Chemical Analysis Report

SW-DIST-2019-06-14-01

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

Event Description: **PP Ditch 1&5, 34th St., McKay Tidal**
Request ID: **RQ-2019-06-03-04**
Customer: **SW-DIST**
Project ID: **SMP**

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This Report replaces the previous Report Serial Number: 0115207

Report Comment: A missing I data qualifier was added to the sucralose result for the sample with field ID G5SW0146.

Revision certified by: Colin Wright, Program Administrator

Date Certified: 30-JUL-2019 11:50

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: McKay Creek Tidal off Hickory **Collection Date/Time: 06/13/2019 11:10**

Field ID: G5SW0130 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095792	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P366167	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P366311	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P365945	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P365915	MS
	SM 5310 B-00	Organic Carbon	9.2		mg C/L	P366066	
2095794	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P365702	
2095816	EPA 8321B	2,4-D	0.12		ug/L	P365553	
		Acesulfame K**	0.10	UJ	ug/L	P365716	SUR
		AMPA**	1.0	U	ug/L	P365716	
		Sucralose**	1.7		ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	UJ	ug/L	P365716	SUR
		Glufosinate**	1.0	U	ug/L	P365716	
		Glyphosate**	1.0	U	ug/L	P365716	
		Bentazon	0.035		ug/L	P365553	
		Carbamazepine**	0.0018	I	ug/L	P365553	
		Diuron	0.018		ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	0.022		ug/L	P365553	
		Imazapyr**	0.015	I	ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.020		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0044	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0054	I	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Ref. Method and Comment:
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.

Sample Location: PP Ditch #1 @ 71st St. **Collection Date/Time: 06/13/2019 11:45**

Field ID: G5SW0134 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095791	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P365695	
	SM 2320 B-97	Total Alkalinity	150		mg CaCO3/L	P366156	
	SM 2540 D-97	TSS	6	I	mg/L	P366205	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P366160	
2095793	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P366167	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P366311	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.020		mg N/L	P365945	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P366016	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P366066	
2095795	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P365702	
2095817	EPA 8321B	2,4-D	0.11		ug/L	P365553	
		Acesulfame K**	0.10	UJ	ug/L	P365716	SUR
		AMPA**	1.0	U	ug/L	P365716	
		Sucralose**	2.0		ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	UJ	ug/L	P365716	SUR
		Glufosinate**	1.0	U	ug/L	P365716	
		Glyphosate**	2.0	I	ug/L	P365716	
		Bentazon	0.046		ug/L	P365553	
		Carbamazepine**	0.0033		ug/L	P365553	
		Diuron	0.021		ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	0.039		ug/L	P365553	
		Imazapyr**	0.066		ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.064		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0064	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.014	I	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	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.

Sample Location: 34th Street Basin @ 11 Ave S. **Collection Date/Time: 06/13/2019 12:30**

Field ID: G5SW0146 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095781	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P365695	
	EPA 300.0 Rev. 2.1	Chloride	58		mg Cl/L	P366134	
		Sulfate	30		mg SO4/L	P366136	
	SM 2120 B	Color (true)	54		PCU	P366195	
	SM 2320 B-97	Total Alkalinity	84		mg CaCO3/L	P366363	
	SM 2540 C-97	TDS	259		mg/L	P366244	
	SM 2540 D-97	TSS	2	I	mg/L	P366203	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P366159	
2095784	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P366169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P365947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.52		mg N/L	P365824	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P365940	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P366066	
2095787	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P365701	
2095813	EPA 8321B	2,4-D	0.0053	I	ug/L	P365553	
		Acesulfame K**	0.10	U	ug/L	P365716	
		AMPA**	0.12	I	ug/L	P365716	
		Sucralose**	0.039	I	ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	U	ug/L	P365716	
		Glufosinate**	0.10	U	ug/L	P365716	
		Glyphosate**	0.27	I	ug/L	P365716	
		Bentazon	0.0045		ug/L	P365553	
		Carbamazepine**	8.0E-04	U	ug/L	P365553	
		Diuron	0.0079	I	ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	8.0E-04	U	ug/L	P365553	
		Imazapyr**	0.0061	I	ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.016		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0028	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0040	U	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Sample Location: 34th Street Basin @ 11 Ave S. **Collection Date/Time: 06/13/2019 12:35**

