Chemical Analysis Report

SW-DIST-2019-04-30-03

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

Event Description: **Run 10: Longboat and such**
Request ID: **RQ-2019-04-22-05**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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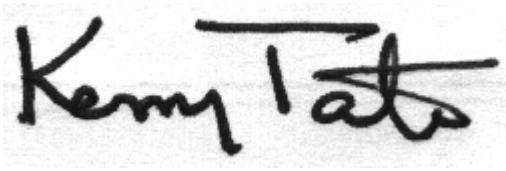
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-MAY-2019 11:28



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: WARES CRK @ 36th AVE **Collection Date/Time: 04/29/2019 11:30**

Field ID: G2SW0031 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081714	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P363111	
	EPA 300.0 Rev. 2.1	Chloride	57		mg Cl/L	P363392	
		Sulfate	120		mg SO4/L	P363394	
	SM 2120 B	Color (true)	28		PCU	P363144	
	SM 2320 B-97	Total Alkalinity	196		mg CaCO3/L	P363361	
	SM 2540 C-97	TDS	469		mg/L	P363476	
	SM 2540 D-97	TSS	2	U	mg/L	P363419	
	SM 4500 F-C-97	Fluoride	0.56		mg F/L	P363555	
2081716	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P363266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P363616	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.013		mg N/L	P363245	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P363175	
	SM 5310 B-00	Organic Carbon	7.6		mg C/L	P363287	
2081718	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P363118	
2081752	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P362987	
		2,4-D	0.0039	I	ug/L	P362847	MS, RPD
		AMPA**	0.53		ug/L	P362987	
		Sucralose**	0.16		ug/L	P362987	
		Endothall**	0.25	U	ug/L	P362987	
		Acetaminophen**	0.0080	U	ug/L	P362847	
		Glufosinate**	0.10	U	ug/L	P362987	
		Glyphosate**	0.32	I	ug/L	P362987	
		Bentazon	0.0079		ug/L	P362847	MS
		Carbamazepine**	8.0E-04	U	ug/L	P362847	
		Diuron	0.0029	I	ug/L	P362847	
		Fenuron	0.016	U	ug/L	P362847	
		Fluridone**	0.13		ug/L	P362847	
		Imazapyr**	0.091		ug/L	P362847	MS
		Hydrocodone**	0.0020	U	ug/L	P362847	
		Ibuprofen**	0.020	U	ug/L	P362847	MS, RPD
		Imidacloprid	0.018		ug/L	P362847	
		Linuron	0.0040	U	ug/L	P362847	
		MCPP	0.0020	U	ug/L	P362847	RPD
		Naproxen**	0.0080	U	ug/L	P362847	MS
		Primidone**	0.0040	U	ug/L	P362847	
		Pyraclostrobin**	0.0020	U	ug/L	P362847	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P362847	MS, RPD

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: WARES CREEK FRESH @ 30th AVE WEST **Collection Date/Time: 04/29/2019 11:00**

Field ID: G2SW0109 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081715	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P363111	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P363392	
		Sulfate	110		mg SO4/L	P363394	
	SM 2120 B	Color (true)	26		PCU	P363144	
	SM 2320 B-97	Total Alkalinity	192		mg CaCO3/L	P363361	
	SM 2540 C-97	TDS	445		mg/L	P363476	
	SM 2540 D-97	TSS	2	U	mg/L	P363419	
	SM 4500 F-C-97	Fluoride	0.57		mg F/L	P363555	
2081717	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P363266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P363270	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P363245	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P363175	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P363287	
2081719	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.10		mg P/L	P363118	
2081753	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P362987	
		2,4-D	0.0041	I	ug/L	P362847	MS, RPD
		AMPA**	0.64		ug/L	P362987	
		Sucralose**	0.14		ug/L	P362987	
		Endothall**	0.25	U	ug/L	P362987	
		Acetaminophen**	0.0080	U	ug/L	P362847	
		Glufosinate**	0.10	U	ug/L	P362987	
		Glyphosate**	0.44		ug/L	P362987	
		Bentazon	0.0062		ug/L	P362847	MS
		Carbamazepine**	8.0E-04	U	ug/L	P362847	
		Diuron	0.0026	I	ug/L	P362847	
		Fenuron	0.016	U	ug/L	P362847	
		Fluridone**	0.17		ug/L	P362847	
		Imazapyr**	0.41		ug/L	P362847	MS
		Hydrocodone**	0.0020	U	ug/L	P362847	
		Ibuprofen**	0.020	U	ug/L	P362847	MS, RPD
		Imidacloprid	0.018		ug/L	P362847	
		Linuron	0.0040	U	ug/L	P362847	
		MCPP	0.0020	U	ug/L	P362847	RPD
		Naproxen**	0.0080	U	ug/L	P362847	MS
		Primidone**	0.0040	U	ug/L	P362847	
		Pyraclostrobin**	0.0020	U	ug/L	P362847	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P362847	MS, RPD

