

Chemical Analysis Report

CEN-DIST-2019-03-15-02

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

Event Description: **Crane Crk / Eau X2**
Request ID: **RQ-2019-03-11-43**
Customer: **CEN-DIST**
Project ID: **SMP**

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Date Certified: 04-APR-2019 14:56



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: Crane Creek @ 200m upstream of RR bridge

Collection Date/Time: 03/14/2019 11:13

Field ID: G5CE0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070525	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P360518	
	EPA 300.0	Bromide	6.8		mg Br/L	P361107	
	SM 2320 B-97	Total Alkalinity	182		mg CaCO3/L	P360802	
	SM 2540 D-97	TSS	3	I	mg/L	P361030	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P360986	
2070526	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P360669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P360908	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P360992	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P360898	
2070527	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P360530	
2070562	EPA 8321B	Acesulfame K**	0.16	I	ug/L	P360421	
		2,4-D	0.020		ug/L	P360490	
		AMPA**	0.10	UJ	ug/L	P360421	SUR
		Endothall**	0.25	U	ug/L	P360421	
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Glufosinate**	0.10	UJ	ug/L	P360421	SUR
		Bentazon	0.043		ug/L	P360490	
		Glyphosate**	0.10	UJ	ug/L	P360421	SUR
		Carbamazepine**	0.0015	I	ug/L	P360490	
		Sucralose**	0.010	UJ	ug/L	P360421	MS, SUR
		Diuron	0.0062	I	ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	0.011		ug/L	P360490	
		Imazapyr**	0.055		ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.0071	I	ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCPP	0.0041	I	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in re-extraction.

Sample Location: Crane Creek @ 200m upstream of RR bridge

Collection Date/Time: 03/14/2019 11:15

Field ID: G5CE0097_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070528	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P360518	
	EPA 300.0	Bromide	7.3		mg Br/L	P361107	
	SM 2320 B-97	Total Alkalinity	183		mg CaCO3/L	P361241	
	SM 2540 D-97	TSS	4	I	mg/L	P361030	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P361245	
2070529	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P361065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P360908	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P360851	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P360898	
2070530	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.074		mg P/L	P360530	
2070563	EPA 8321B	2,4-D	0.020		ug/L	P360490	
		Acesulfame K**	0.24	I	ug/L	P360627	MS
		AMPA**	0.10	UJ	ug/L	P360627	SUR
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Endothall**	0.25	U	ug/L	P360627	MS
		Glufosinate**	0.10	UJ	ug/L	P360627	SUR
		Bentazon	0.047		ug/L	P360490	
		Glyphosate**	0.10	UJ	ug/L	P360627	SUR
		Carbamazepine**	0.0017	I	ug/L	P360490	
		Sucralose**	0.010	UJ	ug/L	P360627	SUR
		Diuron	0.0063	I	ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	0.014		ug/L	P360490	
		Imazapyr**	0.055		ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.0070	I	ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCPP	0.0040	I	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in re-extraction.

Sample Location: Field Blank

Collection Date/Time: 03/14/2019 11:30

Field ID: FB_03142019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070531	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P360518	
	EPA 300.0	Bromide	0.013	U	mg Br/L	P361107	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361099	
	SM 2540 D-97	TSS	2	U	mg/L	P361030	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P360993	
2070532	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P361065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P360875	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P360783	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P360842	MS
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P360898	
2070533	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P360531	
2070564	EPA 8321B	2,4-D	0.0020	U	ug/L	P360490	
		Acesulfame K**	0.10	U	ug/L	P360627	MS
		AMPA**	0.10	U	ug/L	P360627	
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Endothall**	0.25	U	ug/L	P360627	MS
		Glufosinate**	0.10	U	ug/L	P360627	
		Bentazon	8.0E-04	U	ug/L	P360490	
		Glyphosate**	0.10	U	ug/L	P360627	
		Carbamazepine**	8.0E-04	U	ug/L	P360490	
		Sucralose**	0.010	U	ug/L	P360627	
		Diuron	0.0020	U	ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	8.0E-04	U	ug/L	P360490	
		Imazapyr**	0.0040	U	ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.0020	U	ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCPP	0.0020	U	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360518

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P361107

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360908

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360842

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360985

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360992

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360530

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360531

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

Reference Method: EPA 8321B
 Batch ID: P360421

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: EPA 8321B
 Batch ID: P360490

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P360627

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 2320 B-97
Batch ID: P360802

