Chemical Analysis Report

NW-DIST-2020-02-04-01

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

Event Description: **Dune Lakes**
Request ID: **RQ-2020-02-03-63**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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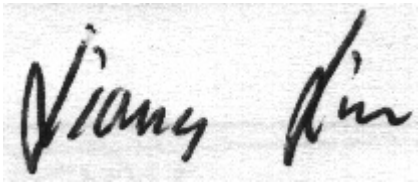
Certified by: Liang Lin, Environmental Administrator

Date Certified: 27-FEB-2020 11:37



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: ALLEN LAKE INPUT **Collection Date/Time: 02/03/2020 10:55**

Field ID: G3NW0177 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2153710	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P378224	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P378376	
		Sulfate	4.6		mg SO4/L	P378377	
	SM 2120 B-2011	Color (true)	110		PCU	P378336	
	SM 2320 B-2011	Total Alkalinity	4.9		mg CaCO3/L	P378546	
	SM 2540 C-2011	TDS	68		mg/L	P379334	
	SM 2540 D-2011	TSS	3	I	mg/L	P378615	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P378549	
2153711	EPA 350.1 Rev. 2.0	Ammonia-N	0.092		mg N/L	P378888	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P378489	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P378482	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P379048	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P378521	
2153712	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P378259	
2153719	EPA 8321B	2,4-D	0.0020	U	ug/L	P378093	
		Acesulfame K**	0.10	U	ug/L	P378368	MS
		AMPA**	0.10	U	ug/L	P378368	
		Sucralose**	0.010	U	ug/L	P378368	MS
		Acetaminophen**	0.0080	U	ug/L	P378093	
		Acetamiprid**	0.0020	U	ug/L	P378093	
		Endothall**	0.25	U	ug/L	P378368	
		Glufosinate**	0.10	U	ug/L	P378368	MS
		Glyphosate**	0.10	U	ug/L	P378368	MS
		Afidopyropen**	0.0020	UJ	ug/L	P378093	
		Bentazon	8.0E-04	U	ug/L	P378093	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378093	
		Carbamazepine**	8.0E-04	U	ug/L	P378093	
		Clothianidin**	0.0020	U	ug/L	P378093	
		Dinotefuran**	0.0020	U	ug/L	P378093	
		Diuron	0.0020	U	ug/L	P378093	
		Fenuron	0.016	U	ug/L	P378093	
		Fluridone**	8.0E-04	U	ug/L	P378093	
		Imazapyr**	0.0040	U	ug/L	P378093	
		Hydrocodone**	0.0020	U	ug/L	P378093	
		Ibuprofen**	0.020	U	ug/L	P378093	
		Imidacloprid	0.080		ug/L	P378093	
		Linuron	0.0040	U	ug/L	P378093	
		Mandestrobin**	0.0020	UJ	ug/L	P378093	
		MCPP	0.0020	U	ug/L	P378093	
		Naproxen**	0.0080	U	ug/L	P378093	
		Primidone**	0.0040	U	ug/L	P378093	
		Pyraclostrobin**	0.0020	U	ug/L	P378093	
		Thiamethoxam**	0.0020	U	ug/L	P378093	

Field ID: G3NW0177 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2153719	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P378093	
		Triclopyr**	0.0040	U	ug/L	P378093	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: OYSTER LAKE EAST **Collection Date/Time: 02/03/2020 11:30**