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: WARES CRK @ 9th AVE **Collection Date/Time: 04/29/2019 10:15**

Field ID: G2SW0029 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081723	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P363111	
	EPA 300.0	Bromide	21		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	14		mg/L	P363421	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P363870	
2081725	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P363265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P363191	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.052		mg N/L	P363159	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P363177	
	SM 5310 B-00	Organic Carbon	7.8		mg C/L	P363289	
2081727	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P363119	
2081754	EPA 8321B	2,4-D	0.0044	I	ug/L	P362847	MS, RPD
		Acesulfame K**	0.10	UJ	ug/L	P362987	SUR
		AMPA**	1.5	I	ug/L	P362987	
		Sucralose**	0.29		ug/L	P362987	
		Acetaminophen**	0.0080	U	ug/L	P362847	
		Endothall**	0.25	UJ	ug/L	P362987	SUR
		Glufosinate**	1.0	U	ug/L	P362987	
		Glyphosate**	1.0	U	ug/L	P362987	
		Bentazon	0.012		ug/L	P362847	MS
		Carbamazepine**	8.0E-04	U	ug/L	P362847	
		Diuron	0.0049	I	ug/L	P362847	
		Fenuron	0.016	U	ug/L	P362847	
		Fluridone**	0.12		ug/L	P362847	
		Imazapyr**	0.21		ug/L	P362847	MS
		Hydrocodone**	0.0020	U	ug/L	P362847	
		Ibuprofen**	0.020	U	ug/L	P362847	MS, RPD
		Imidacloprid	0.013		ug/L	P362847	
		Linuron	0.0040	U	ug/L	P362847	
		MCPP	0.0020	U	ug/L	P362847	RPD
		Naproxen**	0.0080	U	ug/L	P362847	MS
		Primidone**	0.0040	U	ug/L	P362847	
		Pyraclostrobin**	0.0020	U	ug/L	P362847	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P362847	MS, RPD

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference. MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: WARES CRK TIDAL BY WATERTOWER **Collection Date/Time: 04/29/2019 10:30**

Field ID: G2SW0108 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081724	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P363111	
	EPA 300.0	Bromide	0.41		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	173		mg CaCO3/L	P363361	
	SM 2540 D-97	TSS	2	U	mg/L	P363418	
	SM 4500 F-C-97	Fluoride	0.50		mg F/L	P363555	
2081726	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P363266	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P363270	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P363245	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P363175	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P363287	
2081728	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P363120	
2081755	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P362987	
		2,4-D	0.0071	I	ug/L	P362847	MS, RPD
		AMPA**	0.51		ug/L	P362987	
		Sucralose**	0.17		ug/L	P362987	
		Endothall**	0.25	U	ug/L	P362987	
		Acetaminophen**	0.0080	U	ug/L	P362847	
		Glufosinate**	0.10	U	ug/L	P362987	
		Glyphosate**	0.19	I	ug/L	P362987	
		Bentazon	0.0089		ug/L	P362847	MS
		Carbamazepine**	8.0E-04	U	ug/L	P362847	
		Diuron	0.0034	I	ug/L	P362847	
		Fenuron	0.016	U	ug/L	P362847	
		Fluridone**	0.16		ug/L	P362847	
		Imazapyr**	0.40		ug/L	P362847	MS
		Hydrocodone**	0.0020	U	ug/L	P362847	
		Ibuprofen**	0.020	U	ug/L	P362847	MS, RPD
		Imidacloprid	0.019		ug/L	P362847	
		Linuron	0.0040	U	ug/L	P362847	
		MCPP	0.0020	U	ug/L	P362847	RPD
		Naproxen**	0.0080	U	ug/L	P362847	MS
		Primidone**	0.0040	U	ug/L	P362847	
		Pyraclostrobin**	0.0020	U	ug/L	P362847	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P362847	MS, RPD