Field ID: G5SW0146_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095782	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P365695	
	EPA 300.0 Rev. 2.1	Chloride	59		mg Cl/L	P366134	
		Sulfate	30		mg SO4/L	P366136	
	SM 2120 B	Color (true)	53		PCU	P366195	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P366363	
	SM 2540 C-97	TDS	268		mg/L	P366244	
	SM 2540 D-97	TSS	3	I	mg/L	P366203	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P366159	
2095785	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P366169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P365947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.52		mg N/L	P365824	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P365940	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P366066	
2095788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P365701	
2095814	EPA 8321B	2,4-D	0.0050	I	ug/L	P365553	
		Acesulfame K**	0.10	U	ug/L	P365716	
		AMPA**	0.13	I	ug/L	P365716	
		Sucralose**	0.031	I	ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	U	ug/L	P365716	
		Glufosinate**	0.10	U	ug/L	P365716	
		Glyphosate**	0.29	I	ug/L	P365716	
		Bentazon	0.0046		ug/L	P365553	
		Carbamazepine**	8.0E-04	U	ug/L	P365553	
		Diuron	0.0074	I	ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	8.0E-04	U	ug/L	P365553	
		Imazapyr**	0.0063	I	ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.017		ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0025	I	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0040	U	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

Sample Location: Field_Blank **Collection Date/Time: 06/13/2019 12:40**

Field ID: FB 06132019 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2095783	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P365695	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P366134	
		Sulfate	0.20	U	mg SO4/L	P366136	
	SM 2120 B	Color (true)	2.5	U	PCU	P366195	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P366156	
	SM 2540 C-97	TDS	15	U	mg/L	P366241	
	SM 2540 D-97	TSS	2	U	mg/L	P366200	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P366160	
2095786	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P366169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P365947	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P365824	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P365940	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P366066	
2095789	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P365701	
2095815	EPA 8321B	2,4-D	0.0020	U	ug/L	P365553	
		Acesulfame K**	0.10	U	ug/L	P365716	
		AMPA**	0.10	U	ug/L	P365716	
		Sucralose**	0.010	U	ug/L	P365716	
		Acetaminophen**	0.0080	U	ug/L	P365553	
		Endothall**	0.25	U	ug/L	P365716	
		Glufosinate**	0.10	U	ug/L	P365716	
		Glyphosate**	0.10	U	ug/L	P365716	
		Bentazon	8.0E-04	U	ug/L	P365553	
		Carbamazepine**	8.0E-04	U	ug/L	P365553	
		Diuron	0.0020	U	ug/L	P365553	
		Fenuron	0.016	U	ug/L	P365553	
		Fluridone**	8.0E-04	U	ug/L	P365553	
		Imazapyr**	0.0040	U	ug/L	P365553	
		Hydrocodone**	0.0020	U	ug/L	P365553	
		Ibuprofen**	0.020	U	ug/L	P365553	
		Imidacloprid	0.0020	U	ug/L	P365553	MS
		Linuron	0.0040	U	ug/L	P365553	
		MCPP	0.0020	U	ug/L	P365553	
		Naproxen**	0.0080	U	ug/L	P365553	
		Primidone**	0.0040	U	ug/L	P365553	
		Pyraclostrobin**	0.0020	U	ug/L	P365553	
		Triclopyr**	0.0040	U	ug/L	P365553	RPD

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: P365695

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365824

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365915

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366016

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365702

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

Reference Method: EPA 8321B
Batch ID: P365553

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
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: P365716

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P365716

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: P366195

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366156

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

Reference Method: SM 2320 B-97
Batch ID: P366363

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

Reference Method: SM 2540 C-97
Batch ID: P366241

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P366244

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366200

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P366203

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P366205

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P366160

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P366066

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: P366134

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	93.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

