Chemical Analysis Report

SO-DIST-2019-04-10-01

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

Event Description: **2019 SMP : LaBelle-ish**
Request ID: **RQ-2019-04-08-32**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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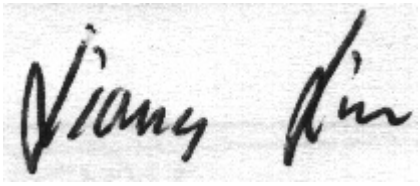
Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-APR-2019 15:39



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: Metals, 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: BeeBranch@LoblollyBayRd **Collection Date/Time: 04/09/2019 09:00**

Field ID: G3SD0085 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076901	EPA 180.1 Rev. 2.0	Turbidity	36		NTU	P361923	
	EPA 300.0 Rev. 2.1	Chloride	79		mg Cl/L	P362269	
		Sulfate	40		mg SO4/L	P362272	
	SM 2120 B	Color (true)	90	A	PCU	P361958	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P362174	RPD
	SM 2540 C-97	TDS	258	A	mg/L	P362517	
	SM 2540 D-97	TSS	147	A	mg/L	P362234	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P362180	
2076902	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P362402	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.6		mg N/L	P362340	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P362415	
	EPA 365.1 Rev. 2.0	Total-P	0.36		mg P/L	P362246	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P362106	
2076903	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.082		mg P/L	P361931	

Ref. Method and Comment:
SM 2540 D-97: Sample has large amount of particulate matter.

Sample Location: PollywogCreek@SR78 **Collection Date/Time: 04/09/2019 09:30**

Field ID: G3SD0098 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076917	EPA 8321B	2,4-D	0.0020	U	ug/L	P361794	
		Acesulfame K**	1.4		ug/L	P361901	MS
		AMPA**	0.17	I	ug/L	P361901	
		Sucralose**	0.51		ug/L	P361901	
		Acetaminophen**	0.0080	U	ug/L	P361794	
		Endothall**	0.25	U	ug/L	P361901	
		Glufosinate**	0.10	U	ug/L	P361901	
		Bentazon	8.0E-04	U	ug/L	P361794	
		Glyphosate**	0.10	U	ug/L	P361901	MS
		Carbamazepine**	0.011		ug/L	P361794	
		Diuron	0.0020	U	ug/L	P361794	
		Fenuron	0.016	U	ug/L	P361794	
		Fluridone**	8.0E-04	U	ug/L	P361794	
		Imazapyr**	0.0040	U	ug/L	P361794	
		Hydrocodone**	0.0020	U	ug/L	P361794	
		Ibuprofen**	0.020	U	ug/L	P361794	
		Imidacloprid	0.011		ug/L	P361794	MS
		Linuron	0.0040	U	ug/L	P361794	
		MCPP	0.0020	U	ug/L	P361794	
		Naproxen**	0.0080	U	ug/L	P361794	
		Primidone**	0.0040	U	ug/L	P361794	
		Pyraclostrobin**	0.0020	U	ug/L	P361794	
		Triclopyr**	0.0040	U	ug/L	P361794	

Sample Location: Ok Branch @ Eucalyptus **Collection Date/Time: 04/09/2019 10:00**