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: LONGBOAT KEY @ BISHOPS BAYOU **Collection Date/Time: 04/29/2019 12:10**

Field ID: G3SW0052 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2081720	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P363111	
	EPA 300.0	Bromide	70		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	135		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	7	I	mg/L	P363421	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P363872	
2081721	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P363265	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P363191	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363159	
	EPA 365.1 Rev. 2.0	Total-P	0.006	I	mg P/L	P363177	
	SM 5310 B-00	Organic Carbon	3.6		mg C/L	P363289	
2081722	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P363119	

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: P363111

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P363643

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363392

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363394

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363266

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363191

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363270

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363616

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363159

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363245

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363175

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363177

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363118

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363120

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

Reference Method: EPA 8321B
Batch ID: P362847

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P362847

Component	Result	Code	Units
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	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: P362987

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P363144

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363361

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

Reference Method: SM 2320 B-97
Batch ID: P363495

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

Reference Method: SM 2540 C-97
Batch ID: P363476

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363418

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P363419

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363421

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363555

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363870

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363287

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

Reference Method: SM 5310 B-00
Batch ID: P363289

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P363643

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363392

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363394

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363265

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363266

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: P363191

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363270

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363616

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: P363159

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363245

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: P363175

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363177

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: P363118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363120

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

Reference Method: EPA 8321B
Batch ID: P362847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	59.0		P	40 - 150
Acetaminophen	101		P	30 - 150
Bentazon	81.5		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	94.1		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	130		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	56.6		P	40 - 150
Imazapyr	85.6		P	40 - 150
Imidacloprid	108		P	40 - 150
Linuron	72.1		P	40 - 150
MCPP	73.1		P	40 - 150
Naproxen	42.4		P	40 - 150
Primidone	96.4		P	40 - 150
Pyraclostrobin	59.0		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P362847

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Triclopyr	48.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.9		P	40 - 150
AMPA	97.2		P	40 - 150
Endothall	72.9		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	131		P	40 - 140
Sucralose	94.3		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P363144

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

Reference Method: SM 2320 B-97
Batch ID: P363361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363870

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P363287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P363289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P363643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082903	Bromide	95.9	94.8	P/P	90 - 110
2082953	Bromide	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081350	Chloride	100		P	90 - 110
2081699	Chloride	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081350	Sulfate	101		P	90 - 110
2081699	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081637	Ammonia-N	101	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081716	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363191