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: P366311

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365824

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

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: P365915

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366016

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365702

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

Reference Method: EPA 8321B
Batch ID: P365553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	79.7		P	30 - 150
Carbamazepine	106		P	40 - 150
Diuron	86.3		P	40 - 150
Fenuron	97.2		P	40 - 150
Fluridone	89.1		P	40 - 150
Hydrocodone	99.4		P	40 - 150
Ibuprofen	76.3		P	30 - 150
Imazapyr	92.1		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	67.3		P	40 - 150
MCPP	137		P	40 - 150
Naproxen	80.9		P	40 - 150
Primidone	97.7		P	40 - 150
Pyraclostrobin	77.0		P	30 - 150
Triclopyr	95.8		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P365716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	103		P	40 - 150
Endothall	95.4		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	108		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P366195

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

Reference Method: SM 2320 B-97
Batch ID: P366156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P366363

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P366160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P366066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095743	Chloride	97.1		P	90 - 110
2096055	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095743	Sulfate	97.6		P	90 - 110
2096055	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095629	Ammonia-N	110	109	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095733	Ammonia-N	99.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096016	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095718	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095784	NO2NO3-N	99.2	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095792	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095631	Total-P	89.6	92.1	F/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096016	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096214	Total-P	98.0	91.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095748	O-Phosphate-P	94.6	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095633	O-Phosphate-P	95.4	95.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P365553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	2,4-D	102	111	P/P	40 - 150
2095117	Acetaminophen	98.7	89.9	P/P	30 - 150
2095117	Bentazon	67.4	55.3	P/P	30 - 150
2095117	Carbamazepine	101	90.9	P/P	40 - 150
2095117	Diuron	79.2	74.5	P/P	40 - 150
2095117	Fenuron	95.5	91.9	P/P	40 - 150
2095117	Fluridone	88.3	88.0	P/P	40 - 150
2095117	Hydrocodone	120	104	P/P	40 - 150
2095117	Ibuprofen	72.6	64.3	P/P	30 - 150
2095117	Imazapyr	117	115	P/P	40 - 150
2095117	Imidacloprid	178	167	F/F	40 - 150
2095117	Linuron	66.4	61.2	P/P	40 - 150
2095117	MCPP	127	126	P/P	40 - 150
2095117	Naproxen	78.1	76.4	P/P	40 - 150
2095117	Primidone	80.0	79.6	P/P	40 - 150
2095117	Pyraclostrobin	83.3	78.0	P/P	30 - 150
2095117	Triclopyr	64.3	92.1	P/P	30 - 150

Reference Method: EPA 8321B
Batch ID: P365716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095117	Acesulfame K	108	112	P/P	40 - 150
2095117	AMPA	72.3	74.4	P/P	40 - 150
2095117	Endothall	60.8	60.2	P/P	40 - 150
2095117	Glufosinate	95.4	94.9	P/P	40 - 150
2095117	Glyphosate	98.1	98.3	P/P	40 - 140
2095117	Sucralose	101	114	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095730	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P366160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2096411	Fluoride	98.2	98.2	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095732	Organic Carbon	93.6	92.5	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095744	Turbidity	2.26	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366134