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

Reference Method: SM 2320 B-97
Batch ID: P361099

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

Reference Method: SM 2320 B-97
Batch ID: P361241

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

Reference Method: SM 2540 D-97
Batch ID: P361030

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360986

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P360898

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P361107

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360908

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360992

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360531

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

Reference Method: EPA 8321B
Batch ID: P360421

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.5		P	40 - 150
AMPA	89.7		P	40 - 150
Endothall	85.7		P	40 - 150
Glufosinate	91.4		P	40 - 150
Glyphosate	79.4		P	40 - 140
Sucralose	54.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.9		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	129		P	30 - 150
Carbamazepine	111		P	40 - 150
Diuron	120		P	40 - 150
Fenuron	127		P	40 - 150
Fluridone	127		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	76.0		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	103		P	40 - 150
MCPP	82.2		P	40 - 150
Naproxen	87.3		P	40 - 150
Primidone	119		P	40 - 150
Pyraclostrobin	82.3		P	40 - 150
Triclopyr	53.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	98.7		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	57.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P360802

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P361099

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P361241

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

Reference Method: SM 4500 F-C-97
Batch ID: P360986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360898

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P361107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071359	Bromide	99.6	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069780	Ammonia-N	104	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	94.8	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071005	Kjeldahl Nitrogen	92.9	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070484	NO2NO3-N	97.3	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070380	NO2NO3-N	98.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070484	Total-P	85.8	99.7	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070529	Total-P	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070656	Total-P	97.0	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070660	O-Phosphate-P	94.2	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070488	O-Phosphate-P	93.3	93.4	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P360421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069913	Acesulfame K	103	129	P/P	40 - 150
2069913	AMPA	78.4	83.1	P/P	40 - 150
2069913	Endothall	84.4	94.8	P/P	40 - 150
2069913	Glufosinate	68.3	58.8	P/P	40 - 150
2069913	Glyphosate	74.3	70.7	P/P	40 - 140
2069913	Sucralose	12.2	11.8	F/F	40 - 150

Reference Method: EPA 8321B
 Batch ID: P360490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069849	2,4-D	94.4	96.9	P/P	40 - 150
2069849	Acetaminophen	103	90.8	P/P	30 - 150
2069849	Bentazon	78.8	75.9	P/P	30 - 150
2069849	Carbamazepine	102	92.4	P/P	40 - 150
2069849	Diuron	92.1	86.4	P/P	40 - 150
2069849	Fenuron	127	128	P/P	40 - 150
2069849	Fluridone	135	107	P/P	40 - 150
2069849	Hydrocodone	94.9	95.5	P/P	40 - 150
2069849	Ibuprofen	78.9	64.6	P/P	40 - 150
2069849	Imazapyr	65.2	55.8	P/P	40 - 150
2069849	Imidacloprid	183	169	F/F	40 - 150
2069849	Linuron	87.4	86.8	P/P	40 - 150
2069849	MCCP	124	110	P/P	40 - 150
2069849	Naproxen	75.2	85.0	P/P	40 - 150
2069849	Primidone	114	102	P/P	40 - 150
2069849	Pyraclostrobin	79.7	67.5	P/P	40 - 150
2069849	Triclopyr	85.9	70.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P360627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070585	Acesulfame K	191	196	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070585	AMPA	92.5	90.7	P/P	40 - 150
2070585	Endothall	147	150	P/F	40 - 150
2070585	Glufosinate	65.9	65.0	P/P	40 - 150
2070585	Glyphosate	84.2	86.3	P/P	40 - 140
2070585	Sucralose	63.3	58.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070482	Fluoride	96.6	96.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P361245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071243	Fluoride	98.9	96.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070485	Organic Carbon	96.4	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070568	Turbidity	3.17	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P361107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071359	Bromide	0.614	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069780	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Ammonia-N	0.565	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	6.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071005	Kjeldahl Nitrogen	4.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070484	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070380	NO2NO3-N	1.83	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070484	Total-P	14.5	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070529	Total-P	0.206	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070656	Total-P	0.585	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070660	O-Phosphate-P	3.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070488	O-Phosphate-P	0.107	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069913	Acesulfame K	22.4	Spike	P	0 - 30
2069913	AMPA	5.79	Spike	P	0 - 30
2069913	Endothall	11.7	Spike	P	0 - 30
2069913	Glufosinate	15.0	Spike	P	0 - 30
2069913	Glyphosate	4.87	Spike	P	0 - 30
2069913	Sucralose	2.41	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	2,4-D	2.59	Spike	P	0 - 30
2069849	Acetaminophen	12.8	Spike	P	0 - 30
2069849	Bentazon	3.26	Spike	P	0 - 30
2069849	Carbamazepine	9.88	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	Diuron	6.16	Spike	P	0 - 30
2069849	Fenuron	0.378	Spike	P	0 - 30
2069849	Fluridone	19.7	Spike	P	0 - 30
2069849	Hydrocodone	0.577	Spike	P	0 - 30
2069849	Ibuprofen	19.9	Spike	P	0 - 30
2069849	Imazapyr	10.1	Spike	P	0 - 30
2069849	Imidacloprid	6.91	Spike	P	0 - 30
2069849	Linuron	0.770	Spike	P	0 - 30
2069849	MCPP	11.7	Spike	P	0 - 30
2069849	Naproxen	12.1	Spike	P	0 - 30
2069849	Primidone	11.2	Spike	P	0 - 30
2069849	Pyraclostrobin	16.7	Spike	P	0 - 30
2069849	Triclopyr	19.6	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070585	Acesulfame K	2.22	Spike	P	0 - 30
2070585	AMPA	1.95	Spike	P	0 - 30
2070585	Endothall	2.28	Spike	P	0 - 30
2070585	Glufosinate	1.42	Spike	P	0 - 30
2070585	Glyphosate	2.48	Spike	P	0 - 30
2070585	Sucralose	7.04	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P360802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069779	Total Alkalinity	1.09	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P361099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070303	Total Alkalinity	0.287	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P361241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071243	Total Alkalinity	1.11	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
 Batch ID: P361030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071180	TSS	6.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P360986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070208	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
 Batch ID: P360993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070482	Fluoride	0.514	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
 Batch ID: P361245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071243	Fluoride	1.37	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P360898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070485	Organic Carbon	3.17	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: 2070562
Field Sample ID: G5CE0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	79.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.9	P	30 - 160
EPA 8321B	Diuron-d6	81.5	P	30 - 160
EPA 8321B	Endothall-d6	84.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	12.4	F	30 - 160
EPA 8321B	Ibuprofen-d3	59.3	P	30 - 160
EPA 8321B	Primidone-d5	65.5	P	30 - 160
EPA 8321B	Sucralose-d6	7.02	F	30 - 160