Field ID: G3SD0099 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076904	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P361923	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P362269	
		Sulfate	24		mg SO4/L	P362272	
	SM 2120 B	Color (true)	55		PCU	P361955	
	SM 2320 B-97	Total Alkalinity	204		mg CaCO3/L	P362174	RPD
	SM 2540 C-97	TDS	387		mg/L	P362517	
	SM 2540 D-97	TSS	6	I	mg/L	P362234	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P362180	
2076905	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P362290	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P362340	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P362416	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P362246	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P362107	
2076906	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P361931	
2076918	EPA 8321B	2,4-D	0.024		ug/L	P361794	
		Acesulfame K**	0.31	I	ug/L	P361901	MS
		AMPA**	1.1		ug/L	P361901	
		Sucralose**	1.9		ug/L	P361901	
		Acetaminophen**	0.0080	U	ug/L	P361794	
		Endothall**	0.25	U	ug/L	P361901	
		Glufosinate**	0.10	U	ug/L	P361901	
		Bentazon	0.0018	I	ug/L	P361794	
		Glyphosate**	1.0		ug/L	P361901	MS
		Carbamazepine**	0.013		ug/L	P361794	
		Diuron	0.0020	U	ug/L	P361794	
		Fenuron	0.016	U	ug/L	P361794	
		Fluridone**	0.39		ug/L	P361794	
		Imazapyr**	0.017		ug/L	P361794	
		Hydrocodone**	0.0020	U	ug/L	P361794	
		Ibuprofen**	0.020	U	ug/L	P361794	
		Imidacloprid	0.0037	I	ug/L	P361794	MS
		Linuron	0.0040	U	ug/L	P361794	
		MCPP	0.0020	U	ug/L	P361794	
		Naproxen**	0.0080	U	ug/L	P361794	
		Primidone**	0.0040	U	ug/L	P361794	
		Pyraclostrobin**	0.0020	U	ug/L	P361794	
		Triclopyr**	0.0040	U	ug/L	P361794	
2076919	EPA 200.7 Rev. 4.4	Barium	16.9		ug/L	P362012	
		Calcium	90.9		mg/L	P362012	
		Iron	620		ug/L	P362012	
		Magnesium	6.03		mg/L	P362012	
		Potassium	3.4		mg/L	P362012	
		Sodium	41.6		mg/L	P362012	

Field ID: G3SD0099 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076919	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P362012	
	EPA 200.8 Rev. 5.4	Aluminum	11	I	ug/L	P362012	
		Antimony	0.28		ug/L	P362012	
		Arsenic	2.11		ug/L	P362012	
		Boron**	57.9		ug/L	P362012	
		Cadmium	0.020	U	ug/L	P362012	
		Chromium	0.52	I	ug/L	P362012	
		Copper	0.40	U	ug/L	P362012	
		Lead	0.20	U	ug/L	P362012	
		Nickel	0.74	I	ug/L	P362012	
		Selenium	0.20	U	ug/L	P362012	
		Silver	0.010	U	ug/L	P362012	
		Thallium	0.10	U	ug/L	P362012	

Sample Location: Robert's Canal @SR80 **Collection Date/Time: 04/09/2019 10:40**

Field ID: G3SD0146 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076923	EPA 180.1 Rev. 2.0	Turbidity	9.2	A	NTU	P361923	
	EPA 300.0 Rev. 2.1	Chloride	45		mg Cl/L	P362269	
		Sulfate	24		mg SO4/L	P362272	
	SM 2120 B	Color (true)	62		PCU	P361955	
	SM 2320 B-97	Total Alkalinity	165		mg CaCO3/L	P362174	RPD
	SM 2540 C-97	TDS	319		mg/L	P362517	
	SM 2540 D-97	TSS	12		mg/L	P362234	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P362180	
2076924	EPA 350.1 Rev. 2.0	Ammonia-N	0.076		mg N/L	P362292	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P362340	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.062		mg N/L	P362416	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P362246	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P362107	
2076925	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P361932	
2076928	EPA 8321B	2,4-D	0.013		ug/L	P361794	
		Acesulfame K**	0.21	I	ug/L	P361901	MS
		AMPA**	0.61		ug/L	P361901	
		Sucralose**	0.073		ug/L	P361901	
		Acetaminophen**	0.0080	U	ug/L	P361794	
		Endothall**	0.25	U	ug/L	P361901	
		Glufosinate**	0.10	U	ug/L	P361901	
		Bentazon	0.014		ug/L	P361794	
		Glyphosate**	1.2		ug/L	P361901	MS
		Carbamazepine**	8.0E-04	U	ug/L	P361794	
		Diuron	0.0048	I	ug/L	P361794	
		Fenuron	0.016	U	ug/L	P361794	
		Fluridone**	0.0083		ug/L	P361794	
		Imazapyr**	0.12		ug/L	P361794	
		Hydrocodone**	0.0020	U	ug/L	P361794	
		Ibuprofen**	0.020	U	ug/L	P361794	
		Imidacloprid	0.0048	I	ug/L	P361794	MS
		Linuron	0.0040	U	ug/L	P361794	
		MCPP	0.0020	U	ug/L	P361794	
		Naproxen**	0.0080	U	ug/L	P361794	
		Primidone**	0.0040	U	ug/L	P361794	
		Pyraclostrobin**	0.0020	U	ug/L	P361794	
		Triclopyr**	0.0040	U	ug/L	P361794	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361923

