

Chemical Analysis Report

NE-DIST-2019-03-22-03

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

Event Description: **Nassau North**
Request ID: **RQ-2019-03-18-14**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 15-APR-2019 14:59

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: UNNAMED BRANCH ABOVE ALLIGATOR CR. Collection Date/Time: 03/21/2019 09:45

Field ID: G4NE0288

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072017	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P360922	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P361186	
		Sulfate	16		mg SO4/L	P361189	
		Color (true)	240		PCU	P360945	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	253		mg/L	P361411	
	SM 2540 D-97	TSS	2	I	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P361328	
2072019	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P361253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P361161	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P361048	
	EPA 365.1 Rev. 2.0	Total-P	0.35		mg P/L	P361195	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P361055	
2072021	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.25		mg P/L	P360927	
2072049	EPA 200.7 Rev. 4.4	Barium	35.1		ug/L	P361042	
		Calcium	33.7		mg/L	P361042	
		Iron	1.22E+03		ug/L	P361042	
		Magnesium	17.5		mg/L	P361042	
		Potassium	5.5		mg/L	P361042	
		Sodium	24.4		mg/L	P361042	
		Zinc	5.0	U	ug/L	P361042	
	EPA 200.8 Rev. 5.4	Aluminum	147		ug/L	P361042	
		Antimony	0.050	U	ug/L	P361042	
		Arsenic	0.89		ug/L	P361042	
		Boron**	24.2		ug/L	P361042	
		Cadmium	0.020	U	ug/L	P361042	
		Chromium	0.56	I	ug/L	P361042	
		Copper	0.56	I	ug/L	P361042	
		Lead	0.37	I	ug/L	P361042	
		Nickel	1.0	I	ug/L	P361042	
		Selenium	0.20	U	ug/L	P361042	
		Silver	0.010	U	ug/L	P361042	
		Thallium	0.10	U	ug/L	P361042	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: CREEK DRAINING FORMER HAMPTON LAKE 100M ABOVE RD **Collection Date/Time: 03/21/2019 10:40**

Field ID: G4NE0292

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072023	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P360922	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P361186	
		Sulfate	3.0		mg SO4/L	P361189	
	SM 2120 B	Color (true)	210		PCU	P360945	
	SM 2320 B-97	Total Alkalinity	5.7	AJ	mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	61		mg/L	P361411	
	SM 2540 D-97	TSS	2	I	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361328	
2072025	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P361253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P361161	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P361048	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P361195	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P361055	
2072027	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P360927	

Ref. Method and Comment:

SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: MILLS CREEK AT US 301/US 1

Collection Date/Time: 03/21/2019 11:15

Field ID: 19020048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072018	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P360922	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P361186	
		Sulfate	1.8		mg SO4/L	P361189	
		Color (true)	260		PCU	P360945	
	SM 2320 B-97	Total Alkalinity	4.7		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	89		mg/L	P361411	
	SM 2540 D-97	TSS	3	I	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P361328	
2072020	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P361253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P361161	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P361048	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P361195	
	SM 5310 B-00	Organic Carbon	24		mg C/L	P361055	
2072022	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P360927	
2072050	EPA 200.7 Rev. 4.4	Barium	18.0		ug/L	P361042	
		Calcium	4.80		mg/L	P361042	
		Iron	1.11E+03		ug/L	P361042	
		Magnesium	1.55		mg/L	P361042	
		Potassium	1.0	I	mg/L	P361042	
		Sodium	9.5		mg/L	P361042	
		Zinc	5.0	U	ug/L	P361042	
		Aluminum	414		ug/L	P361042	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P361042	
		Arsenic	0.39		ug/L	P361042	
		Boron**	19.6		ug/L	P361042	
		Cadmium	0.020	U	ug/L	P361042	
		Chromium	0.71	I	ug/L	P361042	
		Copper	0.40	U	ug/L	P361042	
		Lead	0.40		ug/L	P361042	
		Nickel	0.50	U	ug/L	P361042	
		Selenium	0.20	U	ug/L	P361042	
		Silver	0.010	U	ug/L	P361042	
		Thallium	0.10	U	ug/L	P361042	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LOFTON CR @ A1A

