

Chemical Analysis Report

TLH-ROC-2018-03-29-02

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

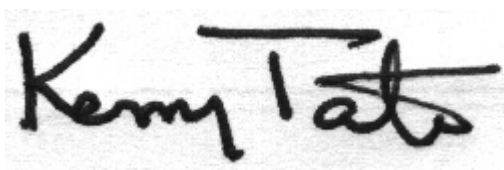
Event Description: **A-b/t/m**
Request ID: **RQ-2018-02-26-64**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 20-APR-2018 13:02

A handwritten signature in black ink, appearing to read "Kerry Tate", is shown 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: TENMILE CREEK @ CR274

Collection Date/Time: 03/29/2018 14:05

Field ID: G2TLHR0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979308	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P342515	
	EPA 300.0 Rev. 2.1	Chloride	3.8		mg Cl/L	P342596	
	SM 2120 B	Color (true)	120		PCU	P342459	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P343026	RPD
	SM 2540 C-97	TDS	28		mg/L	P343093	
	SM 2540 D-97	TSS	2	U	mg/L	P342612	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P343647	
1979309	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P343071	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P342604	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P342848	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P342650	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P343082	
1979310	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342543	
1979314	EPA 8321B	2,4-D	0.0020	U	ug/L	P342408	
		Sucralose**	0.11		ug/L	P342469	
		Bentazon	8.0E-04	U	ug/L	P342408	
		MCP	0.0020	U	ug/L	P342408	
		Triclopyr**	0.0040	U	ug/L	P342408	
		Imidacloprid	0.0020	U	ug/L	P342408	
		Diuron	0.0020	U	ug/L	P342408	
		Pyraclostrobin**	0.0020	U	ug/L	P342408	
		Primidone**	0.0040	U	ug/L	P342408	
		Linuron	0.0040	U	ug/L	P342408	
		Acetaminophen**	0.0080	U	ug/L	P342408	
		Fenuron	0.016	U	ug/L	P342408	
		Imazapyr**	0.0040	U	ug/L	P342408	
		Carbamazepine**	4.0E-04	U	ug/L	P342408	
		Fluridone**	8.0E-04	U	ug/L	P342408	

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: P342515

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P342596

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

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

Reference Method: EPA 8321B
Batch ID: P342408

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	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	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: P342469

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P342459

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343026

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P343093

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342612

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343082

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: P342596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P342604

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: P342848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P342650

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: P342543

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

Reference Method: EPA 8321B
 Batch ID: P342408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	60.6		P	40 - 150
Acetaminophen	104		P	30 - 150
Bentazon	66.5		P	30 - 150
Carbamazepine	72.6		P	40 - 150
Diuron	63.1		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	56.1		P	40 - 150
Imazapyr	67.4		P	40 - 150
Imidacloprid	93.7		P	40 - 160
Linuron	75.5		P	40 - 150
MCPP	51.7		P	40 - 150
Primidone	108		P	40 - 150
Pyraclostrobin	75.0		P	40 - 150
Triclopyr	50.4		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P342469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.8		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P343026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	98 - 107

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P343647

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

Reference Method: SM 5310 B-00
Batch ID: P343082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979005	Chloride	97.8		P	90 - 110
1979233	Chloride	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979295	Ammonia-N	97.7	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979293	Kjeldahl Nitrogen	99.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979374	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979293	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979350	O-Phosphate-P	95.3	96.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P342408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1978945	2,4-D	50.1	48.4	P/P	40 - 150
1978945	Acetaminophen	120	121	P/P	30 - 150
1978945	Bentazon	51.1	50.5	P/P	30 - 150
1978945	Carbamazepine	83.0	84.3	P/P	40 - 150
1978945	Diuron	65.4	63.9	P/P	40 - 150
1978945	Fenuron	96.0	87.5	P/P	40 - 150
1978945	Fluridone	53.5	63.3	P/P	40 - 150
1978945	Imazapyr	63.2	61.3	P/P	40 - 150
1978945	Imidacloprid	134	138	P/P	40 - 160
1978945	Linuron	78.4	79.9	P/P	40 - 150
1978945	MCP	54.0	47.4	P/P	40 - 150
1978945	Primidone	122	109	P/P	40 - 150
1978945	Pyraclostrobin	80.8	72.9	P/P	40 - 150
1978945	Triclopyr	55.3	51.7	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979267	Sucralose	93.4	91.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979292	Fluoride	96.9	97.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979043	Organic Carbon	94.4	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P342515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979358	Turbidity	0.927	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979005	Chloride	0.600	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979295	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979293	Kjeldahl Nitrogen	2.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979374	NO2NO3-N	0.926	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979293	Total-P	2.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979350	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P342408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1978945	2,4-D	3.36	Spike	P	0 - 30
1978945	Acetaminophen	0.963	Spike	P	0 - 30
1978945	Bentazon	0.864	Spike	P	0 - 30
1978945	Carbamazepine	1.60	Spike	P	0 - 30
1978945	Diuron	2.40	Spike	P	0 - 30
1978945	Fenuron	9.27	Spike	P	0 - 30
1978945	Fluridone	16.4	Spike	P	0 - 30
1978945	Imazapyr	1.88	Spike	P	0 - 30
1978945	Imidacloprid	2.47	Spike	P	0 - 30
1978945	Linuron	1.94	Spike	P	0 - 30
1978945	MCP	13.1	Spike	P	0 - 30
1978945	Primidone	11.6	Spike	P	0 - 30
1978945	Pyraclostrobin	10.3	Spike	P	0 - 30
1978945	Triclopyr	6.63	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P342469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979267	Sucralose	2.50	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P342459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979232	Color (true)	1.47	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P343026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	Total Alkalinity	2.33	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P343093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	TDS	6.56	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P343647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	Fluoride	0.477	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P343082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979043	Organic Carbon	1.61	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: 1979314
 Field Sample ID: G2TLHR0001