Field ID: G3NW0441 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2153707	EPA 180.1 Rev. 2.0	Turbidity	5.7	A	NTU	P378313	
	EPA 300.0 Rev. 2.1	Bromide	24		mg Br/L	P378843	
	SM 2320 B-2011	Total Alkalinity	71		mg CaCO3/L	P378548	
	SM 2540 D-2011	TSS	5	I	mg/L	P378329	
	SM 4500 F-C-2011	Fluoride	0.46	I	mg F/L	P378551	
2153708	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P378570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P378492	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P378649	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P379119	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P378523	
2153709	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P378261	
2153718	EPA 8321B	2,4-D	0.0020	I	ug/L	P378093	
		Acesulfame K**	1.0	U	ug/L	P378368	MS
		AMPA**	0.10	UJ	ug/L	P378368	SUR
		Sucralose**	0.010	UJ	ug/L	P378368	MS, SUR
		Acetaminophen**	0.0080	U	ug/L	P378093	
		Acetamiprid**	0.0020	U	ug/L	P378093	
		Endothall**	2.5	U	ug/L	P378368	
		Glufosinate**	0.10	UJ	ug/L	P378368	MS, SUR
		Glyphosate**	0.10	UJ	ug/L	P378368	MS, SUR
		Afidopyropen**	0.0020	UJ	ug/L	P378093	
		Bentazon	0.0098		ug/L	P378093	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378093	
		Carbamazepine**	8.0E-04	U	ug/L	P378093	
		Clothianidin**	0.0020	U	ug/L	P378093	
		Dinotefuran**	0.0020	U	ug/L	P378093	
		Diuron	0.0020	U	ug/L	P378093	
		Fenuron	0.016	U	ug/L	P378093	
		Fluridone**	0.0012	I	ug/L	P378093	
		Imazapyr**	0.035		ug/L	P378093	
		Hydrocodone**	0.0020	U	ug/L	P378093	
		Ibuprofen**	0.020	U	ug/L	P378093	
		Imidacloprid	0.026		ug/L	P378093	
		Linuron	0.0040	U	ug/L	P378093	
		Mandestrobin**	0.0020	UJ	ug/L	P378093	
		MCPP	0.030		ug/L	P378093	
		Naproxen**	0.0080	U	ug/L	P378093	
		Primidone**	0.0040	U	ug/L	P378093	
		Pyraclostrobin**	0.0020	U	ug/L	P378093	
		Thiamethoxam**	0.0020	U	ug/L	P378093	
		Tolfenpyrad**	0.0020	U	ug/L	P378093	
		Triclopyr**	0.0040	U	ug/L	P378093	

Field ID: G3NW0441 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.
EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Eastern Lake off of Center Avenue **Collection Date/Time: 02/03/2020 12:45**

Field ID: G3NW0124 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2153725	EPA 8321B	2,4-D	0.0020	U	ug/L	P378093	
		Acesulfame K**	0.10	UJ	ug/L	P378368	MS, SUR
		AMPA**	0.10	UJ	ug/L	P378368	SUR
		Sucralose**	0.010	UJ	ug/L	P378368	MS, SUR
		Acetaminophen**	0.0080	U	ug/L	P378093	
		Acetamiprid**	0.0020	U	ug/L	P378093	
		Endothall**	0.25	UJ	ug/L	P378368	SUR
		Glufosinate**	0.10	UJ	ug/L	P378368	MS, SUR
		Glyphosate**	0.10	UJ	ug/L	P378368	MS, SUR
		Afidopyropen**	0.0020	UJ	ug/L	P378093	
		Bentazon	9.4E-04	I	ug/L	P378093	MS
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378093	
		Carbamazepine**	8.0E-04	U	ug/L	P378093	
		Clothianidin**	0.0020	U	ug/L	P378093	
		Dinotefuran**	0.0020	U	ug/L	P378093	
		Diuron	0.0020	U	ug/L	P378093	
		Fenuron	0.016	U	ug/L	P378093	
		Fluridone**	8.0E-04	U	ug/L	P378093	
		Imazapyr**	0.0064	I	ug/L	P378093	
		Hydrocodone**	0.0020	U	ug/L	P378093	
		Ibuprofen**	0.020	U	ug/L	P378093	
		Imidacloprid	0.0094		ug/L	P378093	
		Linuron	0.0040	U	ug/L	P378093	
		Mandestrobin**	0.0020	UJ	ug/L	P378093	
		MCPP	0.0020	U	ug/L	P378093	
		Naproxen**	0.0080	U	ug/L	P378093	
		Primidone**	0.0040	U	ug/L	P378093	
		Pyraclostrobin**	0.0020	U	ug/L	P378093	
		Thiamethoxam**	0.0020	U	ug/L	P378093	
		Tolfenpyrad**	0.0020	U	ug/L	P378093	
		Triclopyr**	0.0040	U	ug/L	P378093	