Collection Date/Time: 03/21/2019 12:10

Field ID: 19020003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072024	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P360922	
	EPA 300.0 Rev. 2.1	Chloride	35		mg Cl/L	P361186	
		Sulfate	7.2		mg SO4/L	P361189	
	SM 2120 B	Color (true)	320		PCU	P360945	
	SM 2320 B-97	Total Alkalinity	20		mg CaCO3/L	P361324	RPD
	SM 2540 C-97	TDS	148	A	mg/L	P361411	
	SM 2540 D-97	TSS	3	IA	mg/L	P361415	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P361328	
2072026	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P361253	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P361161	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P361048	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P361195	
	SM 5310 B-00	Organic Carbon	28		mg C/L	P361055	
2072028	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P360927	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: EGANS CREEK AT N. 14TH

Collection Date/Time: 03/21/2019 13:15

Field ID: G4NE0290

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072029	EPA 180.1 Rev. 2.0	Turbidity	27	A	NTU	P360923	
	EPA 300.0	Bromide	43		mg Br/L	P361847	
	SM 2320 B-97	Total Alkalinity	103		mg CaCO3/L	P361325	RPD
	SM 2540 D-97	TSS	83		mg/L	P361419	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P361720	
2072030	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P361177	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P361143	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P361201	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P361266	
	SM 5310 B-00	Organic Carbon	5.1		mg C/L	P361056	
2072031	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P360926	
2072048	EPA 8321B	2,4-D	0.0020	U	ug/L	P360773	
		Acesulfame K**	0.10	UJ	ug/L	P360937	SUR
		AMPA**	0.10	UJ	ug/L	P360937	SUR
		Sucralose**	0.19		ug/L	P360937	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	UJ	ug/L	P360937	SUR
		Glufosinate**	0.10	UJ	ug/L	P360937	SUR
		Bentazon	8.0E-04	U	ug/L	P360773	
		Glyphosate**	0.10	UJ	ug/L	P360937	SUR
		Carbamazepine**	8.0E-04	U	ug/L	P360773	
		Diuron	0.0020	U	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	8.0E-04	U	ug/L	P360773	
		Imazapyr**	0.012	I	ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.0020	U	ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0020	U	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	U	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360922

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360923

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

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: P361042

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
Batch ID: P361847

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361177

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361143

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361266

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 dissolved
 Batch ID: P360926

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360927

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

Reference Method: EPA 8321B
 Batch ID: P360773

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

Reference Method: EPA 8321B
 Batch ID: P360937

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: P360945

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
 Batch ID: P361324

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P361325

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P361411

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361415

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361419

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P361720

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361055

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

Reference Method: SM 5310 B-00
Batch ID: P361056

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: P361042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	107		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	106		P	85 - 115
Sodium	109		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	96.7		P	85 - 115
Arsenic	103		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	94.9		P	85 - 115
Copper	101		P	85 - 115
Lead	97.5		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Silver	102		P	85 - 115
Thallium	98.9		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P361847

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361177

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

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: P361143

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: P361161

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361201

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: P361195

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361266

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360926

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: P360927

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	87.3		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	148		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	122		P	40 - 150
Ibuprofen	63.6		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	134		P	40 - 150
Linuron	80.6		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	71.0		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	72.3		P	40 - 150
Triclopyr	62.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.4		P	40 - 150
AMPA	129		P	40 - 150
Endothall	63.2		P	40 - 150
Glufosinate	129		P	40 - 150
Glyphosate	134		P	40 - 140
Sucralose	97.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360945

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

Reference Method: SM 2320 B-97
Batch ID: P361324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P361325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361328