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095743	Chloride	0.350	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P366136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095743	Sulfate	0.331	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095629	Ammonia-N	0.772	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095733	Ammonia-N	0.116	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096016	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095718	Kjeldahl Nitrogen	2.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095784	NO2NO3-N	0.303	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095792	NO2NO3-N	0.735	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095631	Total-P	2.64	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096016	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096214	Total-P	6.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095748	O-Phosphate-P	1.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095633	O-Phosphate-P	0.338	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P365553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	2,4-D	7.94	Spike	P	0 - 30
2095117	Acetaminophen	9.39	Spike	P	0 - 30
2095117	Bentazon	18.5	Spike	P	0 - 30
2095117	Carbamazepine	10.3	Spike	P	0 - 30
2095117	Diuron	6.11	Spike	P	0 - 30
2095117	Fenuron	3.85	Spike	P	0 - 30
2095117	Fluridone	0.372	Spike	P	0 - 30
2095117	Hydrocodone	14.3	Spike	P	0 - 30
2095117	Ibuprofen	12.0	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P365553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	Imazapyr	1.67	Spike	P	0 - 30
2095117	Imidacloprid	6.00	Spike	P	0 - 30
2095117	Linuron	8.10	Spike	P	0 - 30
2095117	MCPP	0.876	Spike	P	0 - 30
2095117	Naproxen	2.12	Spike	P	0 - 30
2095117	Primidone	0.591	Spike	P	0 - 30
2095117	Pyraclostrobin	6.51	Spike	P	0 - 30
2095117	Triclopyr	35.5	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P365716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095117	Acesulfame K	3.84	Spike	P	0 - 30
2095117	AMPA	2.80	Spike	P	0 - 30
2095117	Endothall	0.915	Spike	P	0 - 30
2095117	Glufosinate	0.444	Spike	P	0 - 30
2095117	Glyphosate	0.229	Spike	P	0 - 30
2095117	Sucralose	12.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P366195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095730	Color (true)	1.68	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P366156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096411	Total Alkalinity	0.211	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P366363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095730	Total Alkalinity	0.437	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P366241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095554	TDS	3.07	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P366244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096050	TDS	7.64	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P366203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096050	TSS	3.08	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P366159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095730	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P366160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2096411	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P366066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2095732	Organic Carbon	0.780	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: 2095813
Field Sample ID: G5SW0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.8	P	30 - 160
EPA 8321B	Diuron-d6	52.7	P	30 - 160
EPA 8321B	Endothall-d6	76.8	P	30 - 160
EPA 8321B	Endothall-d6	76.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	47.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	47.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.7	P	30 - 160
EPA 8321B	Primidone-d5	84.1	P	30 - 160
EPA 8321B	Sucralose-d6	38.3	P	30 - 160
EPA 8321B	Sucralose-d6	38.3	P	30 - 160

Lab Sample ID: 2095814
Field Sample ID: G5SW0146_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	81.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.8	P	30 - 160
EPA 8321B	Diuron-d6	52.5	P	30 - 160
EPA 8321B	Endothall-d6	82.8	P	30 - 160
EPA 8321B	Endothall-d6	82.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	48.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	48.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	53.6	P	30 - 160
EPA 8321B	Primidone-d5	71.8	P	30 - 160
EPA 8321B	Sucralose-d6	37.3	P	30 - 160
EPA 8321B	Sucralose-d6	37.3	P	30 - 160

Lab Sample ID: 2095815
Field Sample ID: FB 06132019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.2	P	30 - 160
EPA 8321B	Diuron-d6	78.9	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.4	P	30 - 160
EPA 8321B	Primidone-d5	88.8	P	30 - 160
EPA 8321B	Sucralose-d6	97.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.1	P	30 - 160

Lab Sample ID: 2095816
Field Sample ID: G5SW0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.9	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 2095816
Field Sample ID: G5SW0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	77.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.3	P	30 - 160
EPA 8321B	Diuron-d6	61.8	P	30 - 160
EPA 8321B	Endothall-d6	402	F	30 - 160
EPA 8321B	Endothall-d6	402	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	43.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	43.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	58.1	P	30 - 160
EPA 8321B	Primidone-d5	71.6	P	30 - 160
EPA 8321B	Sucralose-d6	134	P	30 - 160
EPA 8321B	Sucralose-d6	134	P	30 - 160

Lab Sample ID: 2095817
Field Sample ID: G5SW0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.6	P	30 - 160
EPA 8321B	Diuron-d6	52.3	P	30 - 160
EPA 8321B	Endothall-d6	437	F	30 - 160
EPA 8321B	Endothall-d6	437	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	45.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	45.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.0	P	30 - 160
EPA 8321B	Primidone-d5	78.0	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A92117
Included Lab Sample IDs: 2095781, 2095782, 2095783, 2095791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A92120
Included Lab Sample IDs: 2095787, 2095788, 2095789, 2095794, 2095795

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.2	96.3	P/P	90 - 110
O-Phosphate-P	96.3	96.2	P/P	90 - 110
O-Phosphate-P	96.7	96.3	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A92160
Included Lab Sample IDs: 2095813, 2095814, 2095815, 2095816, 2095817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	92.7	P/P	60 - 160
Acesulfame K	92.7	103	P/P	60 - 160
Endothall	106	109	P/P	60 - 160
Endothall	97.8	106	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A92171
Included Lab Sample IDs: 2095781, 2095782, 2095783

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A92173
Included Lab Sample IDs: 2095784, 2095785, 2095786

