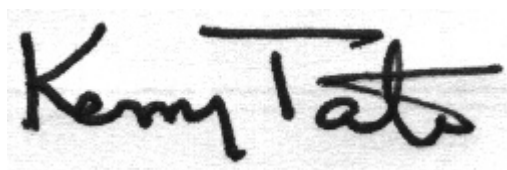
Event Description: **Gville Biology**
Request ID: **RQ-2018-04-02-55**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 04-MAY-2018 11:56

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the 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 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: Possum Cr. Downstream of Culvert under NW 16th Ave **Collection Date/Time: 04/05/2018 11:40**

Field ID: G1NE0900

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981919	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P342952	
	EPA 300.0 Rev. 2.1	Chloride	24	A	mg Cl/L	P343153	
		Sulfate	16	A	mg SO4/L	P343155	
	SM 2120 B	Color (true)	35		PCU	P342929	
	SM 2320 B-97	Total Alkalinity	75	AJ	mg CaCO3/L	P343505	RPD
	SM 2540 C-97	TDS	153		mg/L	P343220	
	SM 2540 D-97	TSS	2	I	mg/L	P343542	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P343509	
1981920	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P343447	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P343085	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.64		mg N/L	P343473	
	EPA 365.1 Rev. 2.0	Total-P	0.80		mg P/L	P343198	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P343323	
1981921	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.75		mg P/L	P342943	
1981930	EPA 8321B	2,4-D	0.0020	U	ug/L	P342880	
		Sucralose**	0.11	U	ug/L	P342827	
		Bentazon	0.0019	I	ug/L	P342880	
		MCP	0.0020	U	ug/L	P342880	
		Triclopyr**	0.0040	U	ug/L	P342880	
		Imidacloprid	0.015		ug/L	P342880	MS
		Diuron	0.0054	I	ug/L	P342880	
		Pyraclostrobin**	0.0020	U	ug/L	P342880	
		Primidone**	0.0040	U	ug/L	P342880	
		Linuron	0.0040	U	ug/L	P342880	
		Acetaminophen**	0.0080	U	ug/L	P342880	MS
		Fenuron	0.016	U	ug/L	P342880	
		Imazapyr**	0.0097	I	ug/L	P342880	
		Carbamazepine**	4.0E-04	U	ug/L	P342880	
		Fluridone**	0.0028	I	ug/L	P342880	
		Hydrocodone**	8.0E-04	U	ug/L	P342880	

Ref. Method and Comment:

SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.

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

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Turkey Creek @ NW 59th

Collection Date/Time: 04/05/2018 10:25

Field ID: G1NE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981931	EPA 8321B	2,4-D	0.0020	U	ug/L	P342880	
		Sucralose**	0.11	U	ug/L	P342827	
		Bentazon	0.0011	I	ug/L	P342880	
		MCP	0.0020	U	ug/L	P342880	
		Triclopyr**	0.0040	U	ug/L	P342880	

Field ID: G1NE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981931	EPA 8321B	Imidacloprid	0.034		ug/L	P342880	MS
		Diuron	8.0		ug/L	P342880	
		Pyraclostrobin**	0.0020	U	ug/L	P342880	
		Primidone**	0.0040	U	ug/L	P342880	
		Linuron	0.0040	U	ug/L	P342880	
		Acetaminophen**	0.0080	U	ug/L	P342880	MS
		Fenuron	0.016	U	ug/L	P342880	
		Imazapyr**	0.032		ug/L	P342880	
		Carbamazepine**	4.0E-04	U	ug/L	P342880	
		Fluridone**	8.0E-04	U	ug/L	P342880	
		Hydrocodone**	8.0E-04	U	ug/L	P342880	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P342952

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P343153

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P343155

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P343447

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P343085

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P343473

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343198

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342943

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

Reference Method: EPA 8321B
Batch ID: P342827

Component	Result	Code	Units
Sucralose	0.11	U	ug/L

Reference Method: EPA 8321B
Batch ID: P342880

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.021	I	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P342929

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343505

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

Reference Method: SM 2540 C-97
Batch ID: P343220

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P343542

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343509

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343323

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: P343153

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343155

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343447

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343473

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: P343198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343198

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P342827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	115		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	100		P	40 - 150
Acetaminophen	120		P	30 - 150
Bentazon	109		P	30 - 150
Carbamazepine	84.9		P	40 - 150
Diuron	65.1		P	40 - 150
Fenuron	124		P	40 - 150
Fluridone	60.3		P	40 - 150
Hydrocodone	112		P	40 - 150
Imazapyr	88.7		P	40 - 150
Imidacloprid	115		P	40 - 160
Linuron	78.1		P	40 - 150
MCPP	92.3		P	40 - 150
Primidone	108		P	40 - 150
Pyraclostrobin	70.8		P	40 - 150
Triclopyr	91.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P343505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P343509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981919	Chloride	97.4		P	90 - 110
1981964	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981919	Sulfate	96.7		P	90 - 110
1981964	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343447

