

Chemical Analysis Report

WQAP-2018-05-17-01

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

Event Description: **2017 SMP Kit Template 1**

Request ID: **RQ-2018-05-14-55**

Customer: **WQAP**

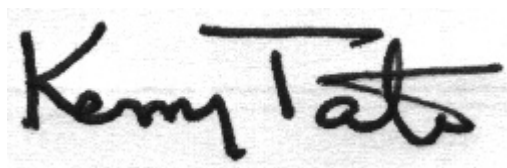
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3525
Tallahassee, FL 32399-2400
Attn: Curtis Musson

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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 01-JUN-2018 11:42

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Craig Cr @ Hendricks Ave

Collection Date/Time: 05/16/2018 11:20

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993427	EPA 180.1 Rev. 2.0	Turbidity	3.4	A	NTU	P345530	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P345684	
		Sulfate	41		mg SO4/L	P345687	
	SM 2120 B	Color (true)	55		PCU	P345516	
	SM 2320 B-97	Total Alkalinity	123		mg CaCO3/L	P345912	
	SM 2540 C-97	TDS	222		mg/L	P345966	
	SM 2540 D-97	TSS	3	I	mg/L	P345807	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P345915	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P345850	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P345622	
1993428	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P345735	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P345662	
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P345777	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.035		mg P/L	P345527	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Craig Cr @ Hendricks Ave

Collection Date/Time: 05/16/2018 11:20

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1993445	EPA 8321B	2,4-D	0.0096		ug/L	P345390	
		Bentazon	0.029		ug/L	P345390	
		MCP	0.0020	U	ug/L	P345390	
		Triclopyr**	0.0040	U	ug/L	P345390	
		Imidacloprid	0.042	J	ug/L	P345390	MS
		Diuron	0.047		ug/L	P345390	
		Pyraclostrobin**	0.0020	U	ug/L	P345390	
		Primidone**	0.0040	U	ug/L	P345390	
		Linuron	0.0040	U	ug/L	P345390	
		Acetaminophen**	0.0080	UJ	ug/L	P345390	MS, SUR
		Fenuron	0.016	U	ug/L	P345390	
		Imazapyr**	0.29		ug/L	P345390	
		Carbamazepine**	4.0E-04	U	ug/L	P345390	
		Fluridone**	0.019		ug/L	P345390	
		Hydrocodone**	8.0E-04	U	ug/L	P345390	
		Sucralose**	0.38		ug/L	P345394	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P345530

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345684

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345687

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345850

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345622

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345735

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: P345662

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345527

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

Reference Method: EPA 8321B
Batch ID: P345390

Component	Result	Code	Units
2,4-D	0.00200	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.00E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P345390

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
MCP	0.00200	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.00400	U	ug/L

Reference Method: EPA 8321B
Batch ID: P345394

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P345516

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P345912

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

Reference Method: SM 2540 C-97
Batch ID: P345966

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P345807

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P345915

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P345777

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P345777

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: P345684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345687

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345850

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345622

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345735

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: P345662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345527

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

Reference Method: EPA 8321B
Batch ID: P345390

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

Reference Method: EPA 8321B
 Batch ID: P345390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.0		P	40 - 150
Acetaminophen	125		P	30 - 150
Bentazon	125		P	30 - 150
Carbamazepine	80.1		P	40 - 150
Diuron	76.5		P	40 - 150
Fenuron	94.6		P	40 - 150
Fluridone	84.8		P	40 - 150
Hydrocodone	95.8		P	40 - 150
Imazapyr	82.2		P	40 - 150
Imidacloprid	103		P	40 - 160
Linuron	90.9		P	40 - 150
MCPP	84.4		P	40 - 150
Primidone	95.9		P	40 - 150
Pyraclostrobin	78.6		P	40 - 150
Triclopyr	82.8		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P345394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	79.4		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P345912

