

Chemical Analysis Report

NE-DIST-2018-06-15-01

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

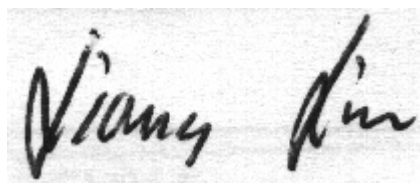
Event Description: **Gainesville**
Request ID: **RQ-2018-05-21-10**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way W
Suite 100
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 11-JUL-2018 14:24

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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: Little Hatchett CR @ SR 24

Collection Date/Time: 06/14/2018 09:30

Field ID: 20020109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2001189	EPA 8321B	2,4-D	0.018		ug/L	P346885	
		Bentazon	0.0030	I	ug/L	P346885	
		MCP	0.033		ug/L	P346885	
		Triclopyr**	0.0040	U	ug/L	P346885	
		Imidacloprid	0.014		ug/L	P346885	
		Diuron	0.0059	I	ug/L	P346885	
		Pyraclostrobin**	0.0020	U	ug/L	P346885	
		Primidone**	0.0055	I	ug/L	P346885	
		Linuron	0.0040	U	ug/L	P346885	
		Acetaminophen**	0.0080	U	ug/L	P346885	
		Fenuron	0.016	U	ug/L	P346885	
		Imazapyr**	0.013	I	ug/L	P346885	
		Carbamazepine**	4.0E-04	U	ug/L	P346885	
		Fluridone**	4.0E-04	U	ug/L	P346885	
		Hydrocodone**	8.0E-04	U	ug/L	P346885	
		Sucralose**	0.010	U	ug/L	P347055	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Lake Forest Creek @ University Ave

Collection Date/Time: 06/14/2018 09:50

Field ID: 20020124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2001190	EPA 8321B	2,4-D	0.0030	I	ug/L	P346885	
		Bentazon	8.0E-04	U	ug/L	P346885	
		MCP	0.0020	U	ug/L	P346885	
		Triclopyr**	0.0040	U	ug/L	P346885	
		Imidacloprid	0.0060	I	ug/L	P346885	
		Diuron	0.0020	U	ug/L	P346885	
		Pyraclostrobin**	0.0020	U	ug/L	P346885	
		Primidone**	0.0040	U	ug/L	P346885	
		Linuron	0.0040	U	ug/L	P346885	
		Acetaminophen**	0.0080	U	ug/L	P346885	
		Fenuron	0.016	U	ug/L	P346885	
		Imazapyr**	0.017		ug/L	P346885	
		Carbamazepine**	4.0E-04	U	ug/L	P346885	
		Fluridone**	4.0E-04	U	ug/L	P346885	
		Hydrocodone**	8.0E-04	U	ug/L	P346885	
		Sucralose**	0.010	U	ug/L	P347055	

Ref. Method and Comment:

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Calf Pond Center

Collection Date/Time: 06/14/2018 10:15

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2001167	EPA 180.1 Rev. 2.0	Turbidity	2.4	A	NTU	P346998	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P347396	
		Sulfate	5.5		mg SO4/L	P347399	
	SM 2120 B	Color (true)	160		PCU	P346992	
	SM 2320 B-97	Total Alkalinity	64		mg CaCO3/L	P347268	RPD
	SM 2540 C-97	TDS	133		mg/L	P347483	
	SM 2540 D-97	TSS	2	I	mg/L	P347504	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P347272	
2001169	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P347352	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P347654	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P347309	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P347255	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P347275	
2001170	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P346995	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346998

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347654

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347309

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346995

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

Reference Method: EPA 8321B
Batch ID: P346885

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P346885

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
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: EPA 8321B
Batch ID: P347055

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P346992

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P347268

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

Reference Method: SM 2540 C-97
Batch ID: P347483

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347504

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347275

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P347275

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: P347396

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347654

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347309

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346995

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P346885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.1		P	40 - 150
Acetaminophen	90.6		P	30 - 150
Bentazon	91.9		P	30 - 150
Carbamazepine	91.0		P	40 - 150
Diuron	82.8		P	40 - 150
Fenuron	95.8		P	40 - 150
Fluridone	83.9		P	40 - 150
Hydrocodone	95.2		P	40 - 150
Imazapyr	86.3		P	40 - 150
Imidacloprid	97.5		P	40 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P346885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	68.8		P	40 - 150
MCP	111		P	40 - 150
Primidone	88.4		P	40 - 150
Pyraclostrobin	81.1		P	40 - 150
Triclopyr	107		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	63.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P347268