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081343	Kjeldahl Nitrogen	98.9	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081717	Kjeldahl Nitrogen	105	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081598	Kjeldahl Nitrogen	104	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081344	NO2NO3-N	104	104	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081687	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081716	Total-P	97.4	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081343	Total-P	91.4	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081601	O-Phosphate-P	96.6	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081722	O-Phosphate-P	94.7	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081688	O-Phosphate-P	94.6	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P362847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081049	2,4-D	58.4	32.6	P/F	40 - 150
2081049	Acetaminophen	59.4	62.9	P/P	30 - 150
2081049	Bentazon	31.9	28.6	P/F	30 - 150
2081049	Carbamazepine	72.1	64.2	P/P	40 - 150
2081049	Diuron	60.4	53.8	P/P	40 - 150
2081049	Fenuron	96.6	125	P/P	40 - 150
2081049	Fluridone	132	111	P/P	40 - 150
2081049	Hydrocodone	72.1	81.3	P/P	40 - 150
2081049	Ibuprofen	52.2	35.2	P/F	40 - 150
2081049	Imazapyr	27.2	61.6	F/P	40 - 150
2081049	Imidacloprid	137	125	P/P	40 - 150
2081049	Linuron	46.3	42.3	P/P	40 - 150
2081049	MCPP	85.5	58.4	P/P	40 - 150
2081049	Naproxen	28.3	24.1	F/F	40 - 150
2081049	Primidone	44.7	52.7	P/P	40 - 150
2081049	Pyraclostrobin	51.5	16.6	P/F	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P362847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081049	Triclopyr	52.8	20.1	P/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P362987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081049	Acesulfame K	92.7	89.5	P/P	40 - 150
2081049	AMPA	71.6	69.4	P/P	40 - 150
2081049	Endothall	66.2	70.0	P/P	40 - 150
2081049	Glufosinate	85.4	93.3	P/P	40 - 150
2081049	Sucralose	85.8	80.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P363555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081358	Fluoride	97.3	97.3	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081723	Fluoride	97.5	98.4	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082745	Fluoride	96.6	96.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081416	Organic Carbon	97.3	99.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P363289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081675	Organic Carbon	94.2	93.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081807	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P363643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082903	Bromide	0.937	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081699	Chloride	0.350	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P363394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081699	Sulfate	0.344	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081637	Ammonia-N	1.70	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081716	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363191

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081343	Kjeldahl Nitrogen	2.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081717	Kjeldahl Nitrogen	2.03	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081598	Kjeldahl Nitrogen	4.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081344	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081687	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081716	Total-P	0.232	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081343	Total-P	4.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081601	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081722	O-Phosphate-P	0.100	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081688	O-Phosphate-P	2.61	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P362847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081049	2,4-D	37.0	Spike	F	0 - 30
2081049	Acetaminophen	5.71	Spike	P	0 - 30
2081049	Bentazon	6.13	Spike	P	0 - 30
2081049	Carbamazepine	6.88	Spike	P	0 - 30
2081049	Diuron	11.4	Spike	P	0 - 30
2081049	Fenuron	25.7	Spike	P	0 - 30
2081049	Fluridone	12.2	Spike	P	0 - 30
2081049	Hydrocodone	11.9	Spike	P	0 - 30
2081049	Ibuprofen	38.9	Spike	F	0 - 30
2081049	Imazapyr	13.6	Spike	P	0 - 30
2081049	Imidacloprid	7.99	Spike	P	0 - 30
2081049	Linuron	9.00	Spike	P	0 - 30
2081049	MCPP	37.7	Spike	F	0 - 30
2081049	Naproxen	16.1	Spike	P	0 - 30
2081049	Primidone	11.7	Spike	P	0 - 30
2081049	Pyraclostrobin	103	Spike	F	0 - 30
2081049	Triclopyr	89.8	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P362987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081049	Acesulfame K	3.51	Spike	P	0 - 30
2081049	AMPA	0.694	Spike	P	0 - 30
2081049	Endothall	5.52	Spike	P	0 - 30
2081049	Glufosinate	8.91	Spike	P	0 - 30
2081049	Glyphosate	1.38	Spike	P	0 - 30
2081049	Sucralose	2.58	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P363144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081698	Color (true)	1.17	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081358	Total Alkalinity	0.293	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P363495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Total Alkalinity	0.925	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P363476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081596	TDS	6.36	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081358	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081723	Fluoride	0.477	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081416	Organic Carbon	1.57	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P363289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081675	Organic Carbon	0.518	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: 2081752
Field Sample ID: G2SW0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	53.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	90.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.7	P	30 - 160
EPA 8321B	Diuron-d6	80.5	P	30 - 160
EPA 8321B	Endothall-d6	96.8	P	30 - 160
EPA 8321B	Endothall-d6	96.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.1	P	30 - 160
EPA 8321B	Primidone-d5	58.9	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160