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981878	Ammonia-N	90.3	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981920	Kjeldahl Nitrogen	110	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981881	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981822	O-Phosphate-P	98.5	97.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P342827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981709	Sucralose	51.2	49.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983038	2,4-D	103	106	P/P	40 - 150
1983038	Acetaminophen	162	156	F/F	30 - 150
1983038	Bentazon	36.3	30.2	P/P	30 - 150
1983038	Carbamazepine	105	108	P/P	40 - 150
1983038	Diuron	73.9	71.7	P/P	40 - 150
1983038	Fenuron	110	104	P/P	40 - 150
1983038	Fluridone	47.2	56.1	P/P	40 - 150
1983038	Hydrocodone	123	116	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P342880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983038	Imazapyr	109	92.7	P/P	40 - 150
1983038	Imidacloprid	248	233	F/F	40 - 160
1983038	Linuron	82.0	91.2	P/P	40 - 150
1983038	MCP	75.1	83.1	P/P	40 - 150
1983038	Primidone	108	113	P/P	40 - 150
1983038	Pyraclostrobin	53.9	65.6	P/P	40 - 150
1983038	Triclopyr	78.5	83.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P343509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981919	Fluoride	102	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981878	Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P342952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981845	Turbidity	16.6	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981919	Chloride	0.327	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981919	Sulfate	0.342	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343447

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981878	Ammonia-N	5.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981920	Kjeldahl Nitrogen	5.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981881	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981920	Total-P	2.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981822	O-Phosphate-P	0.713	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P342827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981709	Sucralose	1.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P342880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983038	2,4-D	2.47	Spike	P	0 - 30
1983038	Acetaminophen	3.67	Spike	P	0 - 30
1983038	Bentazon	16.4	Spike	P	0 - 30
1983038	Carbamazepine	3.18	Spike	P	0 - 30
1983038	Diuron	0.849	Spike	P	0 - 30
1983038	Fenuron	6.05	Spike	P	0 - 30
1983038	Fluridone	17.3	Spike	P	0 - 30
1983038	Hydrocodone	6.02	Spike	P	0 - 30
1983038	Imazapyr	14.2	Spike	P	0 - 30
1983038	Imidacloprid	6.33	Spike	P	0 - 30
1983038	Linuron	10.7	Spike	P	0 - 30
1983038	MCP	10.1	Spike	P	0 - 30
1983038	Primidone	4.90	Spike	P	0 - 30
1983038	Pyraclostrobin	19.5	Spike	P	0 - 30
1983038	Triclopyr	5.98	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P342929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981814	Color (true)	0.157	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P343505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981919	Total Alkalinity	1.62	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P343220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981858	TDS	3.95	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981919	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981878	Organic Carbon	1.65	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: 1981930
Field Sample ID: G1NE0900

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	69.7	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	69.6	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1981931
Field Sample ID: G1NE0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	138	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.4	P	30 - 160
EPA 8321B	Diuron-d6	63.4	P	30 - 160
EPA 8321B	Primidone-d5	77.4	P	30 - 160
EPA 8321B	Sucralose-d6	50.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A83083
Included Lab Sample IDs: 1981919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	99.5	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83086
Included Lab Sample IDs: 1981921

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83088
Included Lab Sample IDs: 1981919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83148
Included Lab Sample IDs: 1981919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Sulfate	101	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83173
Included Lab Sample IDs: 1981920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A83192
Included Lab Sample IDs: 1981930, 1981931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83192

Included Lab Sample IDs: 1981930, 1981931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	78.2	106	P/P	60 - 130

Reference Method: SM 5310 B-00

Run ID: A83208

Included Lab Sample IDs: 1981920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83210

Included Lab Sample IDs: 1981920

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83249

Included Lab Sample IDs: 1981920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83258

Included Lab Sample IDs: 1981920

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83264

Included Lab Sample IDs: 1981919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.4	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83264

Included Lab Sample IDs: 1981919

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

Reference Method: EPA 8321B

Run ID: A83283

Included Lab Sample IDs: 1981930, 1981931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.4	88.6	P/P	50 - 150
Acetaminophen	105	99.5	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83283