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

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000771	Chloride	97.8		P	90 - 110
2001110	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000771	Sulfate	101		P	90 - 110
2001110	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002230	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001116	Kjeldahl Nitrogen	99.5	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001162	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000977	Total-P	96.8	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346995

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001120	O-Phosphate-P	95.8	96.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P346885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000875	2,4-D	89.4	87.0	P/P	40 - 150
2000875	Acetaminophen	70.8	68.6	P/P	30 - 150
2000875	Bentazon	71.8	70.2	P/P	30 - 150
2000875	Carbamazepine	66.7	60.7	P/P	40 - 150
2000875	Diuron	58.9	51.8	P/P	40 - 150
2000875	Fenuron	66.9	60.8	P/P	40 - 150
2000875	Fluridone	82.1	72.0	P/P	40 - 150
2000875	Hydrocodone	74.9	69.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P346885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000875	Imidacloprid	142	126	P/P	40 - 160
2000875	Linuron	65.2	51.7	P/P	40 - 150
2000875	MCPP	117	117	P/P	40 - 150
2000875	Primidone	74.3	67.4	P/P	40 - 150
2000875	Pyraclostrobin	77.1	76.0	P/P	40 - 150
2000875	Triclopyr	117	115	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001001	Sucralose	72.3	82.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2000974	Fluoride	97.0	95.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2001091	Organic Carbon	93.6	94.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P346998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001167	Turbidity	1.65	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000771	Chloride	3.48	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000771	Sulfate	4.43	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002230	Ammonia-N	0.0562	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P347654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001116	Kjeldahl Nitrogen	8.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001162	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000977	Total-P	1.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001120	O-Phosphate-P	0.149	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P346885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000875	2,4-D	2.19	Spike	P	0 - 30
2000875	Acetaminophen	3.21	Spike	P	0 - 30
2000875	Bentazon	2.27	Spike	P	0 - 30
2000875	Carbamazepine	9.38	Spike	P	0 - 30
2000875	Diuron	11.3	Spike	P	0 - 30
2000875	Fenuron	9.52	Spike	P	0 - 30
2000875	Fluridone	12.9	Spike	P	0 - 30
2000875	Hydrocodone	8.22	Spike	P	0 - 30
2000875	Imazapyr	7.04	Spike	P	0 - 30
2000875	Imidacloprid	12.5	Spike	P	0 - 30
2000875	Linuron	23.1	Spike	P	0 - 30
2000875	MCP	0.0204	Spike	P	0 - 30
2000875	Primidone	9.81	Spike	P	0 - 30
2000875	Pyraclostrobin	1.35	Spike	P	0 - 30
2000875	Triclopyr	1.85	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001001	Sucralose	12.5	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P346992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001194	Color (true)	0.483	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347268

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000974	Total Alkalinity	2.09	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001161	TDS	1.87	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2000974	Fluoride	0.953	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P347275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2001091	Organic Carbon	0.423	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: 2001189
Field Sample ID: 20020109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	65.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.4	P	30 - 160
EPA 8321B	Diuron-d6	53.1	P	30 - 160
EPA 8321B	Primidone-d5	59.6	P	30 - 160
EPA 8321B	Sucralose-d6	61.6	P	40 - 160

Lab Sample ID: 2001190
Field Sample ID: 20020124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	68.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.1	P	30 - 160
EPA 8321B	Diuron-d6	51.6	P	30 - 160
EPA 8321B	Primidone-d5	65.8	P	30 - 160
EPA 8321B	Sucralose-d6	87.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A84624
Included Lab Sample IDs: 2001167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	99.8	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A84628
Included Lab Sample IDs: 2001170

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A84629
Included Lab Sample IDs: 2001167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A84665
Included Lab Sample IDs: 2001189, 2001190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	64.8	63.5	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A84742
Included Lab Sample IDs: 2001167

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A84747
Included Lab Sample IDs: 2001169

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

Reference Method: SM 2320 B-97
Run ID: A84752
Included Lab Sample IDs: 2001167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A84752
Included Lab Sample IDs: 2001167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A84754
Included Lab Sample IDs: 2001169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.2	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A84777
Included Lab Sample IDs: 2001169

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84817
Included Lab Sample IDs: 2001169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A84988
Included Lab Sample IDs: 2001189, 2001190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	120	125	P/P	60 - 160
Carbamazepine	104	109	P/P	60 - 160
Diuron	110	116	P/P	60 - 150
Fenuron	102	104	P/P	60 - 150
Fluridone	102	107	P/P	60 - 160
Hydrocodone	112	107	P/P	60 - 150
Imazapyr	98.7	91.2	P/P	50 - 150
Imidacloprid	96.4	102	P/P	60 - 150
Linuron	106	105	P/P	60 - 150
Primidone	96.2	93.7	P/P	60 - 150
Pyraclostrobin	109	108	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A85000
Included Lab Sample IDs: 2001189, 2001190