Lab Sample ID: 2081753
Field Sample ID: G2SW0109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	59.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.7	P	30 - 160
EPA 8321B	Diuron-d6	73.9	P	30 - 160
EPA 8321B	Endothall-d6	88.7	P	30 - 160
EPA 8321B	Endothall-d6	88.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.4	P	30 - 160
EPA 8321B	Primidone-d5	73.1	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160

Lab Sample ID: 2081754
Field Sample ID: G2SW0029

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.9	P	30 - 160
EPA 8321B	Diuron-d6	81.4	P	30 - 160
EPA 8321B	Endothall-d6	497	F	30 - 160
EPA 8321B	Endothall-d6	497	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	38.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	38.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.4	P	30 - 160
EPA 8321B	Primidone-d5	83.7	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160
EPA 8321B	Sucralose-d6	121	P	30 - 160

Lab Sample ID: 2081755
Field Sample ID: G2SW0108

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	68.9	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 2081755
Field Sample ID: G2SW0108

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	95.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.1	P	30 - 160
EPA 8321B	Diuron-d6	86.8	P	30 - 160
EPA 8321B	Endothall-d6	91.1	P	30 - 160
EPA 8321B	Endothall-d6	91.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	54.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.4	P	30 - 160
EPA 8321B	Primidone-d5	87.7	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A91101
Included Lab Sample IDs: 2081714, 2081715, 2081720, 2081723, 2081724

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: A91104
Included Lab Sample IDs: 2081718, 2081719, 2081722, 2081727, 2081728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.8	P/P	90 - 110
O-Phosphate-P	97.4	98.0	P/P	90 - 110
O-Phosphate-P	98.8	99.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91105
Included Lab Sample IDs: 2081714, 2081715

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

Reference Method: SM 2120 B
Run ID: A91118
Included Lab Sample IDs: 2081714, 2081715

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	101	P/P	90 - 115

Reference Method: EPA 8321B
Run ID: A91120
Included Lab Sample IDs: 2081752, 2081753, 2081754, 2081755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	73.8	90.7	P/P	60 - 160
Acesulfame K	96.1	73.8	P/P	60 - 160
Endothall	74.7	75.3	P/P	60 - 160
Endothall	77.3	74.7	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91123
Included Lab Sample IDs: 2081721, 2081725

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

Reference Method: EPA 8321B
Run ID: A91126
Included Lab Sample IDs: 2081752, 2081753, 2081754, 2081755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	60.8	61.4	P/P	60 - 160
AMPA	61.4	62.0	P/P	60 - 160
Glufosinate	81.5	86.0	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A91126
Included Lab Sample IDs: 2081752, 2081753, 2081754, 2081755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	95.5	81.5	P/P	60 - 160
Glyphosate	97.6	99.0	P/P	60 - 160
Glyphosate	99.0	103	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A91151
Included Lab Sample IDs: 2081716, 2081717, 2081726

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91155
Included Lab Sample IDs: 2081716, 2081717, 2081725, 2081726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	101	104	P/P	90 - 110
Total-P	104	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A91161
Included Lab Sample IDs: 2081721