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362290

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362402

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362415

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361931

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

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

Reference Method: EPA 8321B
Batch ID: P361794

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P361794

Component	Result	Code	Units
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: P361901

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: P361955

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P361958

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362174

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

Reference Method: SM 2540 C-97
Batch ID: P362517

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P362234

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362180

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362106

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

Reference Method: SM 5310 B-00
Batch ID: P362107

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	98.9		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	92.3		P	85 - 115
Antimony	94.7		P	85 - 115
Arsenic	96.8		P	85 - 115
Boron	92.1		P	85 - 115
Cadmium	97.0		P	85 - 115
Chromium	88.5		P	85 - 115
Copper	102		P	85 - 115
Lead	99.0		P	85 - 115
Nickel	101		P	85 - 115
Selenium	101		P	85 - 115
Silver	110		P	85 - 115
Thallium	96.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362290

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362402

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: P362340

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

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: P361931

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

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

Reference Method: EPA 8321B
Batch ID: P361794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	72.6		P	40 - 150
Acetaminophen	82.7		P	30 - 150
Bentazon	86.7		P	30 - 150
Carbamazepine	81.0		P	40 - 150
Diuron	69.9		P	40 - 150
Fenuron	96.3		P	40 - 150
Fluridone	99.0		P	40 - 150
Hydrocodone	79.3		P	40 - 150
Ibuprofen	99.9		P	40 - 150
Imazapyr	84.3		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P361794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	87.5		P	40 - 150
Linuron	74.6		P	40 - 150
MCPP	86.7		P	40 - 150
Naproxen	61.3		P	40 - 150
Primidone	72.0		P	40 - 150
Pyraclostrobin	61.2		P	40 - 150
Triclopyr	51.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	117		P	40 - 150
AMPA	96.9		P	40 - 150
Endothall	113		P	40 - 150
Glufosinate	116		P	40 - 150
Glyphosate	83.8		P	40 - 140
Sucralose	108		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P361955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P361958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P362174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.7		P	85 - 115

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P362107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077023	Barium	101		P	80 - 120
2077023	Calcium	101		P	80 - 120
2077023	Iron	102		P	80 - 120
2077023	Magnesium	102		P	80 - 120
2077023	Potassium	99.3		P	80 - 120
2077023	Sodium	100		P	80 - 120
2077023	Zinc	101		P	80 - 120
2077340	Barium	105	106	P/P	80 - 120
2077340	Calcium	103	104	P/P	80 - 120
2077340	Iron	112	106	P/P	80 - 120
2077340	Magnesium	106	106	P/P	80 - 120
2077340	Potassium	108	107	P/P	80 - 120
2077340	Sodium	105	103	P/P	80 - 120
2077340	Zinc	103	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077023	Aluminum	91.3		P	80 - 120
2077023	Antimony	95.3		P	80 - 120
2077023	Arsenic	97.1		P	80 - 120
2077023	Boron	92.7		P	80 - 120
2077023	Cadmium	96.8		P	80 - 120
2077023	Chromium	88.7		P	80 - 120
2077023	Copper	102		P	80 - 120
2077023	Lead	101		P	80 - 120
2077023	Nickel	98.1		P	80 - 120
2077023	Selenium	101		P	80 - 120
2077023	Silver	110		P	80 - 120
2077023	Thallium	96.3		P	80 - 120
2077340	Aluminum	94.8	96.8	P/P	80 - 120
2077340	Antimony	94.3	97.7	P/P	80 - 120
2077340	Arsenic	97.6	101	P/P	80 - 120
2077340	Boron	97.2	98.1	P/P	80 - 120
2077340	Cadmium	97.1	99.7	P/P	80 - 120
2077340	Chromium	90.4	93.0	P/P	80 - 120
2077340	Copper	107	110	P/P	80 - 120
2077340	Lead	101	108	P/P	80 - 120
2077340	Nickel	104	107	P/P	80 - 120
2077340	Selenium	99.4	103	P/P	80 - 120
2077340	Silver	111	111	P/P	80 - 120
2077340	Thallium	95.2	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076818	Chloride	107		P	90 - 110
2077011	Chloride	106		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076818	Sulfate	107		P	90 - 110
2077011	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076905	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076991	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076828	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076931	Kjeldahl Nitrogen	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076819	NO2NO3-N	95.4	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076924	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076991	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361931