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P361720

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361055

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

Reference Method: SM 5310 B-00
Batch ID: P361056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071612	Barium	99.6		P	80 - 120
2071612	Calcium	103		P	80 - 120
2071612	Iron	106		P	80 - 120
2071612	Magnesium	103		P	80 - 120
2071612	Potassium	108		P	80 - 120
2071612	Sodium	110		P	80 - 120
2071612	Zinc	99.4		P	80 - 120
2071886	Barium	99.8	98.9	P/P	80 - 120
2071886	Calcium	99.6		P	80 - 120
2071886	Iron	106	104	P/P	80 - 120
2071886	Magnesium	101		P	80 - 120
2071886	Potassium	105	99.2	P/P	80 - 120
2071886	Sodium	108	99.2	P/P	80 - 120
2071886	Zinc	99.8	99.4	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071612	Aluminum	99.2		P	80 - 120
2071612	Antimony	98.2		P	80 - 120
2071612	Arsenic	101		P	80 - 120
2071612	Boron	105		P	80 - 120
2071612	Cadmium	104		P	80 - 120
2071612	Chromium	95.4		P	80 - 120
2071612	Copper	98.4		P	80 - 120
2071612	Lead	99.9		P	80 - 120
2071612	Nickel	99.5		P	80 - 120
2071612	Selenium	101		P	80 - 120
2071612	Silver	102		P	80 - 120
2071612	Thallium	103		P	80 - 120
2071886	Aluminum	98.7	98.9	P/P	80 - 120
2071886	Antimony	100	98.2	P/P	80 - 120
2071886	Arsenic	102	101	P/P	80 - 120
2071886	Boron	103	104	P/P	80 - 120
2071886	Cadmium	105	104	P/P	80 - 120
2071886	Chromium	95.3	96.4	P/P	80 - 120
2071886	Copper	98.0	97.7	P/P	80 - 120
2071886	Lead	101	98.9	P/P	80 - 120
2071886	Nickel	99.1	99.7	P/P	80 - 120
2071886	Selenium	99.8	100	P/P	80 - 120
2071886	Silver	103	103	P/P	80 - 120
2071886	Thallium	105	104	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P361847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2073272	Bromide	97.7	97.9	P/P	90 - 110
2074743	Bromide	99.9		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071869	Chloride	91.7		P	90 - 110
2072017	Chloride	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071869	Sulfate	92.5		P	90 - 110
2072017	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071011	Ammonia-N	104	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072025	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361143

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072128	Kjeldahl Nitrogen	97.0	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071938	Kjeldahl Nitrogen	100	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071902	NO2NO3-N	96.1	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072030	NO2NO3-N	98.6	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072019	Total-P	94.0	91.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071363	Total-P	90.4	91.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071929	O-Phosphate-P	96.6	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072181	O-Phosphate-P	96.4	96.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	2,4-D	68.7	89.6	P/P	40 - 150
2071546	Acetaminophen	137	128	P/P	30 - 150
2071546	Bentazon	100	94.2	P/P	30 - 150
2071546	Carbamazepine	114	103	P/P	40 - 150
2071546	Diuron	99.9	102	P/P	40 - 150
2071546	Fenuron	144	138	P/P	40 - 150
2071546	Fluridone	118	114	P/P	40 - 150
2071546	Hydrocodone	102	109	P/P	40 - 150
2071546	Ibuprofen	65.8	65.5	P/P	40 - 150
2071546	Imazapyr	113	98.6	P/P	40 - 150
2071546	Imidacloprid	184	174	F/F	40 - 150
2071546	Linuron	90.5	85.2	P/P	40 - 150
2071546	MCP	114	105	P/P	40 - 150
2071546	Naproxen	99.4	87.0	P/P	40 - 150
2071546	Primidone	122	94.3	P/P	40 - 150
2071546	Pyraclostrobin	107	108	P/P	40 - 150
2071546	Triclopyr	62.1	58.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071724	Acesulfame K	101	87.6	P/P	40 - 150
2071724	AMPA	105	111	P/P	40 - 150
2071724	Endothall	111	123	P/P	40 - 150
2071724	Glufosinate	132	122	P/P	40 - 150
2071724	Glyphosate	131	131	P/P	40 - 140
2071724	Sucralose	73.3	71.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072023	Fluoride	103	104	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P361720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071355	Fluoride	92.5	93.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071901	Organic Carbon	101	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072128	Organic Carbon	98.5	99.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071898	Turbidity	0.760	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072029	Turbidity	2.60	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071886	Barium	0.864	Spike	P	0 - 20
2071886	Calcium	4.30	Spike	P	0 - 20
2071886	Iron	1.92	Spike	P	0 - 20
2071886	Magnesium	1.78	Spike	P	0 - 20
2071886	Potassium	5.39	Spike	P	0 - 20
2071886	Sodium	4.42	Spike	P	0 - 20
2071886	Zinc	0.365	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071886	Aluminum	0.239	Spike	P	0 - 20
2071886	Antimony	1.96	Spike	P	0 - 20
2071886	Arsenic	1.03	Spike	P	0 - 20
2071886	Boron	0.832	Spike	P	0 - 20
2071886	Cadmium	1.27	Spike	P	0 - 20
2071886	Chromium	1.11	Spike	P	0 - 20
2071886	Copper	0.179	Spike	P	0 - 20
2071886	Lead	2.19	Spike	P	0 - 20
2071886	Nickel	0.597	Spike	P	0 - 20
2071886	Selenium	0.290	Spike	P	0 - 20
2071886	Silver	0.0344	Spike	P	0 - 20
2071886	Thallium	0.537	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P361847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2073272	Bromide	0.117	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071869	Chloride	15.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071869	Sulfate	15.4	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071011	Ammonia-N	1.35	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072025	Ammonia-N	0.0911	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072128	Kjeldahl Nitrogen	0.425	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071938	Kjeldahl Nitrogen	3.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071902	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072030	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072019	Total-P	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071363	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071929	O-Phosphate-P	0.896	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072181	O-Phosphate-P	0.494	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	2,4-D	26.4	Spike	P	0 - 30
2071546	Acetaminophen	6.76	Spike	P	0 - 30
2071546	Bentazon	5.99	Spike	P	0 - 30
2071546	Carbamazepine	10.1	Spike	P	0 - 30
2071546	Diuron	1.87	Spike	P	0 - 30
2071546	Fenuron	3.97	Spike	P	0 - 30
2071546	Fluridone	2.86	Spike	P	0 - 30
2071546	Hydrocodone	5.95	Spike	P	0 - 30
2071546	Ibuprofen	0.352	Spike	P	0 - 30
2071546	Imazapyr	13.9	Spike	P	0 - 30
2071546	Imidacloprid	5.26	Spike	P	0 - 30
2071546	Linuron	5.94	Spike	P	0 - 30
2071546	MCP	7.83	Spike	P	0 - 30
2071546	Naproxen	13.3	Spike	P	0 - 30
2071546	Primidone	25.9	Spike	P	0 - 30
2071546	Pyraclostrobin	0.860	Spike	P	0 - 30
2071546	Triclopyr	5.22	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071724	Acesulfame K	14.1	Spike	P	0 - 30
2071724	AMPA	4.88	Spike	P	0 - 30
2071724	Endothall	10.7	Spike	P	0 - 30
2071724	Glufosinate	8.01	Spike	P	0 - 30
2071724	Glyphosate	0.183	Spike	P	0 - 30
2071724	Sucralose	2.38	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P360945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072175	Color (true)	0.584	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Total Alkalinity	3.79	Sample	F	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P361325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072183	Total Alkalinity	8.26	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072024	TDS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P361328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072023	Fluoride	0.484	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P361720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071355	Fluoride	0.473	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P361055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071901	Organic Carbon	0.128	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P361056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072128	Organic Carbon	0.615	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: 2072048
Field Sample ID: G4NE0290