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1979314
Field Sample ID: G2TLHR0001

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	80.8	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	96.5	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A82892
Included Lab Sample IDs: 1979308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	101	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A82944
Included Lab Sample IDs: 1979308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82962
Included Lab Sample IDs: 1979308

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82973
Included Lab Sample IDs: 1979310

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83025
Included Lab Sample IDs: 1979309

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83030
Included Lab Sample IDs: 1979309

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A83031
 Included Lab Sample IDs: 1979314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	81.9	84.3	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0
 Run ID: A83062
 Included Lab Sample IDs: 1979309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 8321B
 Run ID: A83110
 Included Lab Sample IDs: 1979314

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.9	94.8	P/P	50 - 150
Acetaminophen	106	111	P/P	60 - 150
Bentazon	95.1	106	P/P	50 - 150
Carbamazepine	107	107	P/P	60 - 150
Diuron	105	111	P/P	60 - 150
Fenuron	106	109	P/P	60 - 150
Fluridone	113	116	P/P	60 - 160
Imazapyr	91.2	87.5	P/P	50 - 150
Imidacloprid	112	112	P/P	60 - 150
Linuron	118	122	P/P	60 - 150
MCPP	95.7	102	P/P	50 - 150
Primidone	102	121	P/P	60 - 150
Pyraclostrobin	114	118	P/P	60 - 150
Triclopyr	83.3	94.9	P/P	50 - 150

Reference Method: SM 2320 B-97
 Run ID: A83116
 Included Lab Sample IDs: 1979308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A83131
 Included Lab Sample IDs: 1979309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
 Run ID: A83136
 Included Lab Sample IDs: 1979309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A83315
Included Lab Sample IDs: 1979308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	99.5	P/P	90 - 110

* 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				0.927	
EPA 300.0 Rev. 2.1	Chloride	97.2	97.8 94.4		0.600	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	97.7 99.1			1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	99.9 103			2.09
EPA 353.2 Rev. 2.0	NO2NO3-N	106	108 108			0.926
EPA 365.1 Rev. 2.0	Total-P	102	102 104			2.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	95.3 96.9			1.16
EPA 8321B	2,4-D	60.6	50.1 48.4			3.36
	Acetaminophen	104	120 121			0.963
	Bentazon	66.5	51.1 50.5			0.864
	Carbamazepine	72.6	83.0 84.3			1.60
	Diuron	63.1	65.4 63.9			2.40
	Fenuron	107	96.0 87.5			9.27
	Fluridone	56.1	53.5 63.3			16.4
	Imazapyr	67.4	61.3 63.2			1.88
	Imidacloprid	93.7	134 138			2.47
	Linuron	75.5	78.4 79.9			1.94
	MCPP	51.7	54.0 47.4			13.1
	Primidone	108	122 109			11.6
	Pyraclostrobin	75.0	80.8 72.9			10.3
	Sucralose	83.8	93.4 91.1			2.50
	Triclopyr	50.4	55.3 51.7			6.63
SM 2120 B	Color (true)				1.47	
SM 2320 B-97	Total Alkalinity	98.3			2.33	
SM 2540 C-97	TDS				6.56	
SM 4500 F-C-97	Fluoride	96.2	96.9 97.5			0.477
SM 5310 B-00	Organic Carbon	96.0	94.4 97.0			1.61

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1979308
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1979308
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1979309
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1979309

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1979309
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1979309
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1979310
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1979314
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1979314
SM 2120 B / E31780	True Color measured at 450 nm	1979308
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1979308
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1979308
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1979308
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1979308
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1979309

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	03/29/2018			03/30/2018 15:46	Tanya Welborn	1979308
EPA 300.0 Rev. 2.1	03/29/2018			03/31/2018 03:30	Lipi Saha	1979308
EPA 350.1 Rev. 2.0	03/29/2018			04/09/2018 13:32	Ping Hua	1979309
EPA 351.2 Rev. 2.0	03/29/2018	04/03/2018 09:50	Adrian Shelby	04/04/2018 10:54	Joseph Suarez	1979309
EPA 353.2 Rev. 2.0	03/29/2018			04/05/2018 13:32	Lauren Bottorf	1979309
EPA 365.1 Rev. 2.0	03/29/2018	04/03/2018 13:07	Sima Feizi	04/04/2018 11:43	Beverly Y. Sanders	1979309
EPA 365.1 Rev. 2.0 dissolved	03/29/2018			03/30/2018 12:20	Megan Treadwell	1979310
EPA 8321B	03/29/2018	04/02/2018 11:00	Hoor Shaik	04/04/2018 07:02	Julie Michelle Frank	1979314
	03/29/2018	04/02/2018 11:00	Hoor Shaik	04/04/2018 19:43	Julie Michelle Frank	1979314
	03/29/2018	04/03/2018 09:00	Julie Michelle Frank	04/03/2018 14:54	Mohammad Ghaffari	1979314
SM 2120 B	03/29/2018			03/29/2018 17:15	Tanya Welborn	1979308
SM 2320 B-97	03/29/2018			04/07/2018 03:32	Dale L. Simmons	1979308
SM 2540 C-97	03/29/2018			03/30/2018 11:35	DeAsia Armster	1979308
SM 2540 D-97	03/29/2018			03/30/2018 11:35	DeAsia Armster	1979308
SM 4500 F-C-97	03/29/2018			04/17/2018 18:11	Dale L. Simmons	1979308
SM 5310 B-00	03/29/2018			04/06/2018 22:01	Julia Storbeck	1979309