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076823	O-Phosphate-P	97.4	97.5	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076992	O-Phosphate-P	97.4	99.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P361794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076485	2,4-D	66.0	72.2	P/P	40 - 150
2076485	Acetaminophen	77.8	82.4	P/P	30 - 150
2076485	Bentazon	91.4	122	P/P	30 - 150
2076485	Carbamazepine	78.0	87.7	P/P	40 - 150
2076485	Diuron	60.8	68.5	P/P	40 - 150
2076485	Fenuron	104	104	P/P	40 - 150
2076485	Fluridone	134	110	P/P	40 - 150
2076485	Hydrocodone	91.3	92.9	P/P	40 - 150
2076485	Ibuprofen	70.6	61.8	P/P	40 - 150
2076485	Imazapyr	74.4	72.7	P/P	40 - 150
2076485	Imidacloprid	136	162	P/F	40 - 150
2076485	Linuron	74.2	58.7	P/P	40 - 150
2076485	MCPP	92.8	105	P/P	40 - 150
2076485	Naproxen	57.9	69.1	P/P	40 - 150
2076485	Primidone	71.7	63.1	P/P	40 - 150
2076485	Pyraclostrobin	76.2	98.0	P/P	40 - 150
2076485	Triclopyr	46.6	55.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076373	Acesulfame K	178	234	F/F	40 - 150
2076373	AMPA	94.3	95.6	P/P	40 - 150
2076373	Endothall	76.1	77.6	P/P	40 - 150
2076373	Glufosinate	108	109	P/P	40 - 150
2076373	Glyphosate	145	151	F/F	40 - 140
2076373	Sucralose	95.1	97.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P362180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076647	Fluoride	103	102	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362106

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076755	Organic Carbon	102	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P362107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076905	Organic Carbon	99.3	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076923	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077340	Barium	1.08	Spike	P	0 - 20
2077340	Calcium	0.416	Spike	P	0 - 20
2077340	Iron	6.20	Spike	P	0 - 20
2077340	Magnesium	0.596	Spike	P	0 - 20
2077340	Potassium	0.575	Spike	P	0 - 20
2077340	Sodium	1.08	Spike	P	0 - 20
2077340	Zinc	1.69	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077340	Aluminum	1.97	Spike	P	0 - 20
2077340	Antimony	3.57	Spike	P	0 - 20
2077340	Arsenic	3.11	Spike	P	0 - 20
2077340	Boron	0.784	Spike	P	0 - 20
2077340	Cadmium	2.60	Spike	P	0 - 20
2077340	Chromium	2.86	Spike	P	0 - 20
2077340	Copper	2.83	Spike	P	0 - 20
2077340	Lead	6.48	Spike	P	0 - 20
2077340	Nickel	3.36	Spike	P	0 - 20
2077340	Selenium	3.56	Spike	P	0 - 20
2077340	Silver	0.282	Spike	P	0 - 20
2077340	Thallium	6.24	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076818	Chloride	0.626	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076818	Sulfate	0.398	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076905	Ammonia-N	2.82	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076991	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076828	Ammonia-N	0.660	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076931	Kjeldahl Nitrogen	0.574	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076819	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076924	NO2NO3-N	0.382	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076991	Total-P	0.211	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361931

