

Chemical Analysis Report

TLH-ROC-2018-05-24-05

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

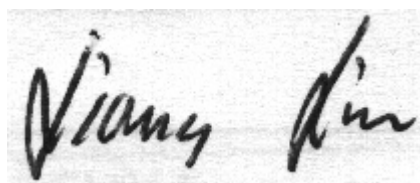
Event Description: **SMP 2017 kit A-b/t/m PCR-FILTER , PCR-HF183 & BacR
(WBID 757 Bear Creek)**
Request ID: **RQ-2018-04-09-61**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-JUN-2018 14:41

A handwritten signature in black ink, appearing to read "Liang Lin", 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: BEAR CREEK @ SR 267

Collection Date/Time: 05/24/2018 12:10

Field ID: G1TLHR0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1995440	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P345908	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P346295	
		Sulfate	3.8		mg SO4/L	P346297	
	SM 2120 B	Color (true)	120		PCU	P345907	
	SM 2320 B-97	Total Alkalinity	2.9		mg CaCO3/L	P346092	RPD
	SM 2540 C-97	TDS	49		mg/L	P346204	
	SM 2540 D-97	TSS	15		mg/L	P346206	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P346097	
1995441	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P346341	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P346275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P346060	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P346101	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P346490	
1995442	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.069		mg P/L	P345988	
1995446	EPA 8321B	2,4-D	0.0020	U	ug/L	P345863	
		Bentazon	8.0E-04	U	ug/L	P345863	
		MCP	0.0020	U	ug/L	P345863	
		Triclopyr**	0.0040	U	ug/L	P345863	
		Imidacloprid	0.0020	U	ug/L	P345863	MS
		Diuron	0.0020	U	ug/L	P345863	
		Pyraclostrobin**	0.0020	U	ug/L	P345863	
		Primidone**	0.0040	U	ug/L	P345863	
		Linuron	0.0040	U	ug/L	P345863	
		Acetaminophen**	0.0080	UJ	ug/L	P345863	SUR
		Fenuron	0.016	U	ug/L	P345863	
		Imazapyr**	0.0040	U	ug/L	P345863	
		Carbamazepine**	4.0E-04	U	ug/L	P345863	
		Fluridone**	4.0E-04	U	ug/L	P345863	
		Hydrocodone**	8.0E-04	U	ug/L	P345863	
		Sucralose**	0.10	U	ug/L	P345837	

Ref. Method and Comment:

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

EPA 8321B: 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: P345908

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346295

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346297

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346341

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346060

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346101

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345988

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

Reference Method: EPA 8321B
Batch ID: P345837

Component	Result	Code	Units
Sucralose	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P345863

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: P345863

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: SM 2120 B
Batch ID: P345907

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346092

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

Reference Method: SM 2540 C-97
Batch ID: P346204

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P346206

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P346097

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P346490

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346295

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346297

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P346341

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P346275

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P346060

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: P346101

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P345988

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

Reference Method: EPA 8321B
 Batch ID: P345837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.3		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P345863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	82.8		P	40 - 150
Acetaminophen	99.0		P	30 - 150
Bentazon	90.9		P	30 - 150
Carbamazepine	66.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P345863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	53.8		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	65.5		P	40 - 150
Hydrocodone	86.4		P	40 - 150
Imazapyr	80.1		P	40 - 150
Imidacloprid	107		P	40 - 160
Linuron	57.9		P	40 - 150
MCPP	90.7		P	40 - 150
Primidone	97.1		P	40 - 150
Pyraclostrobin	73.1		P	40 - 150
Triclopyr	86.9		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P346092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P346490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995440	Chloride	98.9		P	90 - 110
1995526	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995440	Sulfate	98.3		P	90 - 110
1995526	Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346341