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A91165
Included Lab Sample IDs: 2081716, 2081717, 2081721, 2081725, 2081726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	105	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A91170
Included Lab Sample IDs: 2081716, 2081717, 2081721, 2081725, 2081726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	92.0	P/P	90 - 110
Organic Carbon	99.0	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A91204
Included Lab Sample IDs: 2081714, 2081715, 2081724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	99.6	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A91231
Included Lab Sample IDs: 2081752, 2081753, 2081754, 2081755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.5	79.2	P/P	50 - 150
Acetaminophen	111	137	P/P	60 - 160
Bentazon	89.5	88.4	P/P	50 - 160
Carbamazepine	119	120	P/P	60 - 150
Diuron	119	114	P/P	60 - 150
Fenuron	108	116	P/P	60 - 150
Fluridone	129	110	P/P	60 - 160
Hydrocodone	109	115	P/P	60 - 150
Ibuprofen	72.3	62.3	P/P	50 - 160
Imazapyr	108	98.7	P/P	50 - 150
Imidacloprid	107	118	P/P	60 - 150
Linuron	73.0	88.7	P/P	60 - 150
MCPP	77.0	80.5	P/P	50 - 150
Naproxen	85.4	90.3	P/P	50 - 160
Primidone	118	110	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Triclopyr	86.0	82.7	P/P	50 - 150

Reference Method: SM 2320 B-97
Run ID: A91249
Included Lab Sample IDs: 2081720, 2081723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91251
Included Lab Sample IDs: 2081717, 2081721, 2081725, 2081726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A91266
Included Lab Sample IDs: 2081714, 2081715, 2081724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A91304
Included Lab Sample IDs: 2081720, 2081723, 2081724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	104	P/P	90 - 110
Bromide	99.6	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91333
Included Lab Sample IDs: 2081716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	102	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A91344
Included Lab Sample IDs: 2081752, 2081753, 2081754, 2081755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	94.2	P/P	60 - 160
Sucralose	94.2	99.4	P/P	60 - 160

Reference Method: SM 4500 F-C-97
Run ID: A91397
Included Lab Sample IDs: 2081720, 2081723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	97.6	P/P	90 - 110
Fluoride	100	98.5	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			Precision		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.0	
EPA 300.0	Bromide	97.1	95.9	94.8	95.3			0.937
EPA 300.0 Rev. 2.1	Chloride	99.5	95.6	100			0.350	
	Sulfate	101	98.6	101			0.344	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	104				1.70
	Ammonia-N	103	100	101				1.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.9	102				2.19
	Kjeldahl Nitrogen	106	105	108				2.03
	Kjeldahl Nitrogen	102	104	98.8				4.24
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104				0.482
	NO2NO3-N	102	100	100				0.0
EPA 365.1 Rev. 2.0	Total-P	102	97.4	97.7				0.232
	Total-P	101	91.4	96.2				4.98
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	96.6	96.7				0.103
	O-Phosphate-P	99.2	94.7	94.8				0.100
	O-Phosphate-P	98.7	94.6	97.1				2.61
EPA 8321B	2,4-D	59.0	58.4	32.6				37.0
	Acesulfame K	96.9	92.7	89.5				3.51
	Acetaminophen	101	59.4	62.9				5.71
	AMPA	97.2	71.6	69.4				0.694
	Bentazon	81.5	31.9	28.6				6.13
	Carbamazepine	102	72.1	64.2				6.88
	Diuron	94.1	60.4	53.8				11.4
	Endothall	72.9	66.2	70.0				5.52
	Fenuron	107	96.6	125				25.7
	Fluridone	130	132	111				12.2
	Glufosinate	107	85.4	93.3				8.91
	Glyphosate	131						1.38
	Hydrocodone	105	72.1	81.3				11.9
	Ibuprofen	56.6	35.2	52.2				38.9
	Imazapyr	85.6	27.2	61.6				13.6
	Imidacloprid	108	137	125				7.99
	Linuron	72.1	46.3	42.3				9.00
	MCPP	73.1	58.4	85.5				37.7
	Naproxen	42.4	28.3	24.1				16.1
	Primidone	96.4	44.7	52.7				11.7
	Pyraclostrobin	59.0	51.5	16.6				103
	Sucralose	94.3	85.8	80.2				2.58
	Triclopyr	48.8	52.8	20.1				89.8
SM 2120 B	Color (true)	98.6					1.17	
SM 2320 B-97	Total Alkalinity	102					0.293	
	Total Alkalinity	102					0.925	
SM 2540 C-97	TDS						6.36	
SM 4500 F-C-97	Fluoride	96.5	97.3	97.3				0.0
	Fluoride	96.6	97.5	98.4				0.477
	Fluoride	96.6	96.6	96.6				0.0
SM 5310 B-00	Organic Carbon	100	97.3	99.4				1.57
	Organic Carbon	98.6	94.2	93.6				0.518