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.7	P	30 - 160
EPA 8321B	Diuron-d6	74.4	P	30 - 160
EPA 8321B	Endothall-d6	185	F	30 - 160
EPA 8321B	Endothall-d6	185	F	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	74.0	P	30 - 160
EPA 8321B	Primidone-d5	87.2	P	30 - 160
EPA 8321B	Sucralose-d6	136	P	30 - 160
EPA 8321B	Sucralose-d6	136	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90192

Included Lab Sample IDs: 2072017, 2072018, 2072023, 2072024, 2072029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90194

Included Lab Sample IDs: 2072021, 2072022, 2072027, 2072028, 2072031

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.6	P/P	90 - 110
O-Phosphate-P	99.6	98.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90211

Included Lab Sample IDs: 2072017, 2072018, 2072023, 2072024

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

Reference Method: EPA 8321B

Run ID: A90220

Included Lab Sample IDs: 2072048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	135	117	P/P	60 - 160
Glufosinate	134	122	P/P	60 - 160
Glyphosate	133	148	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90234

Included Lab Sample IDs: 2072019, 2072020, 2072025, 2072026

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

Reference Method: SM 5310 B-00

Run ID: A90237

Included Lab Sample IDs: 2072019, 2072020, 2072025, 2072026, 2072030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.8	P/P	90 - 110
Organic Carbon	97.8	97.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90259