Ref. Method and Comment:
EPA 8321B: J - second source check standards for some analytes were not available for analysis.
EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378224

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378313

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378376

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378377

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378843

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378888

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378489

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378492

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378482

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378649

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378259

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378261

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

Reference Method: EPA 8321B
Batch ID: P378093

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P378093

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P378368

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-2011
Batch ID: P378336

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378546

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

Reference Method: SM 2320 B-2011
Batch ID: P378548

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

Reference Method: SM 2540 C-2011
Batch ID: P379334

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P378329

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P378615

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378549

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378521

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

Reference Method: SM 5310 B-2011
Batch ID: P378523

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: P378376

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378377

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378843

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378888

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378489

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378492

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378482

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: P378649

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378259

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378261

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

Reference Method: EPA 8321B
Batch ID: P378093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	136		P	30 - 160
Acetaminophen	77.7		P	30 - 160
Acetamiprid	71.3		P	30 - 160
Afidopyropen	72.0		P	30 - 160
Bentazon	70.9		P	30 - 160
Benzovindiflupyr	79.9		P	30 - 160
Carbamazepine	91.0		P	30 - 160
Clothianidin	77.3		P	30 - 160
Dinotefuran	82.8		P	30 - 160
Diuron	90.2		P	30 - 160
Fenuron	103		P	30 - 160
Fluridone	81.9		P	30 - 160
Hydrocodone	85.3		P	30 - 160
Ibuprofen	93.6		P	30 - 160
Imazapyr	83.3		P	30 - 160
Imidacloprid	87.1		P	30 - 160
Linuron	72.7		P	30 - 160
Mandestrobin	85.3		P	30 - 160
MCPP	137		P	30 - 160
Naproxen	82.8		P	30 - 160
Primidone	81.3		P	30 - 160
Pyraclostrobin	82.4		P	30 - 160
Thiamethoxam	85.5		P	30 - 160
Tolfenpyrad	53.8		P	30 - 160
Triclopyr	104		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378368

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	129		P	40 - 150
AMPA	105		P	40 - 150
Endothall	92.4		P	40 - 150
Glufosinate	124		P	40 - 150
Glyphosate	129		P	40 - 140
Sucralose	96.5		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P378336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.9		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P378546