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

Reference Method: EPA 8321B
Run ID: A92181
Included Lab Sample IDs: 2095813, 2095814, 2095815, 2095816, 2095817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	72.1	78.7	P/P	60 - 160
AMPA	83.2	72.1	P/P	60 - 160
Glufosinate	85.4	89.4	P/P	60 - 160
Glufosinate	94.4	85.4	P/P	60 - 160
Glyphosate	84.3	92.8	P/P	60 - 160
Glyphosate	94.6	84.3	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A92205
Included Lab Sample IDs: 2095792, 2095793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92229
Included Lab Sample IDs: 2095784, 2095785, 2095792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110
Total-P	104	100	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A92253
Included Lab Sample IDs: 2095784, 2095785, 2095786, 2095792, 2095793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92263
Included Lab Sample IDs: 2095793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.9	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92267
Included Lab Sample IDs: 2095786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A92276
Included Lab Sample IDs: 2095784, 2095785, 2095786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	98.8	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A92292
Included Lab Sample IDs: 2095783, 2095791

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

Reference Method: SM 4500 F-C-97
Run ID: A92292
Included Lab Sample IDs: 2095781, 2095782, 2095783, 2095791

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A92292
Included Lab Sample IDs: 2095781, 2095782, 2095783, 2095791

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A92295
Included Lab Sample IDs: 2095792, 2095793

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A92297
Included Lab Sample IDs: 2095784, 2095785, 2095786

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

Reference Method: SM 2120 B
Run ID: A92306
Included Lab Sample IDs: 2095781, 2095782, 2095783

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

Reference Method: EPA 8321B
Run ID: A92342
Included Lab Sample IDs: 2095813, 2095814, 2095815, 2095816, 2095817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.7	67.2	P/P	50 - 150
Acetaminophen	85.5	72.9	P/P	60 - 160
Bentazon	68.1	97.3	P/P	50 - 160
Carbamazepine	107	104	P/P	60 - 150
Diuron	98.3	103	P/P	60 - 150
Fenuron	95.0	94.4	P/P	60 - 150
Fluridone	89.0	89.8	P/P	60 - 160
Hydrocodone	112	113	P/P	60 - 150
Ibuprofen	65.1	68.3	P/P	50 - 160
Imazapyr	69.0	79.7	P/P	50 - 150
Imidacloprid	86.5	105	P/P	60 - 150
Linuron	83.9	73.6	P/P	60 - 150
MCPP	77.2	69.1	P/P	50 - 150
Naproxen	91.8	73.0	P/P	50 - 160
Primidone	74.0	93.8	P/P	60 - 150
Pyraclostrobin	94.1	80.9	P/P	60 - 150
Triclopyr	81.7	72.6	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A92373
Included Lab Sample IDs: 2095792, 2095793

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.8	99.4	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A92380
Included Lab Sample IDs: 2095781, 2095782

