

Chemical Analysis Report

NW-DIST-2021-01-21-02

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

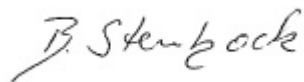
Event Description: **Holmes Run**
Request ID: **RQ-2021-01-18-41**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 12-FEB-2021 17:38



NON-CONFORMANCE REPORT INCLUDED

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: Sikes Creek Upstream of Harris Stevenson Rd Collection Date/Time: 01/19/2021 12:50

Field ID: G3NW0450

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220431	EPA 200.7 Rev. 4.4	Barium	14.4		ug/L	P392838	
		Calcium	16.5		mg/L	P392838	
		Iron	500		ug/L	P392838	
		Magnesium	0.64		mg/L	P392838	
		Manganese	50.7		ug/L	P392838	
		Potassium	0.30	U	mg/L	P392838	
		Sodium	2.3		mg/L	P392838	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P392838	
		Aluminum	108		ug/L	P392838	
		Antimony	0.050	U	ug/L	P392838	
		Arsenic	0.21		ug/L	P392838	
		Beryllium	0.021	I	ug/L	P392838	
		Boron**	6.3	I	ug/L	P392838	
		Cadmium	0.020	U	ug/L	P392838	
		Chromium	0.40	U	ug/L	P392838	
		Copper	0.40	U	ug/L	P392838	
		Lead	0.21	I	ug/L	P392838	
		Nickel	0.50	U	ug/L	P392838	
		Selenium	0.20	U	ug/L	P392838	
		Silver	0.010	U	ug/L	P392838	
		Thallium	0.10	U	ug/L	P392838	
	SM 2340B	Hardness	43.8		mg/L	P392838	

Sample Location: Sikes Creek Upstream of Bonifay Gritney Rd

Collection Date/Time: 01/19/2021 12:30

Field ID: G3NW0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220371	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P392714	
	EPA 300.0 Rev. 2.1	Chloride	4.2		mg Cl/L	P392789	
		Sulfate	0.57		mg SO4/L	P392790	
	SM 2120 B-2011	Color (true)	86		PCU	P392679	
	SM 2320 B-2011	Total Alkalinity	13		mg CaCO3/L	P393214	
	SM 2540 C-2011	TDS	55		mg/L	P393018	
	SM 2540 D-2011	TSS	4	I	mg/L	P392978	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P392867	
2220373	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P393336	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P393125	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P392815	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P393210	
	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P392985	
2220375	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P392703	
2220421	EPA 8321B	2,4-D	0.0020	U	ug/L	P392677	
		Acesulfame K	0.10	U	ug/L	P392663	
		AMPA	0.10	U	ug/L	P392663	
		Sucralose	0.014	I	ug/L	P392663	
		Acetaminophen**	0.0080	U	ug/L	P392677	
		Acetamiprid**	0.0020	U	ug/L	P392677	
		Endothall	0.25	U	ug/L	P392663	
		Glufosinate	0.10	U	ug/L	P392663	
		Glyphosate	0.10	U	ug/L	P392663	
		Afidopyropen**	0.0020	U	ug/L	P392677	
		Bentazon	0.0032	I	ug/L	P392677	
		Benzovindiflupyr**	0.0020	U	ug/L	P392677	
		Carbamazepine**	8.0E-04	U	ug/L	P392677	
		Clothianidin**	0.0020	U	ug/L	P392677	
		Dinotefuran**	0.0020	U	ug/L	P392677	
		Diuron	0.0020	U	ug/L	P392677	
		Fenuron	0.016	U	ug/L	P392677	
		Fluridone**	8.0E-04	U	ug/L	P392677	
		Imazapyr**	0.0041	I	ug/L	P392677	
		Hydrocodone**	0.0020	U	ug/L	P392677	
		Ibuprofen**	0.020	U	ug/L	P392677	
		Imidacloprid	0.0020	U	ug/L	P392677	
		Linuron	0.0040	U	ug/L	P392677	
		Mandestrobin**	0.0020	U	ug/L	P392677	
		MCPP	0.0020	U	ug/L	P392677	
		Naproxen**	0.0080	U	ug/L	P392677	
		Primidone**	0.0040	U	ug/L	P392677	
		Pyraclostrobin**	0.0020	U	ug/L	P392677	
		Thiamethoxam**	0.0020	U	ug/L	P392677	