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

Reference Method: SM 2320 B-2011
Batch ID: P378548

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

Reference Method: SM 4500 F-C-2011
Batch ID: P378549

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P378521

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

Reference Method: SM 5310 B-2011
Batch ID: P378523

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153710	Chloride	98.7		P	90 - 110
2154056	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153710	Sulfate	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151911	Bromide	98.7	98.1	P/P	90 - 110
2152919	Bromide	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153110	Ammonia-N	107	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153728	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153558	Kjeldahl Nitrogen	97.3	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153947	Kjeldahl Nitrogen	96.4	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153726	NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153679	NO2NO3-N	105	106	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153039	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153700	Total-P	96.2	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154155	O-Phosphate-P	95.2	91.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154333	O-Phosphate-P	93.0	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P378093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153067	2,4-D	97.7	99.4	P/P	30 - 160
2153067	Acetaminophen	68.7	58.8	P/P	30 - 160
2153067	Acetamiprid	79.2	74.6	P/P	30 - 160
2153067	Afidopyropen	67.4	69.6	P/P	30 - 160
2153067	Bentazon	11.3	13.7	F/F	30 - 160
2153067	Benzovindiflupyr	73.0	66.6	P/P	30 - 160
2153067	Carbamazepine	73.1	60.5	P/P	30 - 160
2153067	Clothianidin	70.1	69.3	P/P	30 - 160
2153067	Dinotefuran	92.4	83.1	P/P	30 - 160
2153067	Diuron	63.0	65.2	P/P	30 - 160
2153067	Fenuron	82.9	71.8	P/P	30 - 160
2153067	Fluridone	71.8	66.4	P/P	30 - 160
2153067	Hydrocodone	89.0	83.3	P/P	30 - 160
2153067	Ibuprofen	81.2	75.6	P/P	30 - 160
2153067	Imazapyr	69.6	68.7	P/P	30 - 160
2153067	Imidacloprid	144	130	P/P	30 - 160
2153067	Linuron	59.9	52.2	P/P	30 - 160
2153067	Mandestrobin	84.3	77.2	P/P	30 - 160
2153067	MCPP	126	110	P/P	30 - 160
2153067	Naproxen	92.2	98.1	P/P	30 - 160
2153067	Primidone	66.2	65.1	P/P	30 - 160
2153067	Pyraclostrobin	71.3	66.7	P/P	30 - 160
2153067	Thiamethoxam	110	104	P/P	30 - 160
2153067	Tolfenpyrad	51.2	48.0	P/P	30 - 160
2153067	Triclopyr	94.6	81.0	P/P	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153795	Acesulfame K	36.7	39.0	F/F	40 - 150
2153795	AMPA	95.7	95.4	P/P	40 - 150
2153795	Endothall	118	126	P/P	40 - 150
2153795	Glufosinate	139	156	P/F	40 - 150
2153795	Glyphosate	185	200	F/F	40 - 140
2153795	Sucralose	33.3	34.0	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P378549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154054	Fluoride	96.3	97.0	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151636	Fluoride	96.4	97.8	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P378521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154059	Organic Carbon	103	104	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P378523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2154124	Organic Carbon	99.8	99.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153757	Turbidity	2.24	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153707	Turbidity	1.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154056	Chloride	0.00253	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151911	Bromide	0.320	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153110	Ammonia-N	0.299	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153728	Ammonia-N	1.56	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153558	Kjeldahl Nitrogen	2.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153947	Kjeldahl Nitrogen	3.06	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153726	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153679	NO2NO3-N	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153039	Total-P	0.764	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153700	Total-P	0.590	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154155	O-Phosphate-P	3.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154333	O-Phosphate-P	4.31	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P378093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153067	2,4-D	1.77	Spike	P	0 - 30
2153067	Acetaminophen	15.6	Spike	P	0 - 30
2153067	Acetamiprid	5.98	Spike	P	0 - 30
2153067	Afidopyropen	3.30	Spike	P	0 - 30
2153067	Bentazon	2.32	Spike	P	0 - 30
2153067	Benzovindiflupyr	9.07	Spike	P	0 - 30
2153067	Carbamazepine	10.1	Spike	P	0 - 30
2153067	Clothianidin	1.09	Spike	P	0 - 30
2153067	Dinotefuran	10.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P378093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153067	Diuron	3.48	Spike	P	0 - 30
2153067	Fenuron	14.4	Spike	P	0 - 30
2153067	Fluridone	7.41	Spike	P	0 - 30
2153067	Hydrocodone	6.58	Spike	P	0 - 30
2153067	Ibuprofen	7.15	Spike	P	0 - 30
2153067	Imazapyr	1.20	Spike	P	0 - 30
2153067	Imidacloprid	10.8	Spike	P	0 - 30
2153067	Linuron	13.8	Spike	P	0 - 30
2153067	Mandestrobin	8.84	Spike	P	0 - 30
2153067	MCPP	13.9	Spike	P	0 - 30
2153067	Naproxen	6.18	Spike	P	0 - 30
2153067	Primidone	1.50	Spike	P	0 - 30
2153067	Pyraclostrobin	6.60	Spike	P	0 - 30
2153067	Thiamethoxam	5.31	Spike	P	0 - 30
2153067	Tolfenpyrad	6.44	Spike	P	0 - 30
2153067	Triclopyr	15.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P378368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153795	Acesulfame K	6.10	Spike	P	0 - 30
2153795	AMPA	0.234	Spike	P	0 - 30
2153795	Endothall	6.34	Spike	P	0 - 30
2153795	Glufosinate	11.1	Spike	P	0 - 30
2153795	Glyphosate	6.59	Spike	P	0 - 30
2153795	Sucralose	2.22	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P378336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153757	Color (true)	2.14	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P378546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154054	Total Alkalinity	0.0221	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
Batch ID: P378548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152601	Total Alkalinity	0.00688	Sample	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-2011
Batch ID: P379334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153756	TDS	0.414	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P378549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154054	Fluoride	0.470	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
Batch ID: P378551