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076823	O-Phosphate-P	0.0910	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076992	O-Phosphate-P	2.43	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P361794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076485	2,4-D	8.99	Spike	P	0 - 30
2076485	Acetaminophen	5.73	Spike	P	0 - 30
2076485	Bentazon	8.92	Spike	P	0 - 30
2076485	Carbamazepine	11.0	Spike	P	0 - 30
2076485	Diuron	11.9	Spike	P	0 - 30
2076485	Fenuron	0.624	Spike	P	0 - 30
2076485	Fluridone	9.07	Spike	P	0 - 30
2076485	Hydrocodone	1.75	Spike	P	0 - 30
2076485	Ibuprofen	13.2	Spike	P	0 - 30
2076485	Imazapyr	1.83	Spike	P	0 - 30
2076485	Imidacloprid	16.2	Spike	P	0 - 30
2076485	Linuron	23.3	Spike	P	0 - 30
2076485	MCPP	12.3	Spike	P	0 - 30
2076485	Naproxen	17.6	Spike	P	0 - 30
2076485	Primidone	12.8	Spike	P	0 - 30
2076485	Pyraclostrobin	25.1	Spike	P	0 - 30
2076485	Triclopyr	18.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P361901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076373	Acesulfame K	27.0	Spike	P	0 - 30
2076373	AMPA	1.15	Spike	P	0 - 30
2076373	Endothall	2.04	Spike	P	0 - 30
2076373	Glufosinate	1.29	Spike	P	0 - 30
2076373	Glyphosate	4.32	Spike	P	0 - 30
2076373	Sucralose	2.34	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P361955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076979	Color (true)	1.48	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076901	Color (true)	2.33	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P362174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076647	Total Alkalinity	10.1	Sample	F	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076901	TDS	2.71	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P362234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076901	TSS	5.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076647	Fluoride	0.509	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076755	Organic Carbon	0.197	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P362107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076905	Organic Carbon	1.37	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: 2076917
Field Sample ID: G3SD0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.1	P	30 - 160
EPA 8321B	Diuron-d6	77.3	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	156	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	156	P	30 - 160
EPA 8321B	Ibuprofen-d3	129	P	30 - 160
EPA 8321B	Primidone-d5	87.1	P	30 - 160
EPA 8321B	Sucralose-d6	90.4	P	30 - 160
EPA 8321B	Sucralose-d6	90.4	P	30 - 160

Lab Sample ID: 2076918
Field Sample ID: G3SD0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.4	P	30 - 160
EPA 8321B	Diuron-d6	70.9	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	139	P	30 - 160
EPA 8321B	Primidone-d5	67.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.9	P	30 - 160
EPA 8321B	Sucralose-d6	95.9	P	30 - 160

Lab Sample ID: 2076928
Field Sample ID: G3SD0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.6	P	30 - 160
EPA 8321B	Diuron-d6	76.7	P	30 - 160
EPA 8321B	Endothall-d6	88.1	P	30 - 160
EPA 8321B	Endothall-d6	88.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Ibuprofen-d3	103	P	30 - 160
EPA 8321B	Primidone-d5	72.6	P	30 - 160
EPA 8321B	Sucralose-d6	94.4	P	30 - 160
EPA 8321B	Sucralose-d6	94.4	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90588
Included Lab Sample IDs: 2076901, 2076904, 2076923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90589
Included Lab Sample IDs: 2076903, 2076906, 2076925

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.9	P/P	90 - 110
O-Phosphate-P	99.6	98.7	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A90600
Included Lab Sample IDs: 2076901, 2076904, 2076923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115
Color (true)	104	103	P/P	85 - 115