Lab Sample ID: 2070563
Field Sample ID: G5CE0097_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.4	P	30 - 160
EPA 8321B	Diuron-d6	73.7	P	30 - 160
EPA 8321B	Endothall-d6	88.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	15.6	F	30 - 160
EPA 8321B	Ibuprofen-d3	70.9	P	30 - 160
EPA 8321B	Primidone-d5	79.4	P	30 - 160
EPA 8321B	Sucralose-d6	7.81	F	30 - 160

Lab Sample ID: 2070564
Field Sample ID: FB_03142019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	52.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.0	P	30 - 160
EPA 8321B	Diuron-d6	83.4	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	48.5	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	61.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90044

Included Lab Sample IDs: 2070525, 2070528, 2070531

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90045

Included Lab Sample IDs: 2070527, 2070530, 2070533

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	97.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90093

Included Lab Sample IDs: 2070562

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	98.7	P/P	60 - 160
Glufosinate	95.8	86.9	P/P	60 - 160
Glyphosate	96.3	87.4	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90097

Included Lab Sample IDs: 2070526

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90128

Included Lab Sample IDs: 2070532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90132

Included Lab Sample IDs: 2070525

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.8	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90160

Included Lab Sample IDs: 2070526, 2070529

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

Reference Method: EPA 8321B

Run ID: A90161

Included Lab Sample IDs: 2070563, 2070564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90161

Included Lab Sample IDs: 2070563, 2070564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	118	95.1	P/P	60 - 160
Glufosinate	94.5	92.6	P/P	60 - 160
Glyphosate	87.2	80.1	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A90184

Included Lab Sample IDs: 2070526, 2070529, 2070532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.0	P/P	90 - 110
Organic Carbon	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90201

Included Lab Sample IDs: 2070532

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

Reference Method: EPA 8321B

Run ID: A90203

Included Lab Sample IDs: 2070562, 2070563, 2070564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	87.4	117	P/P	60 - 160
Acesulfame K	98.1	87.4	P/P	60 - 160
Endothall	105	112	P/P	60 - 160
Endothall	112	107	P/P	60 - 160
Sucralose	68.0	97.6	P/P	60 - 160
Sucralose	79.9	68.0	P/P	60 - 160

Reference Method: SM 4500 F-C-97

Run ID: A90218

Included Lab Sample IDs: 2070525, 2070531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110
Fluoride	99.1	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90221

Included Lab Sample IDs: 2070532

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90235

Included Lab Sample IDs: 2070526, 2070529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90235