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P346341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995453	Ammonia-N	96.3	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P346275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995453	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P346060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995431	NO2NO3-N	101	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P346101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995453	Total-P	106	101	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P345837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1994753	Sucralose	121	108	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P345863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995511	2,4-D	126	135	P/P	40 - 150
1995511	Acetaminophen	136	111	P/P	30 - 150
1995511	Bentazon	60.3	64.2	P/P	30 - 150
1995511	Carbamazepine	64.0	56.2	P/P	40 - 150
1995511	Diuron	51.4	43.9	P/P	40 - 150
1995511	Fenuron	94.8	85.6	P/P	40 - 150
1995511	Fluridone	68.4	58.3	P/P	40 - 150
1995511	Hydrocodone	111	90.1	P/P	40 - 150
1995511	Imazapyr	118	98.3	P/P	40 - 150
1995511	Imidacloprid	194	157	F/P	40 - 160
1995511	Linuron	59.6	56.9	P/P	40 - 150
1995511	MCP	111	125	P/P	40 - 150
1995511	Primidone	130	114	P/P	40 - 150
1995511	Pyraclostrobin	84.3	72.8	P/P	40 - 150
1995511	Triclopyr	107	124	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P346097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995691	Fluoride	96.8	96.1	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P346490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1995351	Organic Carbon	96.9		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P345908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995131	Turbidity	9.16	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995526	Chloride	4.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P346297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995526	Sulfate	3.41	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P346341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995453	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P346275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995453	Kjeldahl Nitrogen	2.91	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P346060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995431	NO2NO3-N	1.09	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995453	Total-P	3.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995432	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P345837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1994753	Sucralose	9.03	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P345863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995511	2,4-D	6.77	Spike	P	0 - 30
1995511	Acetaminophen	20.4	Spike	P	0 - 30
1995511	Bentazon	5.66	Spike	P	0 - 30
1995511	Carbamazepine	13.0	Spike	P	0 - 30
1995511	Diuron	15.7	Spike	P	0 - 30
1995511	Fenuron	10.2	Spike	P	0 - 30
1995511	Fluridone	15.9	Spike	P	0 - 30
1995511	Hydrocodone	21.1	Spike	P	0 - 30
1995511	Imazapyr	17.9	Spike	P	0 - 30
1995511	Imidacloprid	21.2	Spike	P	0 - 30
1995511	Linuron	4.56	Spike	P	0 - 30
1995511	MCP	12.0	Spike	P	0 - 30
1995511	Primidone	13.3	Spike	P	0 - 30
1995511	Pyraclostrobin	14.7	Spike	P	0 - 30
1995511	Triclopyr	15.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P345907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995452	Color (true)	7.58	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995691	Total Alkalinity	2.32	Sample	F	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P346204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995450	TDS	2.01	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P346206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995450	TSS	2.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P346097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995691	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P346490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1995351	Organic Carbon	0.0	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: 1995446
Field Sample ID: G1TLHR0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	175	F	30 - 160
EPA 8321B	Carbamazepine-d10	90.0	P	30 - 160
EPA 8321B	Diuron-d6	97.7	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A84144
Included Lab Sample IDs: 1995440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	106	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84145

Included Lab Sample IDs: 1995440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84169

Included Lab Sample IDs: 1995442

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	97.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84186

Included Lab Sample IDs: 1995446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	113	99.2	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84207

Included Lab Sample IDs: 1995441

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

Reference Method: SM 2320 B-97

Run ID: A84220

Included Lab Sample IDs: 1995440

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: A84220

Included Lab Sample IDs: 1995440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84230

Included Lab Sample IDs: 1995440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	102	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84278

Included Lab Sample IDs: 1995446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.5	106	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84278
Included Lab Sample IDs: 1995446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	116	131	P/P	50 - 150
MCP	94.0	99.9	P/P	50 - 150
Tricopyr	96.8	116	P/P	50 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A84336
Included Lab Sample IDs: 1995441

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84352
Included Lab Sample IDs: 1995441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A84367
Included Lab Sample IDs: 1995441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	106	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A84394
Included Lab Sample IDs: 1995441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.5	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A84432
Included Lab Sample IDs: 1995446

