

Chemical Analysis Report

TLH-ROC-2018-04-04-04

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
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 23-APR-2018 15:31



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: BIG CREEK @ CR2224

Collection Date/Time: 04/04/2018 14:10

Field ID: G1TLHR0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981247	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P342790	
	EPA 300.0 Rev. 2.1	Chloride	2.8		mg Cl/L	P343050	
	SM 2120 B	Color (true)	190		PCU	P342839	
	SM 2320 B-97	Total Alkalinity	2.9		mg CaCO3/L	P343413	
	SM 2540 C-97	TDS	49		mg/L	P343344	
	SM 2540 D-97	TSS	2	I	mg/L	P343456	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P343417	
1981248	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P343426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P342903	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P343202	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P343120	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P343192	
1981249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P342802	
1981253	EPA 8321B	2,4-D	0.0020	UJ	ug/L	P342718	SUR
		Sucralose**	0.11	U	ug/L	P342722	
		Bentazon	8.0E-04	UJ	ug/L	P342718	SUR
		MCP	0.0020	UJ	ug/L	P342718	SUR
		Triclopyr**	0.0040	UJ	ug/L	P342718	SUR
		Imidacloprid	0.0020	U	ug/L	P342718	MS
		Diuron	0.0020	U	ug/L	P342718	
		Pyraclostrobin**	0.0020	U	ug/L	P342718	
		Primidone**	0.0040	U	ug/L	P342718	
		Linuron	0.0040	U	ug/L	P342718	
		Acetaminophen**	0.0080	U	ug/L	P342718	
		Fenuron	0.016	U	ug/L	P342718	
		Imazapyr**	0.022		ug/L	P342718	
		Carbamazepine**	4.0E-04	U	ug/L	P342718	
		Fluridone**	8.0E-04	U	ug/L	P342718	
		Hydrocodone**	8.0E-04	U	ug/L	P342718	

Ref. Method and Comment:

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

SM 5310 B-00: 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: P342790

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P343050

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343050

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342903

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343202

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343120

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342802

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

Reference Method: EPA 8321B
Batch ID: P342718

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P342722

Component	Result	Code	Units
Sucralose	0.11	U	ug/L

Reference Method: SM 2120 B
Batch ID: P342839

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343413

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

Reference Method: SM 2540 C-97
Batch ID: P343344

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343456

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P343417

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343192

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: P343050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343426

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342903

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343202

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342802

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

Reference Method: EPA 8321B
Batch ID: P342718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	79.4		P	40 - 150
Acetaminophen	112		P	30 - 150
Bentazon	75.4		P	30 - 150
Carbamazepine	85.3		P	40 - 150
Diuron	66.7		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	60.5		P	40 - 150
Hydrocodone	125		P	40 - 150
Imazapyr	76.4		P	40 - 150
Imidacloprid	111		P	40 - 160
Linuron	75.8		P	40 - 150
MCP	62.7		P	40 - 150
Primidone	124		P	40 - 150
Pyraclostrobin	77.1		P	40 - 150
Triclopyr	62.6		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P342722

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P343413

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

Reference Method: SM 4500 F-C-97
Batch ID: P343417

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

Reference Method: SM 5310 B-00
Batch ID: P343192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980999	Chloride	96.3		P	90 - 110
1981261	Chloride	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981232	Ammonia-N	98.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981257	Kjeldahl Nitrogen	99.2	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981248	NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981257	Total-P	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P342802