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151636	Fluoride	0.940	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P378521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154059	Organic Carbon	0.668	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P378523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2154124	Organic Carbon	0.0447	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Surrogates

Lab Sample ID: 2153718
Field Sample ID: G3NW0441

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.0	P	30 - 160
EPA 8321B	Diuron-d6	64.8	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Endothall-d6	150	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	95.8	P	30 - 160
EPA 8321B	Primidone-d5	78.7	P	30 - 160
EPA 8321B	Sucralose-d6	6.26	F	30 - 160
EPA 8321B	Sucralose-d6	6.26	F	30 - 160

Lab Sample ID: 2153719
Field Sample ID: G3NW0177

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.5	P	30 - 160
EPA 8321B	Diuron-d6	61.1	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	101	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.5	P	30 - 160
EPA 8321B	Primidone-d5	70.7	P	30 - 160
EPA 8321B	Sucralose-d6	56.7	P	30 - 160
EPA 8321B	Sucralose-d6	56.7	P	30 - 160

Lab Sample ID: 2153725
Field Sample ID: G3NW0124

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.3	P	30 - 160
EPA 8321B	Diuron-d6	67.6	P	30 - 160
EPA 8321B	Endothall-d6	279	F	30 - 160
EPA 8321B	Endothall-d6	279	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	7.90	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	7.90	F	30 - 160
EPA 8321B	Ibuprofen-d3	95.5	P	30 - 160
EPA 8321B	Primidone-d5	77.4	P	30 - 160
EPA 8321B	Sucralose-d6	4.65	F	30 - 160
EPA 8321B	Sucralose-d6	4.65	F	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A97299
Included Lab Sample IDs: 2153710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A97311
Included Lab Sample IDs: 2153709, 2153712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.0	96.9	P/P	90 - 110
O-Phosphate-P	98.3	99.1	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A97313
Included Lab Sample IDs: 2153718, 2153719, 2153725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.3	102	P/P	50 - 150
Acetaminophen	73.6	66.6	P/P	60 - 160
Acetamiprid	87.6	80.2	P/P	50 - 150
Afidopyropen	90.4	92.7	P/P	50 - 150
Bentazon	112	94.9	P/P	50 - 160
Benzovindiflupyr	98.8	91.0	P/P	50 - 150
Carbamazepine	99.3	91.0	P/P	60 - 150
Clothianidin	76.3	70.4	P/P	60 - 150
Dinotefuran	78.5	71.1	P/P	50 - 150
Diuron	94.5	111	P/P	60 - 150
Fenuron	101	99.1	P/P	60 - 150
Fluridone	94.9	94.3	P/P	60 - 160
Hydrocodone	91.0	87.4	P/P	60 - 150
Ibuprofen	90.9	95.2	P/P	50 - 160
Imazapyr	102	82.3	P/P	50 - 150
Imidacloprid	84.7	79.3	P/P	60 - 150
Linuron	94.3	92.4	P/P	60 - 150
Mandestrobin	107	104	P/P	50 - 150
MCPP	105	103	P/P	50 - 150
Naproxen	102	111	P/P	50 - 160
Primidone	72.4	72.0	P/P	60 - 150
Pyraclostrobin	102	102	P/P	60 - 150
Thiamethoxam	86.0	75.6	P/P	50 - 150
Tolfenpyrad	94.9	92.7	P/P	60 - 150
Triclopyr	89.3	102	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A97327
Included Lab Sample IDs: 2153710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	98.6	P/P	90 - 110
Sulfate	99.5	98.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A97328
Included Lab Sample IDs: 2153707

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

Reference Method: SM 2120 B-2011
Run ID: A97334
Included Lab Sample IDs: 2153710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	99.9	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A97369
Included Lab Sample IDs: 2153711

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

Reference Method: SM 5310 B-2011
Run ID: A97392
Included Lab Sample IDs: 2153708, 2153711

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

Reference Method: SM 2320 B-2011
Run ID: A97403
Included Lab Sample IDs: 2153707, 2153710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	102	P/P	90 - 110
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A97403
Included Lab Sample IDs: 2153707, 2153710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.1	P/P	90 - 110
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A97409
Included Lab Sample IDs: 2153708