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

Reference Method: SM 4500 F-C-97
 Batch ID: P345915

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

Reference Method: SM 5310 B-00
 Batch ID: P345777

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P345684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993304	Chloride	95.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993304	Sulfate	97.6		P	90 - 110
1993350	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993366	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993365	Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993357	NO2NO3-N	96.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P345662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993366	Total-P	101	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P345527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993429	O-Phosphate-P	97.6	95.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P345390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993445	2,4-D	106	91.6	P/P	40 - 150
1993445	Acetaminophen	139	155	P/F	30 - 150
1993445	Bentazon	92.4	102	P/P	30 - 150
1993445	Carbamazepine	57.4	60.7	P/P	40 - 150
1993445	Diuron	48.4	56.9	P/P	40 - 150
1993445	Fenuron	71.3	78.6	P/P	40 - 150
1993445	Fluridone	62.5	68.5	P/P	40 - 150
1993445	Hydrocodone	95.3	104	P/P	40 - 150
1993445	Imazapyr	65.0	98.2	P/P	40 - 150
1993445	Imidacloprid	164	180	F/F	40 - 160
1993445	Linuron	69.7	86.3	P/P	40 - 150
1993445	MCP	119	117	P/P	40 - 150
1993445	Primidone	87.7	95.7	P/P	40 - 150
1993445	Pyraclostrobin	78.8	85.3	P/P	40 - 150
1993445	Triclopyr	130	132	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P345394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1992930	Sucralose	78.8	70.8	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P345915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993351	Fluoride	94.7	94.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P345777

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1993428	Organic Carbon	94.0	96.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P345530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993427	Turbidity	4.39	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P345684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993304	Chloride	0.257	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P345850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993366	Ammonia-N	1.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P345622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993365	Kjeldahl Nitrogen	3.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P345735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993357	NO2NO3-N	0.517	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P345662

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993366	Total-P	2.31	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P345527

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993429	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P345390

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993445	2,4-D	12.8	Spike	P	0 - 30
1993445	Acetaminophen	10.8	Spike	P	0 - 30
1993445	Bentazon	6.76	Spike	P	0 - 30
1993445	Carbamazepine	5.60	Spike	P	0 - 30
1993445	Diuron	7.61	Spike	P	0 - 30
1993445	Fenuron	9.73	Spike	P	0 - 30
1993445	Fluridone	6.70	Spike	P	0 - 30
1993445	Hydrocodone	9.14	Spike	P	0 - 30
1993445	Imazapyr	7.38	Spike	P	0 - 30
1993445	Imidacloprid	6.94	Spike	P	0 - 30
1993445	Linuron	21.3	Spike	P	0 - 30
1993445	MCP	1.09	Spike	P	0 - 30
1993445	Primidone	8.74	Spike	P	0 - 30
1993445	Pyraclostrobin	7.87	Spike	P	0 - 30
1993445	Triclopyr	1.43	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P345394

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1992930	Sucralose	10.7	Spike	P	0 - 30

Reference Method: SM 2120 B

Batch ID: P345516

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993362	Color (true)	6.30	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P345912

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993351	Total Alkalinity	0.289	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P345966

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993456	TDS	3.31	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P345807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993456	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P345915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993351	Fluoride	0.474	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P345777

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1993428	Organic Carbon	1.49	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: 1993445
Field Sample ID: 20030793

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	52.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	168	F	30 - 160
EPA 8321B	Carbamazepine-d10	48.5	P	30 - 160
EPA 8321B	Diuron-d6	52.9	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	95.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A83981
Included Lab Sample IDs: 1993427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A83983

Included Lab Sample IDs: 1993429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A83984

Included Lab Sample IDs: 1993427

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84015

Included Lab Sample IDs: 1993427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.2	100	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84080

Included Lab Sample IDs: 1993428

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

Reference Method: SM 5310 B-00

Run ID: A84096

Included Lab Sample IDs: 1993428

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	97.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84107

Included Lab Sample IDs: 1993445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	81.4	84.8	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A84116

Included Lab Sample IDs: 1993428

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84126

Included Lab Sample IDs: 1993428

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A84131

Included Lab Sample IDs: 1993428

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

Reference Method: SM 2320 B-97

Run ID: A84146

Included Lab Sample IDs: 1993427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A84146

Included Lab Sample IDs: 1993427

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A84268

Included Lab Sample IDs: 1993445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	110	108	P/P	50 - 150
Acetaminophen	130	131	P/P	60 - 150
Bentazon	94.6	97.9	P/P	50 - 150
Carbamazepine	86.4	109	P/P	60 - 150
Diuron	107	109	P/P	60 - 150
Fenuron	103	105	P/P	60 - 150
Fluridone	109	110	P/P	60 - 160
Hydrocodone	108	109	P/P	60 - 150
Imazapyr	93.8	98.7	P/P	50 - 150
Imidacloprid	101	104	P/P	60 - 150
Linuron	92.2	97.6	P/P	60 - 150
MCPP	105	111	P/P	50 - 150
Primidone	103	106	P/P	60 - 150
Pyraclostrobin	96.9	105	P/P	60 - 150
Triclopyr	104	116	P/P	50 - 160