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	138	127	P/P	60 - 150
Carbamazepine	128	128	P/P	60 - 150
Diuron	122	130	P/P	60 - 150
Fenuron	98.6	101	P/P	60 - 150
Fluridone	134	131	P/P	60 - 160
Hydrocodone	110	99.7	P/P	60 - 150
Imazapyr	97.0	98.8	P/P	50 - 150
Imidacloprid	102	104	P/P	60 - 150
Linuron	119	116	P/P	60 - 150
Primidone	110	103	P/P	60 - 150
Pyraclostrobin	105	106	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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					9.16	
EPA 300.0 Rev. 2.1	Chloride	101	97.4	98.9		4.11	
	Sulfate	99.1	96.3	98.3		3.41	
EPA 350.1 Rev. 2.0	Ammonia-N	103	96.3	97.6			1.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.8	104	108			2.91
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	101	99.2			1.09
EPA 365.1 Rev. 2.0	Total-P	101	106	101			3.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6					1.03
EPA 8321B	2,4-D	82.8	126	135			6.77
	Acetaminophen	99.0	136	111			20.4
	Bentazon	90.9	60.3	64.2			5.66
	Carbamazepine	66.6	64.0	56.2			13.0
	Diuron	53.8	51.4	43.9			15.7
	Fenuron	102	94.8	85.6			10.2
	Fluridone	65.5	68.4	58.3			15.9
	Hydrocodone	86.4	111	90.1			21.1
	Imazapyr	80.1	118	98.3			17.9
	Imidacloprid	107	194	157			21.2
	Linuron	57.9	59.6	56.9			4.56
	MCP	90.7	111	125			12.0
	Primidone	97.1	130	114			13.3
	Pyraclostrobin	73.1	84.3	72.8			14.7
	Sucralose	97.3	121	108			9.03
	Triclopyr	86.9	107	124			15.1
SM 2120 B	Color (true)					7.58	
SM 2320 B-97	Total Alkalinity	102				2.32	
SM 2540 C-97	TDS					2.01	
SM 2540 D-97	TSS					2.53	
SM 4500 F-C-97	Fluoride	95.8	96.8	96.1			0.470
SM 5310 B-00	Organic Carbon	98.1	96.9				0.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1995440
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1995440
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1995440
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1995441
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1995441
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1995441

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1995441
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1995442
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1995446
SM 2120 B / E31780	True Color measured at 450 nm	1995440
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1995440
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1995440
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1995440
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1995440
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1995441

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	05/24/2018			05/24/2018 16:55	William L. Brown IV	1995440
EPA 300.0 Rev. 2.1	05/24/2018			06/01/2018 14:08	Lipi Saha	1995440
EPA 350.1 Rev. 2.0	05/24/2018			06/04/2018 15:08	Julia Storbeck	1995441
EPA 351.2 Rev. 2.0	05/24/2018	06/01/2018 14:20	Adrian Shelby	06/05/2018 14:36	Joseph Suarez	1995441
EPA 353.2 Rev. 2.0	05/24/2018			05/29/2018 13:26	Lauren Bottorf	1995441
EPA 365.1 Rev. 2.0	05/24/2018	05/30/2018 13:15	Sima Feizi	06/05/2018 09:19	Beverly Y. Sanders	1995441
EPA 365.1 Rev. 2.0 dissolved	05/24/2018			05/25/2018 14:25	Megan Treadwell	1995442
EPA 8321B	05/24/2018	05/25/2018 14:00	Juyoung Kim	05/26/2018 03:19	Juyoung Kim	1995446
	05/24/2018	05/30/2018 10:00	Hoor Shaik	06/01/2018 07:08	Juyoung Kim	1995446
	05/24/2018	05/30/2018 10:00	Hoor Shaik	06/02/2018 22:20	Juyoung Kim	1995446
SM 2120 B	05/24/2018			05/24/2018 16:02	Tanya Welborn	1995440
SM 2320 B-97	05/24/2018			05/29/2018 22:22	Dale L. Simmons	1995440
SM 2540 C-97	05/24/2018			05/25/2018 13:00	William L. Brown IV	1995440
SM 2540 D-97	05/24/2018			05/25/2018 13:00	William L. Brown IV	1995440
SM 4500 F-C-97	05/24/2018			05/29/2018 22:22	Dale L. Simmons	1995440
SM 5310 B-00	05/24/2018			06/05/2018 04:02	Megan Treadwell	1995441