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980936	O-Phosphate-P	100	99.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P342718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980630	2,4-D	109	105	P/P	40 - 150
1980630	Acetaminophen	133	139	P/P	30 - 150
1980630	Bentazon	47.9	43.1	P/P	30 - 150
1980630	Carbamazepine	90.1	94.4	P/P	40 - 150
1980630	Diuron	72.0	75.5	P/P	40 - 150
1980630	Fenuron	98.4	105	P/P	40 - 150
1980630	Fluridone	59.2	62.4	P/P	40 - 150
1980630	Hydrocodone	137	142	P/P	40 - 150
1980630	Imazapyr	77.5	73.9	P/P	40 - 150
1980630	Imidacloprid	207	205	F/F	40 - 160
1980630	Linuron	88.5	89.9	P/P	40 - 150
1980630	MCCP	84.8	81.2	P/P	40 - 150
1980630	Primidone	126	121	P/P	40 - 150
1980630	Pyraclostrobin	78.6	84.1	P/P	40 - 150
1980630	Triclopyr	89.7	85.1	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P342722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980974	Sucralose	64.8	66.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P343417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1980944	Fluoride	96.8	98.9	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P342790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981237	Turbidity	8.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P343050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980999	Chloride	0.785	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981232	Ammonia-N	2.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981257	Kjeldahl Nitrogen	2.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981248	NO2NO3-N	0.195	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981257	Total-P	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980936	O-Phosphate-P	1.01	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P342718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980630	2,4-D	3.48	Spike	P	0 - 30
1980630	Acetaminophen	4.43	Spike	P	0 - 30
1980630	Bentazon	7.99	Spike	P	0 - 30
1980630	Carbamazepine	4.62	Spike	P	0 - 30
1980630	Diuron	4.75	Spike	P	0 - 30
1980630	Fenuron	6.53	Spike	P	0 - 30
1980630	Fluridone	5.10	Spike	P	0 - 30
1980630	Hydrocodone	3.55	Spike	P	0 - 30
1980630	Imazapyr	3.03	Spike	P	0 - 30
1980630	Imidacloprid	0.795	Spike	P	0 - 30
1980630	Linuron	1.55	Spike	P	0 - 30
1980630	MCP	4.32	Spike	P	0 - 30
1980630	Primidone	3.73	Spike	P	0 - 30
1980630	Pyraclostrobin	6.72	Spike	P	0 - 30
1980630	Triclopyr	5.26	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P342722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980974	Sucralose	2.61	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P342839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981256	Color (true)	1.84	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P343413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980944	Total Alkalinity	0.799	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P343344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980999	TDS	3.81	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980944	Fluoride	1.47	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1980556	Organic Carbon	0.449	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: 1981253
Field Sample ID: G1TLHR0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	161	F	30 - 160
EPA 8321B	Acetaminophen-d4	146	P	30 - 160
EPA 8321B	Carbamazepine-d10	130	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1981253
Field Sample ID: G1TLHR0057

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	104	P	30 - 160
EPA 8321B	Primidone-d5	134	P	30 - 160
EPA 8321B	Sucralose-d6	57.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A83001
Included Lab Sample IDs: 1981247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.2	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A83045
Included Lab Sample IDs: 1981247

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A83051
Included Lab Sample IDs: 1981249

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A83061
Included Lab Sample IDs: 1981247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	98.6	P/P	85 - 115

Reference Method: EPA 8321B
Run ID: A83110
Included Lab Sample IDs: 1981253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	93.3	P/P	50 - 150
Acetaminophen	119	111	P/P	60 - 150
Bentazon	93.1	90.5	P/P	50 - 150
Carbamazepine	109	111	P/P	60 - 150
Diuron	112	123	P/P	60 - 150
Fenuron	108	109	P/P	60 - 150
Fluridone	115	119	P/P	60 - 160
Hydrocodone	121	120	P/P	60 - 150
Imazapyr	90.3	84.4	P/P	50 - 150
Imidacloprid	116	112	P/P	60 - 150
Linuron	123	118	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A83110
Included Lab Sample IDs: 1981253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCPP	95.3	101	P/P	50 - 150
Primidone	117	114	P/P	60 - 150
Pyraclostrobin	118	117	P/P	60 - 150
Triclopyr	98.4	102	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83142
Included Lab Sample IDs: 1981248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A83162
Included Lab Sample IDs: 1981248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	94.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83164
Included Lab Sample IDs: 1981248