Reference Method: EPA 8321B
Run ID: A90662
Included Lab Sample IDs: 2076917, 2076918, 2076928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	119	117	P/P	60 - 160
Endothall	126	133	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A90675
Included Lab Sample IDs: 2076917, 2076918, 2076928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	110	P/P	60 - 160
AMPA	111	104	P/P	60 - 160
Glufosinate	116	112	P/P	60 - 160
Glufosinate	120	118	P/P	60 - 160
Glyphosate	109	127	P/P	60 - 160
Glyphosate	122	113	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90680
Included Lab Sample IDs: 2076919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	103	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	97.8	98.5	P/P	90 - 110
Sodium	99.1	100	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A90701
Included Lab Sample IDs: 2076902, 2076905, 2076924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	101	P/P	90 - 110
Organic Carbon	101	98.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A90703
Included Lab Sample IDs: 2076901, 2076904, 2076923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110
Total Alkalinity	97.7	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A90703
Included Lab Sample IDs: 2076901, 2076904, 2076923

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

Reference Method: EPA 8321B
Run ID: A90706
Included Lab Sample IDs: 2076917, 2076918, 2076928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	91.4	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90760
Included Lab Sample IDs: 2076901, 2076904, 2076923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	104	P/P	90 - 110
Chloride	104	101	P/P	90 - 110
Sulfate	105	105	P/P	90 - 110
Sulfate	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90764
Included Lab Sample IDs: 2076905, 2076924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	101	P/P	90 - 110
Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90796
Included Lab Sample IDs: 2076902, 2076905, 2076924

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90813
Included Lab Sample IDs: 2076902

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90815
Included Lab Sample IDs: 2076902, 2076905, 2076924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90817
Included Lab Sample IDs: 2076902, 2076905, 2076924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	94.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2076917, 2076918, 2076928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.6	86.2	P/P	50 - 150
Acetaminophen	112	113	P/P	60 - 160
Bentazon	98.7	114	P/P	50 - 160
Carbamazepine	86.3	105	P/P	60 - 150
Diuron	102	93.4	P/P	60 - 150
Fenuron	98.0	102	P/P	60 - 150
Fluridone	96.1	97.6	P/P	60 - 160
Fluridone	98.6	87.5	P/P	60 - 160
Hydrocodone	82.0	94.5	P/P	60 - 150
Ibuprofen	152	154	P/P	50 - 160
Imazapyr	103	70.8	P/P	50 - 150
Imidacloprid	94.0	101	P/P	60 - 150
Linuron	102	95.4	P/P	60 - 150
MCPP	94.4	93.9	P/P	50 - 150
Naproxen	88.0	69.2	P/P	50 - 160