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2081714, 2081715, 2081720, 2081723, 2081724
EPA 300.0 / E31780	Bromide in aqueous matrices	2081720, 2081723, 2081724
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2081714, 2081715
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2081714, 2081715
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2081716, 2081717, 2081721, 2081725, 2081726
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2081716, 2081717, 2081721, 2081725, 2081726
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2081716, 2081717, 2081721, 2081725, 2081726
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2081716, 2081717, 2081721, 2081725, 2081726
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2081718, 2081719, 2081722, 2081727, 2081728
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2081752, 2081753, 2081754, 2081755
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2081752, 2081753, 2081754, 2081755
SM 2120 B / E31780	True Color measured at 450 nm	2081714, 2081715
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2081714, 2081715, 2081720, 2081723, 2081724
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2081714, 2081715
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2081714, 2081715, 2081720, 2081723, 2081724
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2081714, 2081715, 2081720, 2081723, 2081724
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2081716, 2081717, 2081721, 2081725, 2081726

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	04/30/2019			04/30/2019 15:46	Adrian Shelby	2081714, 2081715, 2081720, 2081723, 2081724
EPA 300.0	04/30/2019			05/08/2019 17:49	Lipi Saha	2081720
	04/30/2019			05/08/2019 18:40	Lipi Saha	2081723
	04/30/2019			05/08/2019 18:57	Lipi Saha	2081724
EPA 300.0 Rev. 2.1	04/30/2019			05/02/2019 18:23	Lipi Saha	2081714
	04/30/2019			05/02/2019 18:35	Lipi Saha	2081715
EPA 350.1 Rev. 2.0	04/30/2019			05/02/2019 12:11	Ping Hua	2081721
	04/30/2019			05/02/2019 12:13	Ping Hua	2081725
	04/30/2019			05/02/2019 12:20	Ping Hua	2081716
	04/30/2019			05/02/2019 12:40	Ping Hua	2081717
	04/30/2019			05/02/2019 12:41	Ping Hua	2081726
EPA 351.2 Rev. 2.0	04/30/2019	05/01/2019 11:45	Adrian Shelby	05/07/2019 09:58	Joseph Suarez	2081721
	04/30/2019	05/01/2019 11:45	Adrian Shelby	05/07/2019 09:59	Joseph Suarez	2081725
	04/30/2019	05/02/2019 16:45	Adrian Shelby	05/07/2019 11:12	Joseph Suarez	2081717
	04/30/2019	05/02/2019 16:45	Adrian Shelby	05/07/2019 11:20	Joseph Suarez	2081726
	04/30/2019	05/08/2019 12:15	Adrian Shelby	05/09/2019 11:56	Joseph Suarez	2081716
EPA 353.2 Rev. 2.0	04/30/2019			05/01/2019 11:17	Beverly Y. Sanders	2081721
	04/30/2019			05/01/2019 11:18	Beverly Y. Sanders	2081725
	04/30/2019			05/02/2019 09:44	Beverly Y. Sanders	2081716
	04/30/2019			05/02/2019 09:45	Beverly Y. Sanders	2081717
	04/30/2019			05/02/2019 09:46	Beverly Y. Sanders	2081726
EPA 365.1 Rev. 2.0	04/30/2019	05/01/2019 14:25	Sima Feizi	05/02/2019 09:55	Rosalyn Ballman	2081716
	04/30/2019	05/01/2019 14:25	Sima Feizi	05/02/2019 10:09	Rosalyn Ballman	2081717
	04/30/2019	05/01/2019 14:25	Sima Feizi	05/02/2019 10:10	Rosalyn Ballman	2081726
	04/30/2019	05/01/2019 14:25	Sima Feizi	05/02/2019 10:47	Rosalyn Ballman	2081725
	04/30/2019	05/01/2019 14:25	Sima Feizi	05/02/2019 14:10	Rosalyn Ballman	2081721
EPA 365.1 Rev. 2.0 dissolved	04/30/2019			04/30/2019 15:37	Jhamieka S. Greenwood	2081722
	04/30/2019			04/30/2019 15:48	Jhamieka S. Greenwood	2081718
	04/30/2019			04/30/2019 16:10	Jhamieka S. Greenwood	2081727
	04/30/2019			04/30/2019 16:11	Jhamieka S. Greenwood	2081719
	04/30/2019			04/30/2019 16:12	Jhamieka S. Greenwood	2081728
EPA 8321B	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 13:07	Rebecca Ware	2081752
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 13:15	Rebecca Ware	2081753
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 13:31	Rebecca Ware	2081755
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 14:21	Rebecca Ware	2081754
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 19:32	Rebecca Ware	2081752
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 19:46	Rebecca Ware	2081753
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 20:00	Rebecca Ware	2081754
	04/30/2019	04/30/2019 12:45	Rebecca Ware	04/30/2019 20:41	Rebecca Ware	2081755