Field ID: G3NW0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220421	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392677	
		Triclopyr**	0.0040	U	ug/L	P392677	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Gum Creek Downstream of Bess Nook Rd

Collection Date/Time: 01/19/2021 11:55

Field ID: G3NW0452

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220377	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P392714	
	EPA 300.0 Rev. 2.1	Chloride	4.2		mg Cl/L	P392789	
		Sulfate	0.37	I	mg SO4/L	P392790	
	SM 2120 B-2011	Color (true)	66		PCU	P392679	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P393214	
	SM 2540 C-2011	TDS	29		mg/L	P393019	
	SM 2540 D-2011	TSS	2	U	mg/L	P392979	
2220379	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P392867	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P393336	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P393126	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P392815	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P393210	
2220381	SM 5310 B-2011	Organic Carbon	9.1		mg C/L	P392985	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P392704	
2220429	EPA 200.7 Rev. 4.4	Barium	6.8		ug/L	P392838	
		Calcium	1.01		mg/L	P392838	
		Iron	260		ug/L	P392838	
		Magnesium	0.52		mg/L	P392838	
		Manganese	43.7		ug/L	P392838	
		Potassium	0.30	U	mg/L	P392838	
		Sodium	1.9	I	mg/L	P392838	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P392838	
		Aluminum	224		ug/L	P392838	
		Antimony	0.050	U	ug/L	P392838	
		Arsenic	0.18	I	ug/L	P392838	
		Beryllium	0.014	I	ug/L	P392838	
		Boron**	9.0		ug/L	P392838	
		Cadmium	0.020	U	ug/L	P392838	
		Chromium	0.40	U	ug/L	P392838	
		Copper	0.40	U	ug/L	P392838	
		Lead	0.21	I	ug/L	P392838	
		Nickel	0.50	U	ug/L	P392838	
		Selenium	0.20	U	ug/L	P392838	
		Silver	0.010	U	ug/L	P392838	
		Thallium	0.10	U	ug/L	P392838	
		Hardness	4.6		mg/L	P392838	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Panther Creek Upstream of Sr280

Collection Date/Time: 01/19/2021 11:00

Field ID: G3NW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220372	EPA 180.1 Rev. 2.0	Turbidity	2.4	Q	NTU	P392714	
	EPA 300.0 Rev. 2.1	Chloride	3.8		mg Cl/L	P392789	
		Sulfate	1.7		mg SO4/L	P392790	
	SM 2120 B-2011	Color (true)	30	Q	PCU	P392679	
	SM 2320 B-2011	Total Alkalinity	1.2	I	mg CaCO3/L	P393214	
	SM 2540 C-2011	TDS	15	I	mg/L	P393019	
	SM 2540 D-2011	TSS	2	U	mg/L	P392979	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P392867	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P393336	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P393126	
2220374	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P392815	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P393210	
	SM 5310 B-2011	Organic Carbon	3.3		mg C/L	P392985	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	UQ	mg P/L	P392704	
	dissolved						
2220422	EPA 8321B	2,4-D	0.0020	U	ug/L	P392677	
		Acesulfame K	0.10	U	ug/L	P392663	
		AMPA	0.10	U	ug/L	P392663	
		Sucralose	0.035	I	ug/L	P392663	
		Acetaminophen**	0.0080	U	ug/L	P392677	
		Acetamiprid**	0.0020	U	ug/L	P392677	
		Endothall	0.25	U	ug/L	P392663	
		Glufosinate	0.10	U	ug/L	P392663	
		Glyphosate	0.10	U	ug/L	P392663	
		Afidopyropen**	0.0020	U	ug/L	P392677	
		Bentazon	8.0E-04	U	ug/L	P392677	
		Benzovindiflupyr**	0.0020	U	ug/L	P392677	
		Carbamazepine**	8.0E-04	U	ug/L	P392677	
		Clothianidin**	0.0020	U	ug/L	P392677	
		Dinotefuran**	0.0020	U	ug/L	P392677	
		Diuron	0.0020	U	ug/L	P392677	
		Fenuron	0.016	U	ug/L	P392677	
		Fluridone**	8.0E-04	U	ug/L	P392677	
		Imazapyr**	0.0040	U	ug/L	P392677	
		Hydrocodone**	0.0020	U	ug/L	P392677	
		Ibuprofen**	0.020	U	ug/L	P392677	
		Imidacloprid	0.0020	U	ug/L	P392677	
		Linuron	0.0040	U	ug/L	P392677	
		Mandestrobin**	0.0020	U	ug/L	P392677	
		MCP	0.0020	U	ug/L	P392677	
		Naproxen**	0.0080	U	ug/L	P392677	
		Primidone**	0.0040	U	ug/L	P392677	
		Pyraclostrobin**	0.0020	U	ug/L	P392677	
		Thiamethoxam**	0.0020	U	ug/L	P392677	