Primidone	84.3	75.3	P/P	60 - 150
Pyraclostrobin	101	95.0	P/P	60 - 150
Triclopyr	100	85.6	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90862
Included Lab Sample IDs: 2076919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.2	96.2	P/P	90 - 110
Antimony	94.8	94.6	P/P	90 - 110
Arsenic	97.2	96.3	P/P	90 - 110
Boron	90.0	100	P/P	90 - 110
Cadmium	96.2	96.8	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90862
Included Lab Sample IDs: 2076919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	93.1	94.9	P/P	90 - 110
Lead	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90943
Included Lab Sample IDs: 2076919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	95.0	94.4	P/P	90 - 110
Nickel	95.5	94.0	P/P	90 - 110
Selenium	95.4	94.0	P/P	90 - 110
Silver	103	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91043
Included Lab Sample IDs: 2076919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	94.0	91.7	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						1.19	
EPA 200.7 Rev. 4.4	Barium	102	101	105	106			1.08
	Calcium	103	101	103	104			0.416
	Iron	103	102	112	106			6.20
	Magnesium	104	102	106	106			0.596
	Potassium	98.8	99.3	108	107			0.575
	Sodium	98.9	100	105	103			1.08
	Zinc	102	101	103	105			1.69
EPA 200.8 Rev. 5.4	Aluminum	92.3	91.3	94.8	96.8			1.97
	Antimony	94.7	95.3	94.3	97.7			3.57
	Arsenic	96.8	97.1	97.6	101			3.11
	Boron	92.1	92.7	97.2	98.1			0.784
	Cadmium	97.0	96.8	97.1	99.7			2.60
	Chromium	88.5	88.7	90.4	93.0			2.86
	Copper	102	102	107	110			2.83
	Lead	99.0	101	101	108			6.48
	Nickel	101	98.1	104	107			3.36
	Selenium	101	101	99.4	103			3.56
	Silver	110	110	111	111			0.282
	Thallium	96.8	96.3	95.2	101			6.24
EPA 300.0 Rev. 2.1	Chloride	106	107	106			0.626	
	Sulfate	108	107	107			0.398	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.2	101				2.82
	Ammonia-N	100	100	102				1.66
	Ammonia-N	102	100	101				0.660
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	102	103				0.574
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	95.4	95.4				0.0
	NO2NO3-N	99.5	99.5	100				0.382
EPA 365.1 Rev. 2.0	Total-P	101	102	103				0.211
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	97.4	97.5				0.0910
	O-Phosphate-P	102	97.4	99.8				2.43
EPA 8321B	2,4-D	72.6	66.0	72.2				8.99
	Acesulfame K	117	178	234				27.0
	Acetaminophen	82.7	77.8	82.4				5.73
	AMPA	96.9	94.3	95.6				1.15
	Bentazon	86.7	91.4	122				8.92
	Carbamazepine	81.0	78.0	87.7				11.0
	Diuron	69.9	60.8	68.5				11.9
	Endothall	113	76.1	77.6				2.04
	Fenuron	96.3	104	104				0.624
	Fluridone	99.0	134	110				9.07
	Glufosinate	116	108	109				1.29
	Glyphosate	83.8	145	151				4.32
	Hydrocodone	79.3	91.3	92.9				1.75
	Ibuprofen	99.9	70.6	61.8				13.2
	Imazapyr	84.3	74.4	72.7				1.83
	Imidacloprid	87.5	136	162				16.2
	Linuron	74.6	74.2	58.7				23.3
	MCPP	86.7	92.8	105				12.3
	Naproxen	61.3	57.9	69.1				17.6
	Primidone	72.0	71.7	63.1				12.8
	Pyraclostrobin	61.2	76.2	98.0				25.1
	Sucralose	108	95.1	97.4				2.34
	Triclopyr	51.1	46.6	55.9				18.1