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A97430
Included Lab Sample IDs: 2153708

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A97436
Included Lab Sample IDs: 2153708, 2153711

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	98.1	P/P	90 - 110
Kjeldahl Nitrogen	99.1	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A97473
Included Lab Sample IDs: 2153718, 2153719, 2153725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	130	62.3	P/P	60 - 160
Acesulfame K	141	107	P/P	60 - 160
Endothall	91.3	95.3	P/P	60 - 160
Endothall	95.7	99.2	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A97477
Included Lab Sample IDs: 2153718, 2153719, 2153725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	121	90.5	P/P	60 - 160
Glufosinate	129	109	P/P	60 - 160
Glyphosate	128	138	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A97501
Included Lab Sample IDs: 2153707

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.5	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A97525
Included Lab Sample IDs: 2153711

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97643
Included Lab Sample IDs: 2153711

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A97686
Included Lab Sample IDs: 2153708

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

Reference Method: EPA 8321B
Run ID: A97796
Included Lab Sample IDs: 2153718, 2153719, 2153725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	92.6	P/P	60 - 160
Sucralose	92.6	97.9	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					2.24	
	Turbidity					1.24	
EPA 300.0 Rev. 2.1	Bromide	102	98.7	98.1	97.4		0.320
	Chloride	98.9	95.4	98.7		0.0025	
	Sulfate	99.5	98.7				
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	107	107			0.299
	Ammonia-N	97.5	100	102			1.56
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	97.3	104			2.97
	Kjeldahl Nitrogen	102	96.4	100			3.06
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	97.0	97.0			0.0
	NO2NO3-N	101	105	106			0.948
EPA 365.1 Rev. 2.0	Total-P	107	106	107			0.764
	Total-P	104	96.2	95.6			0.590
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.2	91.0			3.87
	O-Phosphate-P	98.3	93.0	97.1			4.31
EPA 8321B	2,4-D	136	97.7	99.4			1.77
	Acesulfame K	129	36.7	39.0			6.10
	Acetaminophen	77.7	58.8	68.7			15.6
	Acetamiprid	71.3	79.2	74.6			5.98
	Afidopyropen	72.0	67.4	69.6			3.30
	AMPA	105	95.7	95.4			0.234
	Bentazon	70.9	13.7	11.3			2.32
	Benzovindiflupyr	79.9	73.0	66.6			9.07
	Carbamazepine	91.0	73.1	60.5			10.1
	Clothianidin	77.3	70.1	69.3			1.09
	Dinotefuran	82.8	92.4	83.1			10.6
	Diuron	90.2	63.0	65.2			3.48
	Endothall	92.4	118	126			6.34
	Fenuron	103	82.9	71.8			14.4
	Fluridone	81.9	66.4	71.8			7.41
	Glufosinate	124	139	156			11.1
	Glyphosate	129	185	200			6.59
	Hydrocodone	85.3	83.3	89.0			6.58
	Ibuprofen	93.6	81.2	75.6			7.15
	Imazapyr	83.3	69.6	68.7			1.20
	Imidacloprid	87.1	144	130			10.8
	Linuron	72.7	59.9	52.2			13.8
	Mandestrobin	85.3	84.3	77.2			8.84
	MCPP	137	110	126			13.9
	Naproxen	82.8	98.1	92.2			6.18
	Primidone	81.3	66.2	65.1			1.50
	Pyraclostrobin	82.4	71.3	66.7			6.60
	Sucralose	96.5	33.3	34.0			2.22
	Thiamethoxam	85.5	110	104			5.31
	Tolfenpyrad	53.8	48.0	51.2			6.44
	Triclopyr	104	94.6	81.0			15.5
SM 2120 B-2011	Color (true)	98.9				2.14	
SM 2320 B-2011	Total Alkalinity	102				0.0221	
	Total Alkalinity	102				0.0068	
SM 2540 C-2011	TDS					0.414	
SM 4500 F-C-2011	Fluoride	96.2	96.3	97.0			0.470
	Fluoride	99.0	96.4	97.8			0.940
SM 5310 B-2011	Organic Carbon	102	103	104			0.668
	Organic Carbon	98.6	99.8	99.8			0.0447