Included Lab Sample IDs: 2070526, 2070529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90239

Included Lab Sample IDs: 2070529, 2070532

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

Reference Method: SM 2320 B-97

Run ID: A90248

Included Lab Sample IDs: 2070531

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90252

Included Lab Sample IDs: 2070525, 2070528, 2070531

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90256

Included Lab Sample IDs: 2070529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90258

Included Lab Sample IDs: 2070526

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	99.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2070562, 2070563, 2070564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	98.8	P/P	50 - 150
2,4-D	98.8	87.3	P/P	50 - 150
Acetaminophen	111	107	P/P	60 - 160
Acetaminophen	122	111	P/P	60 - 160
Bentazon	87.5	93.5	P/P	50 - 160
Bentazon	89.8	87.5	P/P	50 - 160
Carbamazepine	100	109	P/P	60 - 150
Carbamazepine	109	91.6	P/P	60 - 150
Diuron	108	97.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2070562, 2070563, 2070564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Diuron	114	108	P/P	60 - 150
Fenuron	110	109	P/P	60 - 150
Fenuron	113	110	P/P	60 - 150
Fluridone	104	70.8	P/P	60 - 160
Fluridone	66.0	104	P/P	60 - 160
Hydrocodone	115	101	P/P	60 - 150
Hydrocodone	121	115	P/P	60 - 150
Ibuprofen	109	96.3	P/P	50 - 160
Ibuprofen	92.7	109	P/P	50 - 160
Imazapyr	100	97.6	P/P	50 - 150
Imazapyr	97.6	79.7	P/P	50 - 150
Imidacloprid	105	113	P/P	60 - 150
Imidacloprid	113	102	P/P	60 - 150
Linuron	94.0	90.0	P/P	60 - 150
Linuron	99.7	94.0	P/P	60 - 150
MCPP	87.7	93.3	P/P	50 - 150
MCPP	91.5	87.7	P/P	50 - 150
Naproxen	106	89.5	P/P	50 - 160
Naproxen	89.5	106	P/P	50 - 160
Primidone	138	92.5	P/P	60 - 150
Primidone	92.5	113	P/P	60 - 150
Pyraclostrobin	118	111	P/P	60 - 150
Pyraclostrobin	82.5	118	P/P	60 - 150
Triclopyr	95.4	102	P/P	50 - 150
Triclopyr	96.1	95.4	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A90311

Included Lab Sample IDs: 2070528

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

Reference Method: SM 4500 F-C-97

Run ID: A90311

Included Lab Sample IDs: 2070528

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	105	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.17	
EPA 300.0	Bromide	105	99.6	98.8			0.614
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	104	101			1.96
	Ammonia-N	99.0	100	101			0.565
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	94.8	106			6.55
	Kjeldahl Nitrogen	99.8	92.9	97.6			4.56
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	97.3	98.8			1.43
	NO2NO3-N	102	98.4	101			1.83
EPA 365.1 Rev. 2.0	Total-P	97.2	85.8	99.7			14.5
	Total-P	98.5	101	101			0.206
	Total-P	99.2	97.0	97.6			0.585
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	94.2	98.0			3.02
	O-Phosphate-P	97.5	93.3	93.4			0.107
EPA 8321B	2,4-D	75.9	94.4	96.9			2.59
	Acesulfame K	87.5	103	129			22.4
	Acesulfame K	98.1	191	196			2.22
	Acetaminophen	111	103	90.8			12.8
	AMPA	89.7	78.4	83.1			5.79
	AMPA	98.7	92.5	90.7			1.95
	Bentazon	129	78.8	75.9			3.26
	Carbamazepine	111	102	92.4			9.88
	Diuron	120	92.1	86.4			6.16
	Endothall	85.7	84.4	94.8			11.7
	Endothall	112	147	150			2.28
	Fenuron	127	127	128			0.378
	Fluridone	127	135	107			19.7
	Glufosinate	91.4	68.3	58.8			15.0
	Glufosinate	104	65.9	65.0			1.42
	Glyphosate	79.4	74.3	70.7			4.87
	Glyphosate	108	84.2	86.3			2.48
	Hydrocodone	98.2	94.9	95.5			0.577
	Ibuprofen	76.0	78.9	64.6			19.9
	Imazapyr	99.5	65.2	55.8			10.1
	Imidacloprid	102	183	169			6.91
	Linuron	103	87.4	86.8			0.770
	MCPP	82.2	124	110			11.7
	Naproxen	87.3	75.2	85.0			12.1
	Primidone	119	114	102			11.2
	Pyraclostrobin	82.3	79.7	67.5			16.7
	Sucralose	54.7	12.2	11.8			2.41
	Sucralose	57.2	63.3	58.7			7.04
	Triclopyr	53.8	85.9	70.6			19.6
SM 2320 B-97	Total Alkalinity	103				1.09	
	Total Alkalinity	103				0.287	
	Total Alkalinity	102				1.11	
SM 2540 D-97	TSS					6.19	
SM 4500 F-C-97	Fluoride	97.3					0.0
	Fluoride	98.2	96.6	96.0			0.514
	Fluoride	100	98.9	96.8			1.37
SM 5310 B-00	Organic Carbon	100	96.4	100			3.17