* 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				4.39	
EPA 300.0 Rev. 2.1	Chloride	97.7	95.4		0.257	
	Sulfate	98.8	97.6	97.1		
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	98.8	100		1.41

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	101	105			3.96
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	96.5	97.0			0.517
EPA 365.1 Rev. 2.0	Total-P	98.2	101	98.6			2.31
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	97.6	95.7			1.44
EPA 8321B	2,4-D	74.0	106	91.6			12.8
	Acetaminophen	125	139	155			10.8
	Bentazon	125	92.4	102			6.76
	Carbamazepine	80.1	57.4	60.7			5.60
	Diuron	76.5	48.4	56.9			7.61
	Fenuron	94.6	71.3	78.6			9.73
	Fluridone	84.8	62.5	68.5			6.70
	Hydrocodone	95.8	95.3	104			9.14
	Imazapyr	82.2	65.0	98.2			7.38
	Imidacloprid	103	164	180			6.94
	Linuron	90.9	69.7	86.3			21.3
	MCP	84.4	119	117			1.09
	Primidone	95.9	87.7	95.7			8.74
	Pyraclostrobin	78.6	78.8	85.3			7.87
	Sucralose	79.4	78.8	70.8			10.7
	Triclopyr	82.8	130	132			1.43
SM 2120 B	Color (true)					6.30	
SM 2320 B-97	Total Alkalinity	102				0.289	
SM 2540 C-97	TDS					3.31	
SM 2540 D-97	TSS					0.0	
SM 4500 F-C-97	Fluoride	95.9	94.7	94.1			0.474
SM 5310 B-00	Organic Carbon	94.9	94.0	96.1			1.49

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1993427
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1993427
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1993427
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1993428
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1993428
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1993428
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1993428
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1993429
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1993445
SM 2120 B / E31780	True Color measured at 450 nm	1993427
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1993427
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1993427
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	1993427
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1993427
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1993428

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	05/17/2018			05/17/2018 17:09	William L. Brown IV	1993427
EPA 300.0 Rev. 2.1	05/17/2018			05/19/2018 03:19	Lipi Saha	1993427
EPA 350.1 Rev. 2.0	05/17/2018			05/22/2018 10:54	Ping Hua	1993428
EPA 351.2 Rev. 2.0	05/17/2018	05/21/2018 12:00	Tanya Welborn	05/23/2018 15:42	Joseph Suarez	1993428
EPA 353.2 Rev. 2.0	05/17/2018			05/22/2018 12:00	Lauren Bottorf	1993428
EPA 365.1 Rev. 2.0	05/17/2018	05/21/2018 13:05	Sima Feizi	05/23/2018 12:58	Beverly Y. Sanders	1993428
EPA 365.1 Rev. 2.0 dissolved	05/17/2018			05/17/2018 15:31	Megan Treadwell	1993429
EPA 8321B	05/17/2018	05/18/2018 10:00	Hoor Shaik	05/19/2018 01:22	Juyoung Kim	1993445
	05/17/2018	05/18/2018 10:00	Hoor Shaik	05/19/2018 18:06	Juyoung Kim	1993445
	05/17/2018	05/18/2018 14:30	Juyoung Kim	05/21/2018 18:07	Juyoung Kim	1993445
SM 2120 B	05/17/2018			05/17/2018 14:14	Tanya Welborn	1993427
SM 2320 B-97	05/17/2018			05/24/2018 02:54	Dale L. Simmons	1993427
SM 2540 C-97	05/17/2018			05/18/2018 16:00	William L. Brown IV	1993427
SM 2540 D-97	05/17/2018			05/18/2018 16:00	William L. Brown IV	1993427
SM 4500 F-C-97	05/17/2018			05/24/2018 02:54	Dale L. Simmons	1993427
SM 5310 B-00	05/17/2018			05/21/2018 16:25	Megan Treadwell	1993428