Included Lab Sample IDs: 2072017, 2072018, 2072023, 2072024

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	105	P/P	90 - 110
Chloride	105	104	P/P	90 - 110
Sulfate	104	107	P/P	90 - 110
Sulfate	107	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A90265
Included Lab Sample IDs: 2072048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	60.9	60.2	P/P	60 - 160
Endothall	79.8	88.4	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A90274
Included Lab Sample IDs: 2072048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	92.9	P/P	50 - 150
Acetaminophen	92.7	123	P/P	60 - 160
Bentazon	91.8	80.6	P/P	50 - 160
Carbamazepine	91.9	110	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Fenuron	109	106	P/P	60 - 150
Fluridone	93.4	69.9	P/P	60 - 160
Hydrocodone	99.1	114	P/P	60 - 150
Ibuprofen	108	86.4	P/P	50 - 160
Imazapyr	83.8	85.8	P/P	50 - 150
Imidacloprid	106	95.3	P/P	60 - 150
Linuron	104	85.8	P/P	60 - 150
MCPP	96.6	92.9	P/P	50 - 150
Naproxen	125	84.5	P/P	50 - 160
Primidone	135	112	P/P	60 - 150
Pyraclostrobin	87.3	89.2	P/P	60 - 150
Triclopyr	101	98.2	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90282
Included Lab Sample IDs: 2072049, 2072050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.6	99.3	P/P	90 - 110
Calcium	102	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	99.9	99.6	P/P	90 - 110
Sodium	103	104	P/P	90 - 110
Zinc	100	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90288
Included Lab Sample IDs: 2072030

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90297
Included Lab Sample IDs: 2072030

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90297

Included Lab Sample IDs: 2072030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90298

Included Lab Sample IDs: 2072019, 2072020, 2072025, 2072026, 2072030

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	95.1	P/P	90 - 110
Kjeldahl Nitrogen	95.1	96.8	P/P	90 - 110
Kjeldahl Nitrogen	96.8	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90315

Included Lab Sample IDs: 2072019, 2072020, 2072025, 2072026

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90320

Included Lab Sample IDs: 2072019, 2072026

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90331

Included Lab Sample IDs: 2072020, 2072025

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90333

Included Lab Sample IDs: 2072049, 2072050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.4	99.5	P/P	90 - 110
Antimony	96.3	95.5	P/P	90 - 110
Boron	104	104	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Copper	99.7	99.0	P/P	90 - 110
Lead	99.8	98.5	P/P	90 - 110
Nickel	99.6	99.4	P/P	90 - 110
Selenium	98.4	98.5	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.7	93.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A90337

Included Lab Sample IDs: 2072017, 2072018, 2072023, 2072024, 2072029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.4	98.9	P/P	90 - 110
Total Alkalinity	98.9	99.7	P/P	90 - 110
Total Alkalinity	99.4	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90337

Included Lab Sample IDs: 2072017, 2072018, 2072023, 2072024

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90347

Included Lab Sample IDs: 2072030

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90422

Included Lab Sample IDs: 2072049, 2072050

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.4	97.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90433

Included Lab Sample IDs: 2072048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.7	86.9	P/P	60 - 160