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2070525, 2070528, 2070531
EPA 300.0 / E31780	Bromide in aqueous matrices	2070525, 2070528, 2070531
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2070526, 2070529, 2070532
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2070526, 2070529, 2070532
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2070526, 2070529, 2070532
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2070526, 2070529, 2070532
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2070527, 2070530, 2070533
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2070562, 2070563, 2070564
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2070525, 2070528, 2070531
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2070525, 2070528, 2070531
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2070525, 2070528, 2070531
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2070526, 2070529, 2070532

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	03/15/2019			03/15/2019 15:25	Adrian Shelby	2070525, 2070528, 2070531
EPA 300.0	03/15/2019			03/22/2019 21:17	Lipi Saha	2070525
	03/15/2019			03/22/2019 21:34	Lipi Saha	2070528
	03/15/2019			03/22/2019 21:51	Lipi Saha	2070531
EPA 350.1 Rev. 2.0	03/15/2019			03/19/2019 09:46	Ping Hua	2070526
	03/15/2019			03/26/2019 13:20	Julia Storbeck	2070529
	03/15/2019			03/26/2019 13:31	Julia Storbeck	2070532
EPA 351.2 Rev. 2.0	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:27	Joseph Suarez	2070532
	03/15/2019	03/22/2019 12:00	Adrian Shelby	03/26/2019 10:34	Joseph Suarez	2070526
	03/15/2019	03/22/2019 12:00	Adrian Shelby	03/26/2019 10:36	Joseph Suarez	2070529
EPA 353.2 Rev. 2.0	03/15/2019			03/20/2019 13:12	Lauren Lees	2070532
	03/15/2019			03/21/2019 13:10	Lauren Lees	2070526
	03/15/2019			03/21/2019 13:11	Lauren Lees	2070529
EPA 365.1 Rev. 2.0	03/15/2019	03/21/2019 12:46	Joseph Suarez	03/22/2019 17:00	Rosalyn Ballman	2070532
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:41	Beverly Y. Sanders	2070529
	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 15:09	Beverly Y. Sanders	2070526
EPA 365.1 Rev. 2.0 dissolved	03/15/2019			03/15/2019 15:40	Jhamieka S. Greenwood	2070533
	03/15/2019			03/15/2019 15:43	Jhamieka S. Greenwood	2070527, 2070530
EPA 8321B	03/15/2019	03/18/2019 12:00	Hoor Shaik	03/18/2019 21:23	Juyoung Kim	2070562
	03/15/2019	03/18/2019 12:00	Hoor Shaik	03/20/2019 23:18	Juyoung Kim	2070562
	03/15/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 12:18	Juyoung Kim	2070563
	03/15/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 12:53	Juyoung Kim	2070564
	03/15/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 15:57	Juyoung Kim	2070562
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 12:29	Juyoung Kim	2070563
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 12:40	Juyoung Kim	2070564
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 00:13	Juyoung Kim	2070563
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 00:27	Juyoung Kim	2070564
SM 2320 B-97	03/15/2019			03/20/2019 08:06	Dale L. Simmons	2070525
	03/15/2019			03/26/2019 20:07	Dale L. Simmons	2070531
	03/15/2019			03/28/2019 05:53	Dale L. Simmons	2070528
SM 2540 D-97	03/15/2019			03/20/2019 15:26	Yijie Li	2070525, 2070528, 2070531
SM 4500 F-C-97	03/15/2019			03/24/2019 21:28	Dale L. Simmons	2070525
	03/15/2019			03/25/2019 09:49	Dale L. Simmons	2070531
	03/15/2019			03/28/2019 05:53	Dale L. Simmons	2070528
SM 5310 B-00	03/15/2019			03/21/2019 20:21	Julia Storbeck	2070526
	03/15/2019			03/21/2019 20:33	Julia Storbeck	2070529
	03/15/2019			03/21/2019 21:09	Julia Storbeck	2070532