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/30/2019	04/30/2019 12:45	Rebecca Ware	05/08/2019 18:03	Rebecca Ware	2081752
	04/30/2019	04/30/2019 12:45	Rebecca Ware	05/08/2019 18:27	Rebecca Ware	2081753
	04/30/2019	04/30/2019 12:45	Rebecca Ware	05/08/2019 18:39	Rebecca Ware	2081754
	04/30/2019	04/30/2019 12:45	Rebecca Ware	05/08/2019 18:51	Rebecca Ware	2081755
	04/30/2019	04/30/2019 14:00	Hoor Shaik	05/03/2019 04:18	Juyoung Kim	2081752
	04/30/2019	04/30/2019 14:00	Hoor Shaik	05/03/2019 04:53	Juyoung Kim	2081753
	04/30/2019	04/30/2019 14:00	Hoor Shaik	05/03/2019 05:27	Juyoung Kim	2081754
	04/30/2019	04/30/2019 14:00	Hoor Shaik	05/03/2019 06:36	Juyoung Kim	2081755
SM 2120 B	04/30/2019			04/30/2019 15:31	Blanca Fach	2081714
	04/30/2019			04/30/2019 15:32	Blanca Fach	2081715
SM 2320 B-97	04/30/2019			05/04/2019 17:46	Samantha Davila	2081714
	04/30/2019			05/04/2019 18:42	Samantha Davila	2081715
	04/30/2019			05/04/2019 20:03	Samantha Davila	2081724
	04/30/2019			05/07/2019 07:26	Dale L. Simmons	2081720
	04/30/2019			05/07/2019 07:39	Dale L. Simmons	2081723
SM 2540 C-97	04/30/2019			05/01/2019 14:56	Yijie Li	2081714, 2081715
SM 2540 D-97	04/30/2019			05/01/2019 14:56	Yijie Li	2081714, 2081715, 2081720, 2081723, 2081724
SM 4500 F-C-97	04/30/2019			05/07/2019 19:22	Dale L. Simmons	2081714
	04/30/2019			05/07/2019 19:26	Dale L. Simmons	2081715
	04/30/2019			05/07/2019 19:52	Dale L. Simmons	2081724
	04/30/2019			05/14/2019 02:18	Dale L. Simmons	2081723
	04/30/2019			05/14/2019 07:02	Dale L. Simmons	2081720
SM 5310 B-00	04/30/2019			05/02/2019 19:27	Lauren Lees	2081716
	04/30/2019			05/02/2019 19:41	Lauren Lees	2081717
	04/30/2019			05/02/2019 19:53	Lauren Lees	2081726
	04/30/2019			05/03/2019 05:18	Lauren Lees	2081721
	04/30/2019			05/03/2019 05:30	Lauren Lees	2081725