Field ID: G3NW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220422	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P392677	
		Triclopyr**	0.0040	U	ug/L	P392677	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

SM 2120 B-2011: The sample expired upon receipt.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Bay Branch Upstream of Hwy 331

Collection Date/Time: 01/19/2021 10:25

Field ID: G3NW0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2220378	EPA 300.0 Rev. 2.1	Chloride	4.1		mg Cl/L	P392789	
		Sulfate	2.2		mg SO4/L	P392790	
	SM 2320 B-2011	Total Alkalinity	4.6		mg CaCO3/L	P393214	
	SM 2540 C-2011	TDS	34		mg/L	P393019	
	SM 2540 D-2011	TSS	2	I	mg/L	P392979	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P392867	
2220380	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P393453	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P393126	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P392815	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P393210	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P392985	
2220430	EPA 200.7 Rev. 4.4	Barium	8.4		ug/L	P392838	
		Calcium	2.91		mg/L	P392838	
		Iron	460		ug/L	P392838	
		Magnesium	0.76		mg/L	P392838	
		Manganese	6.9		ug/L	P392838	
		Potassium	0.31	I	mg/L	P392838	
		Sodium	2.5		mg/L	P392838	
	EPA 200.8 Rev. 5.4	Zinc	5.6	I	ug/L	P392838	
		Aluminum	184		ug/L	P392838	
		Antimony	0.050	U	ug/L	P392838	
		Arsenic	0.21		ug/L	P392838	
		Beryllium	0.016	I	ug/L	P392838	
		Boron**	8.9		ug/L	P392838	
		Cadmium	0.020	U	ug/L	P392838	
		Chromium	0.40	U	ug/L	P392838	
		Copper	0.40	U	ug/L	P392838	
		Lead	0.20	U	ug/L	P392838	
		Nickel	0.50	U	ug/L	P392838	
		Selenium	0.20	U	ug/L	P392838	
		Silver	0.010	U	ug/L	P392838	
		Thallium	0.10	U	ug/L	P392838	
	SM 2340B	Hardness	10.4		mg/L	P392838	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Non-Conformance Report

NCR ID: 8604

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
NW-DIST-2021-01-21-02	TLH-2021-01-21-19	2220378	
NW-DIST-2021-01-21-02	TLH-2021-01-21-19	2220382	

NCR Type: SHIPPING/RECEIVING NCR Category: Samples arrived late

Observation: Samples arrived one or more days late by FedEx, samples received within the acceptable temperature range.

Resolution: Biology and Chemistry supervisors were notified by email.
Affected tests cancelled per SMP protocol.
Customer contacted by email.

Authorized by/Date: Joshua Ayres 1/25/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P392714

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P392838

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
Manganese	1.0	U	ug/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: P392838

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392789

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392790

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393336

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393453

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393125

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393126

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392815

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393210

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392703

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392704

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

Reference Method: EPA 8321B
Batch ID: P392663

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P392677

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

Reference Method: SM 2120 B-2011

Batch ID: P392679

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P393214

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

Reference Method: SM 2540 C-2011

Batch ID: P393018

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011

Batch ID: P393019

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P392978

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P392979

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P392867

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P392985

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: P392838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.5		P	85 - 115
Calcium	98.2		P	85 - 115
Iron	96.5		P	85 - 115
Magnesium	97.3		P	85 - 115
Manganese	98.8		P	85 - 115
Potassium	97.7		P	85 - 115
Sodium	105		P	85 - 115
Zinc	95.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P392838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	105		P	85 - 115
Beryllium	101		P	85 - 115
Boron	103		P	85 - 115
Cadmium	86.7		P	85 - 115
Chromium	112		P	85 - 115
Copper	102		P	85 - 115
Lead	106		P	85 - 115
Nickel	102		P	85 - 115
Selenium	103		P	85 - 115
Silver	113		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392789