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

Reference Method: EPA 8321B
Run ID: A83192
Included Lab Sample IDs: 1981253

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	110	P/P	60 - 130

Reference Method: SM 2320 B-97
Run ID: A83241
Included Lab Sample IDs: 1981247

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

Reference Method: SM 4500 F-C-97
Run ID: A83241
Included Lab Sample IDs: 1981247

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83245

Included Lab Sample IDs: 1981248

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: A83262

Included Lab Sample IDs: 1981248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.8	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				8.92	
EPA 300.0 Rev. 2.1	Chloride	98.7	96.3 96.8		0.785	
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	98.7 101			2.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.2 96.4			2.09
EPA 353.2 Rev. 2.0	NO2NO3-N	104	103			0.195
EPA 365.1 Rev. 2.0	Total-P	108	106 104			2.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	100 99.0			1.01
EPA 8321B	2,4-D	79.4	109 105			3.48
	Acetaminophen	112	133 139			4.43
	Bentazon	75.4	47.9 43.1			7.99
	Carbamazepine	85.3	90.1 94.4			4.62
	Diuron	66.7	72.0 75.5			4.75
	Fenuron	120	98.4 105			6.53
	Fluridone	60.5	59.2 62.4			5.10
	Hydrocodone	125	137 142			3.55
	Imazapyr	76.4	77.5 73.9			3.03
	Imidacloprid	111	207 205			0.795
	Linuron	75.8	88.5 89.9			1.55
	MCP	62.7	84.8 81.2			4.32
	Primidone	124	126 121			3.73
	Pyraclostrobin	77.1	78.6 84.1			6.72
	Sucralose	121	64.8 66.5			2.61
	Triclopyr	62.6	89.7 85.1			5.26
SM 2120 B	Color (true)				1.84	
SM 2320 B-97	Total Alkalinity	101			0.799	
SM 2540 C-97	TDS				3.81	
SM 4500 F-C-97	Fluoride	96.9	96.8 98.9			1.47
SM 5310 B-00	Organic Carbon	95.2				0.449

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1981247
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1981247
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1981248
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1981248
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1981248
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1981248
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1981249
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1981253
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1981253
SM 2120 B / E31780	True Color measured at 450 nm	1981247
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1981247
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1981247
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1981247
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1981247
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1981248

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	04/04/2018			04/04/2018 17:53	William L. Brown IV	1981247
EPA 300.0 Rev. 2.1	04/04/2018			04/06/2018 16:32	Lipi Saha	1981247
EPA 350.1 Rev. 2.0	04/04/2018			04/13/2018 12:23	Ping Hua	1981248
EPA 351.2 Rev. 2.0	04/04/2018	04/06/2018 13:30	Adrian Shelby	04/10/2018 09:12	Joseph Suarez	1981248
EPA 353.2 Rev. 2.0	04/04/2018			04/11/2018 11:43	Lauren Bottorf	1981248
EPA 365.1 Rev. 2.0	04/04/2018	04/10/2018 13:53	Sima Feizi	04/16/2018 10:51	Beverly Y. Sanders	1981248
EPA 365.1 Rev. 2.0 dissolved	04/04/2018			04/04/2018 17:59	Megan Treadwell	1981249
EPA 8321B	04/04/2018	04/05/2018 13:00	Hoor Shaik	04/06/2018 19:03	Julie Michelle Frank	1981253
	04/04/2018	04/05/2018 13:00	Hoor Shaik	04/07/2018 11:12	Julie Michelle Frank	1981253
	04/04/2018	04/05/2018 15:30	Julie Michelle Frank	04/11/2018 03:18	Julie Michelle Frank	1981253
SM 2120 B	04/04/2018			04/05/2018 15:32	Tanya Welborn	1981247
SM 2320 B-97	04/04/2018			04/14/2018 09:28	Dale L. Simmons	1981247
SM 2540 C-97	04/04/2018			04/06/2018 16:01	Yijie Li	1981247
SM 2540 D-97	04/04/2018			04/06/2018 16:01	Yijie Li	1981247
SM 4500 F-C-97	04/04/2018			04/14/2018 09:28	Dale L. Simmons	1981247
SM 5310 B-00	04/04/2018			04/11/2018 02:19	Julia Storbeck	1981248