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2153707, 2153710
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2153707
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2153710
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2153710
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2153708, 2153711
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2153708, 2153711
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2153708, 2153711
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2153708, 2153711
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2153709, 2153712
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2153718, 2153719, 2153725
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2153718, 2153719, 2153725
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2153710
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2153707, 2153710
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2153710
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2153707, 2153710
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2153707, 2153710
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2153708, 2153711

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	02/04/2020			02/04/2020 14:36	Samantha Davila	2153710
	02/04/2020			02/04/2020 17:21	Yen Ta	2153707
EPA 300.0 Rev. 2.1	02/04/2020			02/05/2020 12:20	Elliott Rodriguez	2153710
	02/04/2020			02/12/2020 04:09	Elliott Rodriguez	2153707
EPA 350.1 Rev. 2.0	02/04/2020			02/07/2020 14:01	Ping Hua	2153708
	02/04/2020			02/13/2020 13:47	Ping Hua	2153711
EPA 351.2 Rev. 2.0	02/04/2020	02/07/2020 11:00	Jhamieka S. Greenwood	02/10/2020 18:12	Jhamieka S. Greenwood	2153711
	02/04/2020	02/07/2020 11:00	Jhamieka S. Greenwood	02/10/2020 19:22	Jhamieka S. Greenwood	2153708
EPA 353.2 Rev. 2.0	02/04/2020			02/06/2020 12:31	Beverly Y. Sanders	2153711
	02/04/2020			02/11/2020 09:24	Beverly Y. Sanders	2153708
EPA 365.1 Rev. 2.0	02/04/2020	02/17/2020 17:00	Yen Ta	02/18/2020 17:32	Benjamin T. Nordmann	2153711
	02/04/2020	02/18/2020 13:46	Yen Ta	02/20/2020 13:40	Benjamin T. Nordmann	2153708
EPA 365.1 Rev. 2.0 dissolved	02/04/2020			02/04/2020 17:11	Carlos Miranda	2153709
	02/04/2020			02/04/2020 17:55	Carlos Miranda	2153712
EPA 8321B	02/04/2020	02/04/2020 14:00	Hoor Shaik	02/05/2020 09:36	Juyoung Kim	2153718
	02/04/2020	02/04/2020 14:00	Hoor Shaik	02/05/2020 10:11	Juyoung Kim	2153719
	02/04/2020	02/04/2020 14:00	Hoor Shaik	02/05/2020 10:45	Juyoung Kim	2153725
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 12:48	Rebecca Ware	2153718
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 12:59	Rebecca Ware	2153719
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 13:09	Rebecca Ware	2153725
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 17:56	Rebecca Ware	2153719
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/07/2020 18:10	Rebecca Ware	2153725
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/08/2020 14:50	Rebecca Ware	2153718
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/21/2020 16:31	Rebecca Ware	2153718
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/21/2020 16:59	Rebecca Ware	2153719
	02/04/2020	02/06/2020 11:00	Rebecca Ware	02/21/2020 17:13	Rebecca Ware	2153725
SM 2120 B-2011	02/04/2020			02/04/2020 16:07	Madeline Funaro	2153710
SM 2320 B-2011	02/04/2020			02/06/2020 20:26	Dale L. Simmons	2153710
	02/04/2020			02/07/2020 07:12	Dale L. Simmons	2153707
SM 2540 C-2011	02/04/2020			02/06/2020 15:50	Sima Feizi	2153710
SM 2540 D-2011	02/04/2020			02/04/2020 17:00	Blanca Fach	2153707
	02/04/2020			02/06/2020 15:50	Sima Feizi	2153710
SM 4500 F-C-2011	02/04/2020			02/06/2020 20:26	Dale L. Simmons	2153710
	02/04/2020			02/07/2020 04:02	Dale L. Simmons	2153707
SM 5310 B-2011	02/04/2020			02/06/2020 21:06	Madeline Funaro	2153711
	02/04/2020			02/07/2020 07:48	Madeline Funaro	2153708