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

Reference Method: EPA 8321B
Run ID: A92427
Included Lab Sample IDs: 2095813, 2095814, 2095815, 2095816, 2095817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	108	P/P	60 - 160
Sucralose	108	103	P/P	60 - 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		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.26	
EPA 300.0 Rev. 2.1	Chloride	93.7	97.1	98.0		0.350	
	Sulfate	98.2	97.6	97.1		0.331	
EPA 350.1 Rev. 2.0	Ammonia-N	105	110	109			0.772
	Ammonia-N	102	99.4	99.6			0.116
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	103	104			1.33
	Kjeldahl Nitrogen	104	109	106			2.34
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.2	99.8			0.303
	NO2NO3-N	102	101	102			0.735
EPA 365.1 Rev. 2.0	Total-P	102	89.6	92.1			2.64
	Total-P	101	104	102			1.28
	Total-P	98.6	98.0	91.8			6.47
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.5	94.6	95.9			1.22
	O-Phosphate-P	97.6	95.4	95.8			0.338
EPA 8321B	2,4-D	115	102	111			7.94
	Acesulfame K	106	108	112			3.84
	Acetaminophen	108	98.7	89.9			9.39
	AMPA	103	72.3	74.4			2.80
	Bentazon	79.7	67.4	55.3			18.5
	Carbamazepine	106	101	90.9			10.3
	Diuron	86.3	79.2	74.5			6.11
	Endothall	95.4	60.8	60.2			0.915
	Fenuron	97.2	95.5	91.9			3.85
	Fluridone	89.1	88.3	88.0			0.372
	Glufosinate	107	95.4	94.9			0.444
	Glyphosate	107	98.1	98.3			0.229
	Hydrocodone	99.4	120	104			14.3
	Ibuprofen	76.3	72.6	64.3			12.0
	Imazapyr	92.1	117	115			1.67
	Imidacloprid	103	178	167			6.00
	Linuron	67.3	66.4	61.2			8.10
	MCPP	137	127	126			0.876
	Naproxen	80.9	78.1	76.4			2.12
	Primidone	97.7	80.0	79.6			0.591
	Pyraclostrobin	77.0	83.3	78.0			6.51
	Sucralose	108	101	114			12.7
	Triclopyr	95.8	64.3	92.1			35.5
SM 2120 B	Color (true)	102				1.68	
SM 2320 B-97	Total Alkalinity	105				0.211	
	Total Alkalinity	104				0.437	
SM 2540 C-97	TDS					3.07	
	TDS					7.64	
SM 2540 D-97	TSS					3.08	
SM 4500 F-C-97	Fluoride	97.6	98.0	98.0			0.0
	Fluoride	98.6	98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	94.8	93.6	92.5			0.780

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2095781, 2095782, 2095783, 2095791

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2095781, 2095782, 2095783
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2095781, 2095782, 2095783
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2095784, 2095785, 2095786, 2095792, 2095793
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2095784, 2095785, 2095786, 2095792, 2095793
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2095784, 2095785, 2095786, 2095792, 2095793
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2095784, 2095785, 2095786, 2095792, 2095793
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2095787, 2095788, 2095789, 2095794, 2095795
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2095813, 2095814, 2095815, 2095816, 2095817
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2095813, 2095814, 2095815, 2095816, 2095817
SM 2120 B / E31780	True Color measured at 450 nm	2095781, 2095782, 2095783
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2095781, 2095782, 2095783, 2095791
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2095781, 2095782, 2095783
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2095781, 2095782, 2095783, 2095791
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2095781, 2095782, 2095783, 2095791
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2095784, 2095785, 2095786, 2095792, 2095793