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
SM 2120 B	Color (true)	104				1.48	
	Color (true)	103				2.33	
SM 2320 B-97	Total Alkalinity	101				10.1	
SM 2540 C-97	TDS					2.71	
SM 2540 D-97	TSS					5.71	
SM 4500 F-C-97	Fluoride	102	103	102			0.509
SM 5310 B-00	Organic Carbon	99.7	102	102			0.197
	Organic Carbon	99.6	99.3	102			1.37

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2076901, 2076904, 2076923
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2076919
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2076919
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2076901, 2076904, 2076923
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2076901, 2076904, 2076923
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2076902, 2076905, 2076924
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2076902, 2076905, 2076924
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2076902, 2076905, 2076924
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2076902, 2076905, 2076924
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2076903, 2076906, 2076925
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2076917, 2076918, 2076928
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2076917, 2076918, 2076928
SM 2120 B / E31780	True Color measured at 450 nm	2076901, 2076904, 2076923
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2076901, 2076904, 2076923
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2076901, 2076904, 2076923
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2076901, 2076904, 2076923
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2076901, 2076904, 2076923
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2076902, 2076905, 2076924

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	04/10/2019			04/10/2019 17:05	Adrian Shelby	2076901, 2076904, 2076923
EPA 200.7 Rev. 4.4	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/12/2019 13:30	Betina Topolski	2076919
EPA 200.8 Rev. 5.4	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/20/2019 01:39	Robert K Palmer	2076919
	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/23/2019 16:38	Robert K Palmer	2076919
	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/26/2019 15:58	Robert K Palmer	2076919
EPA 300.0 Rev. 2.1	04/10/2019			04/16/2019 09:06	Julia Storbeck	2076901
	04/10/2019			04/16/2019 09:42	Julia Storbeck	2076904
	04/10/2019			04/16/2019 09:54	Julia Storbeck	2076923
EPA 350.1 Rev. 2.0	04/10/2019			04/16/2019 12:36	Ping Hua	2076905
	04/10/2019			04/16/2019 13:56	Ping Hua	2076924
	04/10/2019			04/17/2019 11:34	Ping Hua	2076902
EPA 351.2 Rev. 2.0	04/10/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 12:25	Joseph Suarez	2076902
	04/10/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 12:27	Joseph Suarez	2076905
	04/10/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 12:28	Joseph Suarez	2076924
EPA 353.2 Rev. 2.0	04/10/2019			04/18/2019 10:14	Beverly Y. Sanders	2076902
	04/10/2019			04/18/2019 10:22	Beverly Y. Sanders	2076924
	04/10/2019			04/18/2019 10:27	Beverly Y. Sanders	2076905
EPA 365.1 Rev. 2.0	04/10/2019	04/16/2019 13:55	Sima Feizi	04/17/2019 15:10	Rosalyn Ballman	2076902
	04/10/2019	04/16/2019 13:55	Sima Feizi	04/17/2019 15:11	Rosalyn Ballman	2076905
	04/10/2019	04/16/2019 13:55	Sima Feizi	04/17/2019 15:12	Rosalyn Ballman	2076924
EPA 365.1 Rev. 2.0 dissolved	04/10/2019			04/10/2019 17:43	Jhamieka S. Greenwood	2076903
	04/10/2019			04/10/2019 17:44	Jhamieka S. Greenwood	2076906
	04/10/2019			04/10/2019 17:57	Jhamieka S. Greenwood	2076925
EPA 8321B	04/10/2019	04/10/2019 14:00	Hoor Shaik	04/19/2019 23:59	Juyoung Kim	2076917
	04/10/2019	04/10/2019 14:00	Hoor Shaik	04/20/2019 00:34	Juyoung Kim	2076918
	04/10/2019	04/10/2019 14:00	Hoor Shaik	04/20/2019 01:08	Juyoung Kim	2076928
	04/10/2019	04/10/2019 14:00	Hoor Shaik	04/22/2019 12:02	Juyoung Kim	2076918
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 11:14	Rebecca Ware	2076918
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 11:22	Rebecca Ware	2076928
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 19:33	Rebecca Ware	2076917
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 19:46	Rebecca Ware	2076918
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 20:00	Rebecca Ware	2076928
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 14:35	Rebecca Ware	2076917
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 19:30	Rebecca Ware	2076917
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 19:44	Rebecca Ware	2076918
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 19:58	Rebecca Ware	2076928
SM 2120 B	04/10/2019			04/10/2019 16:03	Mariam Hanna	2076904
	04/10/2019			04/10/2019 16:04	Mariam Hanna	2076923
	04/10/2019			04/10/2019 16:38	Mariam Hanna	2076901
SM 2320 B-97	04/10/2019			04/13/2019 20:50	Dale L. Simmons	2076901

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	04/10/2019			04/13/2019 21:37	Dale L. Simmons	2076904
	04/10/2019			04/13/2019 21:55	Dale L. Simmons	2076923
SM 2540 C-97	04/10/2019			04/11/2019 16:14	Yijie Li	2076901, 2076904, 2076923
SM 2540 D-97	04/10/2019			04/11/2019 16:14	Yijie Li	2076901, 2076904, 2076923
SM 4500 F-C-97	04/10/2019			04/13/2019 20:50	Dale L. Simmons	2076901
	04/10/2019			04/13/2019 21:37	Dale L. Simmons	2076904
	04/10/2019			04/13/2019 21:55	Dale L. Simmons	2076923
SM 5310 B-00	04/10/2019			04/13/2019 04:25	Julia Storbeck	2076902
	04/10/2019			04/13/2019 05:05	Julia Storbeck	2076905
	04/10/2019			04/13/2019 06:21	Julia Storbeck	2076924