Reference Method: SM 4500 F-C-97

Run ID: A90507

Included Lab Sample IDs: 2072029

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

Reference Method: EPA 300.0

Run ID: A90561

Included Lab Sample IDs: 2072029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	99.3	99.0	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.760	
	Turbidity					2.60	
EPA 200.7 Rev. 4.4	Barium	102	99.6	99.8	98.9		0.864
	Calcium	103	103	99.6			4.30
	Iron	107	106	106	104		1.92
	Magnesium	102	103	101			1.78
	Potassium	106	108	105	99.2		5.39
	Sodium	109	110	108	99.2		4.42
	Zinc	102	99.4	99.8	99.4		0.365
EPA 200.8 Rev. 5.4	Aluminum	100	99.2	98.7	98.9		0.239
	Antimony	96.7	98.2	100	98.2		1.96
	Arsenic	103	101	102	101		1.03
	Boron	99.4	105	103	104		0.832
	Cadmium	102	104	105	104		1.27
	Chromium	94.9	95.4	95.3	96.4		1.11
	Copper	101	98.4	98.0	97.7		0.179
	Lead	97.5	99.9	101	98.9		2.19
	Nickel	101	99.5	99.1	99.7		0.597
	Selenium	102	101	99.8	100		0.290
	Silver	102	102	103	103		0.0344
	Thallium	98.9	103	105	104		0.537
EPA 300.0	Bromide	102	97.7	97.9	99.9		0.117
EPA 300.0 Rev. 2.1	Chloride	102	91.7	98.6		15.3	
	Sulfate	104	92.5	100		15.4	
EPA 350.1 Rev. 2.0	Ammonia-N	103	104	106			1.35
	Ammonia-N	102	103	103			0.0911
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.0	96.4			0.425
	Kjeldahl Nitrogen	104	100	107			3.55
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.1	95.6			0.496
	NO ₂ NO ₃ -N	99.5	98.6	98.1			0.491
EPA 365.1 Rev. 2.0	Total-P	101	94.0	91.9			1.14
	Total-P	100	90.4	91.4			1.04
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	96.6	97.6			0.896
	O-Phosphate-P	104	96.4	96.9			0.494
EPA 8321B	2,4-D	84.1	68.7	89.6			26.4
	Acesulfame K	85.4	101	87.6			14.1
	Acetaminophen	106	137	128			6.76
	AMPA	129	105	111			4.88
	Bentazon	113	100	94.2			5.99
	Carbamazepine	87.3	114	103			10.1
	Diuron	103	99.9	102			1.87
	Endothall	63.2	111	123			10.7
	Fenuron	148	144	138			3.97
	Fluridone	114	118	114			2.86
	Glufosinate	129	132	122			8.01
	Glyphosate	134	131	131			0.183
	Hydrocodone	122	102	109			5.95
	Ibuprofen	63.6	65.8	65.5			0.352
	Imazapyr	104	113	98.6			13.9
	Imidacloprid	134	184	174			5.26
	Linuron	80.6	90.5	85.2			5.94
	MCP	112	114	105			7.83
	Naproxen	71.0	99.4	87.0			13.3
	Primidone	114	122	94.3			25.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	72.3	107	108		0.860
	Sucralose	97.4	73.3	71.5		2.38
	Triclopyr	62.3	62.1	58.9		5.22
SM 2120 B	Color (true)	102			0.584	
SM 2320 B-97	Total Alkalinity	98.4			3.79	
	Total Alkalinity	99.8			8.26	
SM 2540 C-97	TDS				6.06	
SM 4500 F-C-97	Fluoride	100	103	104		0.484
	Fluoride	99.8	92.5	93.2		0.473
SM 5310 B-00	Organic Carbon	98.6	101	101		0.128
	Organic Carbon	98.2	98.5	99.3		0.615

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2072017, 2072018, 2072023, 2072024, 2072029
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2072049, 2072050
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2072049, 2072050
EPA 300.0 / E31780	Bromide in aqueous matrices	2072029
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2072017, 2072018, 2072023, 2072024
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2072017, 2072018, 2072023, 2072024
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2072019, 2072020, 2072025, 2072026, 2072030
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2072019, 2072020, 2072025, 2072026, 2072030
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2072019, 2072020, 2072025, 2072026, 2072030
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2072019, 2072020, 2072025, 2072026, 2072030
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2072021, 2072022, 2072027, 2072028, 2072031
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2072048
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2072048
SM 2120 B / E31780	True Color measured at 450 nm	2072017, 2072018, 2072023, 2072024
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2072017, 2072018, 2072023, 2072024, 2072029
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2072017, 2072018, 2072023, 2072024
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2072017, 2072018, 2072023, 2072024, 2072029
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2072017, 2072018, 2072023, 2072024, 2072029
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2072019, 2072020, 2072025, 2072026, 2072030