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	06/14/2019			06/14/2019 16:39	Adrian Shelby	2095781, 2095782, 2095783, 2095791
EPA 300.0 Rev. 2.1	06/14/2019			06/19/2019 14:26	Lipi Saha	2095781
	06/14/2019			06/19/2019 14:38	Lipi Saha	2095782
	06/14/2019			06/19/2019 15:14	Lipi Saha	2095783
EPA 350.1 Rev. 2.0	06/14/2019			06/21/2019 12:02	Ping Hua	2095784
	06/14/2019			06/21/2019 12:03	Ping Hua	2095785
	06/14/2019			06/21/2019 12:08	Ping Hua	2095786
	06/14/2019			06/21/2019 14:03	Ping Hua	2095792
	06/14/2019			06/21/2019 14:04	Ping Hua	2095793
EPA 351.2 Rev. 2.0	06/14/2019	06/19/2019 10:47	Sima Feizi	06/21/2019 10:31	Joseph Suarez	2095784
	06/14/2019	06/19/2019 10:47	Sima Feizi	06/21/2019 10:33	Joseph Suarez	2095785
	06/14/2019	06/19/2019 10:47	Sima Feizi	06/21/2019 10:34	Joseph Suarez	2095786
	06/14/2019	06/24/2019 12:10	Adrian Shelby	06/26/2019 12:46	Virginia P. Brown	2095792
	06/14/2019	06/24/2019 12:10	Adrian Shelby	06/26/2019 12:48	Virginia P. Brown	2095793
EPA 353.2 Rev. 2.0	06/14/2019			06/18/2019 12:27	Beverly Y. Sanders	2095784
	06/14/2019			06/18/2019 12:31	Beverly Y. Sanders	2095785
	06/14/2019			06/18/2019 12:32	Beverly Y. Sanders	2095786
	06/14/2019			06/19/2019 10:58	Beverly Y. Sanders	2095792
	06/14/2019			06/19/2019 11:05	Beverly Y. Sanders	2095793
EPA 365.1 Rev. 2.0	06/14/2019	06/19/2019 12:35	Sima Feizi	06/20/2019 08:56	Lipi Saha	2095792
	06/14/2019	06/19/2019 12:35	Sima Feizi	06/20/2019 10:00	Lipi Saha	2095784
	06/14/2019	06/19/2019 12:35	Sima Feizi	06/20/2019 10:01	Lipi Saha	2095785
	06/14/2019	06/19/2019 12:35	Sima Feizi	06/21/2019 10:48	Lipi Saha	2095786
	06/14/2019	06/20/2019 13:17	Sima Feizi	06/21/2019 09:23	Lipi Saha	2095793
EPA 365.1 Rev. 2.0 dissolved	06/14/2019			06/14/2019 17:22	Jhamieka S. Greenwood	2095787
	06/14/2019			06/14/2019 17:23	Jhamieka S. Greenwood	2095788
	06/14/2019			06/14/2019 17:25	Jhamieka S. Greenwood	2095795
	06/14/2019			06/14/2019 17:32	Jhamieka S. Greenwood	2095789
	06/14/2019			06/14/2019 17:43	Jhamieka S. Greenwood	2095794
EPA 8321B	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 20:36	Rebecca Ware	2095813
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 20:49	Rebecca Ware	2095814
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 21:17	Rebecca Ware	2095815
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 21:31	Rebecca Ware	2095816
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/17/2019 21:45	Rebecca Ware	2095817
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 12:47	Rebecca Ware	2095813
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 12:58	Rebecca Ware	2095814
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 13:19	Rebecca Ware	2095815
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 14:24	Rebecca Ware	2095816
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/18/2019 14:34	Rebecca Ware	2095817
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 19:45	Rebecca Ware	2095813

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 19:57	Rebecca Ware	2095814
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 20:09	Rebecca Ware	2095815
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 20:21	Rebecca Ware	2095816
	06/14/2019	06/17/2019 10:30	Rebecca Ware	06/26/2019 20:56	Rebecca Ware	2095817
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 08:23	Juyoung Kim	2095813
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 08:58	Juyoung Kim	2095814
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 09:32	Juyoung Kim	2095815
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 10:07	Juyoung Kim	2095816
	06/14/2019	06/19/2019 09:00	Hoor Shaik	06/20/2019 10:42	Juyoung Kim	2095817
SM 2120 B	06/14/2019			06/14/2019 17:17	Madeline Funaro	2095781
	06/14/2019			06/14/2019 17:18	Madeline Funaro	2095782
	06/14/2019			06/14/2019 17:19	Madeline Funaro	2095783
SM 2320 B-97	06/14/2019			06/22/2019 09:19	Dale L. Simmons	2095783
	06/14/2019			06/22/2019 14:09	Dale L. Simmons	2095791
	06/14/2019			06/26/2019 09:51	Dale L. Simmons	2095781
	06/14/2019			06/26/2019 10:01	Dale L. Simmons	2095782
SM 2540 C-97	06/14/2019			06/19/2019 15:22	Yijie Li	2095781, 2095782, 2095783
SM 2540 D-97	06/14/2019			06/19/2019 15:22	Yijie Li	2095781, 2095782, 2095783, 2095791
SM 4500 F-C-97	06/14/2019			06/22/2019 06:31	Dale L. Simmons	2095781
	06/14/2019			06/22/2019 06:43	Dale L. Simmons	2095782
	06/14/2019			06/22/2019 09:19	Dale L. Simmons	2095783
	06/14/2019			06/22/2019 14:09	Dale L. Simmons	2095791
SM 5310 B-00	06/14/2019			06/18/2019 06:08	Madeline Funaro	2095784
	06/14/2019			06/18/2019 06:21	Madeline Funaro	2095785
	06/14/2019			06/18/2019 06:34	Madeline Funaro	2095786
	06/14/2019			06/18/2019 06:49	Madeline Funaro	2095792
	06/14/2019			06/18/2019 07:03	Madeline Funaro	2095793