Included Lab Sample IDs: 1981930, 1981931

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	82.9	79.3	P/P	50 - 150
Carbamazepine	106	104	P/P	60 - 150
Diuron	106	111	P/P	60 - 150
Diuron	114	106	P/P	60 - 150
Fenuron	109	110	P/P	60 - 150
Fluridone	99.5	98.9	P/P	60 - 160
Hydrocodone	98.8	113	P/P	60 - 150
Imazapyr	89.4	87.5	P/P	50 - 150
Imidacloprid	94.8	108	P/P	60 - 150
Linuron	110	104	P/P	60 - 150
MCPP	94.2	94.2	P/P	50 - 150
Primidone	102	105	P/P	60 - 150
Pyraclostrobin	111	113	P/P	60 - 150
Triclopyr	95.7	96.4	P/P	50 - 150

* 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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				16.6	
EPA 300.0 Rev. 2.1	Chloride	101	97.4 99.4		0.327	
	Sulfate	100	96.7 99.1		0.342	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	90.3 98.5			5.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	110 103			5.50
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101 102			0.985
EPA 365.1 Rev. 2.0	Total-P	99.7				2.22
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	98.5 97.8			0.713
EPA 8321B	2,4-D	100	103 106			2.47
	Acetaminophen	120	162 156			3.67
	Bentazon	109	36.3 30.2			16.4
	Carbamazepine	84.9	108 105			3.18
	Diuron	65.1	73.9 71.7			0.849
	Fenuron	124	110 104			6.05
	Fluridone	60.3	56.1 47.2			17.3
	Hydrocodone	112	123 116			6.02
	Imazapyr	88.7	109 92.7			14.2
	Imidacloprid	115	248 233			6.33
	Linuron	78.1	82.0 91.2			10.7
	MCPP	92.3	75.1 83.1			10.1
	Primidone	108	108 113			4.90
	Pyraclostrobin	70.8	53.9 65.6			19.5
	Sucralose	115	51.2 49.6			1.53
	Triclopyr	91.0	78.5 83.4			5.98
SM 2120 B	Color (true)				0.157	
SM 2320 B-97	Total Alkalinity	101			1.62	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 2540 C-97	TDS				3.95	
SM 4500 F-C-97	Fluoride	101	102 101			0.480
SM 5310 B-00	Organic Carbon	98.2	98.2			1.65

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1981919
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1981919
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1981919
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1981920
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1981920
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1981920
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1981920
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1981921
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1981930, 1981931
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1981930, 1981931
SM 2120 B / E31780	True Color measured at 450 nm	1981919
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1981919
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1981919
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1981919
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1981919
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1981920

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	04/06/2018			04/06/2018 15:08	William L. Brown IV	1981919
EPA 300.0 Rev. 2.1	04/06/2018			04/10/2018 15:14	Lipi Saha	1981919
EPA 350.1 Rev. 2.0	04/06/2018			04/13/2018 16:26	Julia Storbeck	1981920
EPA 351.2 Rev. 2.0	04/06/2018	04/10/2018 10:00	Adrian Shelby	04/11/2018 14:21	Joseph Suarez	1981920
EPA 353.2 Rev. 2.0	04/06/2018			04/16/2018 12:10	Lauren Bottorf	1981920
EPA 365.1 Rev. 2.0	04/06/2018	04/11/2018 13:08	Sima Feizi	04/13/2018 09:37	Beverly Y. Sanders	1981920
EPA 365.1 Rev. 2.0 dissolved	04/06/2018			04/06/2018 16:38	Megan Treadwell	1981921
EPA 8321B	04/06/2018	04/09/2018 11:30	Julie Michelle Frank	04/11/2018 13:02	Julie Michelle Frank	1981930
	04/06/2018	04/09/2018 11:30	Julie Michelle Frank	04/11/2018 13:17	Julie Michelle Frank	1981931
	04/06/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 07:31	Julie Michelle Frank	1981930
	04/06/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 08:06	Julie Michelle Frank	1981931
	04/06/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 13:17	Julie Michelle Frank	1981931
	04/06/2018	04/11/2018 09:00	Hoor Shaik	04/14/2018 00:14	Julie Michelle Frank	1981930
	04/06/2018	04/11/2018 09:00	Hoor Shaik	04/14/2018 00:49	Julie Michelle Frank	1981931
SM 2120 B	04/06/2018			04/06/2018 14:44	Tanya Welborn	1981919
SM 2320 B-97	04/06/2018			04/16/2018 09:46	Dale L. Simmons	1981919
SM 2540 C-97	04/06/2018			04/09/2018 14:02	Yijie Li	1981919
SM 2540 D-97	04/06/2018			04/09/2018 14:02	Yijie Li	1981919
SM 4500 F-C-97	04/06/2018			04/16/2018 09:38	Dale L. Simmons	1981919
SM 5310 B-00	04/06/2018			04/12/2018 23:50	Megan Treadwell	1981920