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.7	96.8	P/P	50 - 150
Bentazon	88.7	105	P/P	50 - 160
MCP	81.6	103	P/P	50 - 150
Triclopyr	83.3	101	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85015
Included Lab Sample IDs: 2001169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	100	P/P	90 - 110

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	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				1.65	
EPA 300.0 Rev. 2.1	Chloride	99.9	97.8	96.9	3.48	
	Sulfate	101	101	97.1	4.43	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	101		0.0562
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	108	99.5		8.49
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	102		0.491
EPA 365.1 Rev. 2.0	Total-P	97.4	96.8	98.5		1.64
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	95.8	96.0		0.149
EPA 8321B	2,4-D	85.1	89.4	87.0		2.19
	Acetaminophen	90.6	70.8	68.6		3.21
	Bentazon	91.9	71.8	70.2		2.27
	Carbamazepine	91.0	66.7	60.7		9.38
	Diuron	82.8	58.9	51.8		11.3
	Fenuron	95.8	66.9	60.8		9.52
	Fluridone	83.9	82.1	72.0		12.9
	Hydrocodone	95.2	74.9	69.0		8.22
	Imazapyr	86.3				7.04
	Imidacloprid	97.5	142	126		12.5
	Linuron	68.8	65.2	51.7		23.1
	MCPP	111	117	117		0.0204
	Primidone	88.4	74.3	67.4		9.81
	Pyraclostrobin	81.1	77.1	76.0		1.35
	Sucralose	63.0	72.3	82.7		12.5
	Triclopyr	107	117	115		1.85
SM 2120 B	Color (true)				0.483	
SM 2320 B-97	Total Alkalinity	101			2.09	
SM 2540 C-97	TDS				1.87	
SM 4500 F-C-97	Fluoride	96.2	97.0	95.9		0.953
SM 5310 B-00	Organic Carbon	94.6	93.6	94.4		0.423

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2001167
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2001167
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2001167
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2001169
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2001169
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2001169
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2001169
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2001170
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2001189, 2001190
SM 2120 B / E31780	True Color measured at 450 nm	2001167
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2001167
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2001167
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2001167
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2001167

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2001169

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	06/15/2018			06/15/2018 14:08	Tanya Welborn	2001167
EPA 300.0 Rev. 2.1	06/15/2018			06/22/2018 19:23	Lipi Saha	2001167
EPA 350.1 Rev. 2.0	06/15/2018			06/22/2018 12:15	Ping Hua	2001169
EPA 351.2 Rev. 2.0	06/15/2018	06/28/2018 10:50	Adrian Shelby	07/03/2018 14:52	Tanya Welborn	2001169
EPA 353.2 Rev. 2.0	06/15/2018			06/21/2018 10:44	Beverly Y. Sanders	2001169
EPA 365.1 Rev. 2.0	06/15/2018	06/21/2018 12:42	Sima Feizi	06/25/2018 14:57	Beverly Y. Sanders	2001169
EPA 365.1 Rev. 2.0 dissolved	06/15/2018			06/15/2018 14:45	Megan Treadwell	2001170
EPA 8321B	06/15/2018	06/18/2018 11:00	Juyoung Kim	06/19/2018 03:10	Mohammad Ghaffari	2001189
	06/15/2018	06/18/2018 11:00	Juyoung Kim	06/19/2018 03:29	Mohammad Ghaffari	2001190
	06/15/2018	06/19/2018 10:00	Hoor Shaik	07/01/2018 13:39	Juyoung Kim	2001189
	06/15/2018	06/19/2018 10:00	Hoor Shaik	07/01/2018 14:13	Juyoung Kim	2001190
	06/15/2018	06/19/2018 10:00	Hoor Shaik	07/01/2018 21:26	Juyoung Kim	2001189
	06/15/2018	06/19/2018 10:00	Hoor Shaik	07/01/2018 22:01	Juyoung Kim	2001190
SM 2120 B	06/15/2018			06/15/2018 14:58	Tanya Welborn	2001167
SM 2320 B-97	06/15/2018			06/21/2018 13:53	Lauren Bottorf	2001167
SM 2540 C-97	06/15/2018			06/20/2018 15:01	Yijie Li	2001167
SM 2540 D-97	06/15/2018			06/20/2018 15:01	Yijie Li	2001167
SM 4500 F-C-97	06/15/2018			06/21/2018 13:53	Lauren Bottorf	2001167
SM 5310 B-00	06/15/2018			06/20/2018 22:14	Megan Treadwell	2001169