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	03/22/2019			03/22/2019 14:19	Adrian Shelby	2072017, 2072018, 2072023, 2072024, 2072029
EPA 200.7 Rev. 4.4	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/27/2019 15:36	Betina Topolski	2072049
	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/27/2019 15:41	Betina Topolski	2072050
EPA 200.8 Rev. 5.4	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/29/2019 21:43	Robert K Palmer	2072049
	03/22/2019	03/26/2019 14:35	Elliott D. Healy	03/29/2019 21:53	Robert K Palmer	2072050
	03/22/2019	03/26/2019 14:35	Elliott D. Healy	04/03/2019 15:44	Robert K Palmer	2072049
	03/22/2019	03/26/2019 14:35	Elliott D. Healy	04/03/2019 15:50	Robert K Palmer	2072050
EPA 300.0	03/22/2019			04/09/2019 18:06	Lipi Saha	2072029
EPA 300.0 Rev. 2.1	03/22/2019			03/28/2019 04:10	Lipi Saha	2072017
	03/22/2019			03/28/2019 06:47	Lipi Saha	2072018
	03/22/2019			03/28/2019 06:59	Lipi Saha	2072023
	03/22/2019			03/28/2019 07:11	Lipi Saha	2072024
EPA 350.1 Rev. 2.0	03/22/2019			03/27/2019 11:16	Ping Hua	2072030
	03/22/2019			03/28/2019 12:46	Ping Hua	2072020
	03/22/2019			03/28/2019 12:49	Ping Hua	2072019
	03/22/2019			03/28/2019 12:56	Ping Hua	2072025
	03/22/2019			03/28/2019 12:58	Ping Hua	2072026
EPA 351.2 Rev. 2.0	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 10:37	Joseph Suarez	2072030
	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 11:03	Joseph Suarez	2072019
	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 11:05	Joseph Suarez	2072020
	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 11:09	Joseph Suarez	2072025
	03/22/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/28/2019 11:11	Joseph Suarez	2072026
EPA 353.2 Rev. 2.0	03/22/2019			03/26/2019 10:29	Lauren Lees	2072019
	03/22/2019			03/26/2019 10:30	Lauren Lees	2072020
	03/22/2019			03/26/2019 10:31	Lauren Lees	2072025
	03/22/2019			03/26/2019 10:33	Lauren Lees	2072026
	03/22/2019			03/28/2019 11:58	Virginia P. Brown	2072030
EPA 365.1 Rev. 2.0	03/22/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:47	Rosalyn Ballman	2072019
	03/22/2019	03/28/2019 13:10	Adrian Shelby	03/28/2019 18:57	Rosalyn Ballman	2072026
	03/22/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 14:09	Rosalyn Ballman	2072020
	03/22/2019	03/28/2019 13:10	Adrian Shelby	03/29/2019 14:10	Rosalyn Ballman	2072025
	03/22/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 12:09	Rosalyn Ballman	2072030
EPA 365.1 Rev. 2.0 dissolved	03/22/2019			03/22/2019 15:04	Julia Storbeck	2072022
	03/22/2019			03/22/2019 15:05	Julia Storbeck	2072027
	03/22/2019			03/22/2019 15:06	Julia Storbeck	2072028
	03/22/2019			03/22/2019 15:17	Julia Storbeck	2072031
	03/22/2019			03/22/2019 15:18	Julia Storbeck	2072021
EPA 8321B	03/22/2019	03/25/2019 09:45	Rebecca Ware	03/25/2019 13:14	Rebecca Ware	2072048
	03/22/2019	03/25/2019 09:45	Rebecca Ware	03/26/2019 15:09	Rebecca Ware	2072048

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/22/2019	03/25/2019 09:45	Rebecca Ware	04/01/2019 19:25	Rebecca Ware	2072048
	03/22/2019	03/26/2019 12:30	Hoor Shaik	03/28/2019 03:07	Juyoung Kim	2072048
SM 2120 B	03/22/2019			03/22/2019 16:10	Blanca Fach	2072017
	03/22/2019			03/22/2019 16:11	Blanca Fach	2072018, 2072023
	03/22/2019			03/22/2019 16:12	Blanca Fach	2072024
SM 2320 B-97	03/22/2019			03/30/2019 05:46	Samantha Davila	2072023
	03/22/2019			03/30/2019 08:53	Samantha Davila	2072017
	03/22/2019			03/30/2019 09:04	Samantha Davila	2072018
	03/22/2019			03/30/2019 09:15	Samantha Davila	2072024
	03/22/2019			03/30/2019 14:38	Samantha Davila	2072029
SM 2540 C-97	03/22/2019			03/27/2019 14:03	Yijie Li	2072017, 2072018, 2072023, 2072024
SM 2540 D-97	03/22/2019			03/27/2019 14:03	Yijie Li	2072017, 2072018, 2072023, 2072024, 2072029
SM 4500 F-C-97	03/22/2019			03/30/2019 05:38	Samantha Davila	2072023
	03/22/2019			03/30/2019 08:53	Samantha Davila	2072017
	03/22/2019			03/30/2019 09:04	Samantha Davila	2072018
	03/22/2019			03/30/2019 09:15	Samantha Davila	2072024
	03/22/2019			04/06/2019 12:09	Dale L. Simmons	2072029
SM 5310 B-00	03/22/2019			03/26/2019 01:40	Julia Storbeck	2072019
	03/22/2019			03/26/2019 01:52	Julia Storbeck	2072020
	03/22/2019			03/26/2019 02:04	Julia Storbeck	2072025
	03/22/2019			03/26/2019 02:16	Julia Storbeck	2072026
	03/22/2019			03/26/2019 06:45	Julia Storbeck	2072030