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392790

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393336

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393453

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393125

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393126

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393210

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392703

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392704

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

Reference Method: EPA 8321B
Batch ID: P392663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	97.1		P	40 - 150
AMPA	102		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	133		P	40 - 140
Sucralose	131		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P392677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	128		P	30 - 160
Acetaminophen	85.3		P	30 - 160
Acetamiprid	101		P	30 - 160
Afidopyropen	85.4		P	30 - 160
Bentazon	91.3		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P392677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	80.9		P	30 - 160
Carbamazepine	84.3		P	30 - 160
Clothianidin	83.3		P	30 - 160
Dinotefuran	91.9		P	30 - 160
Diuron	71.1		P	30 - 160
Fenuron	104		P	30 - 160
Fluridone	80.5		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	85.2		P	30 - 160
Imazapyr	92.5		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	71.3		P	30 - 160
Mandestrobin	96.6		P	30 - 160
MCPP	105		P	30 - 160
Naproxen	61.3		P	30 - 160
Primidone	87.2		P	30 - 160
Pyraclostrobin	78.0		P	30 - 160
Thiamethoxam	93.5		P	30 - 160
Tolfenpyrad	51.1		P	30 - 160
Triclopyr	91.7		P	30 - 160

Reference Method: SM 2120 B-2011

Batch ID: P392679

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P393214

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.1		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P392867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P392985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220401	Barium	103		P	80 - 120
2220401	Calcium	99.4		P	80 - 120
2220401	Iron	102		P	80 - 120
2220401	Magnesium	102		P	80 - 120
2220401	Manganese	102		P	80 - 120
2220401	Potassium	101		P	80 - 120
2220401	Sodium	106		P	80 - 120
2220401	Zinc	97.8		P	80 - 120
2220503	Barium	101	99.4	P/P	80 - 120
2220503	Calcium	102	101	P/P	80 - 120
2220503	Iron	100	102	P/P	80 - 120
2220503	Magnesium	101	102	P/P	80 - 120
2220503	Manganese	100	98.7	P/P	80 - 120
2220503	Potassium	98.7	97.8	P/P	80 - 120
2220503	Sodium	102	101	P/P	80 - 120
2220503	Zinc	98.0	96.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220401	Aluminum	99.5		P	80 - 120
2220401	Antimony	103		P	80 - 120
2220401	Arsenic	102		P	80 - 120
2220401	Beryllium	100		P	80 - 120
2220401	Boron	105		P	80 - 120
2220401	Cadmium	89.1		P	80 - 120
2220401	Chromium	104		P	80 - 120
2220401	Copper	95.5		P	80 - 120
2220401	Lead	105		P	80 - 120
2220401	Nickel	92.6		P	80 - 120
2220401	Selenium	98.9		P	80 - 120
2220401	Silver	111		P	80 - 120
2220401	Thallium	104		P	80 - 120
2220503	Aluminum	98.5	102	P/P	80 - 120
2220503	Antimony	104	105	P/P	80 - 120
2220503	Arsenic	103	104	P/P	80 - 120
2220503	Beryllium	100	99.4	P/P	80 - 120
2220503	Boron	101	105	P/P	80 - 120
2220503	Cadmium	90.2	91.2	P/P	80 - 120
2220503	Chromium	110	114	P/P	80 - 120
2220503	Copper	101	103	P/P	80 - 120
2220503	Lead	107	109	P/P	80 - 120
2220503	Nickel	102	103	P/P	80 - 120
2220503	Selenium	101	102	P/P	80 - 120
2220503	Silver	112	114	P/P	80 - 120
2220503	Thallium	104	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220281	Chloride	102		P	90 - 110
2220423	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P392790

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220281	Sulfate	103		P	90 - 110
2220423	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220354	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220485	Ammonia-N	98.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2219973	Kjeldahl Nitrogen	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220380	Kjeldahl Nitrogen	105	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P392815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220373	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220362	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392703

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220317	O-Phosphate-P	96.0	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P392704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220486	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P392663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2219980	Acesulfame K	81.7	84.4	P/P	40 - 150
2219980	AMPA	116	107	P/P	40 - 150
2219980	Endothall	101	103	P/P	40 - 150
2219980	Glufosinate	91.6	104	P/P	40 - 150
2219980	Glyphosate	119	135	P/P	40 - 140
2219980	Sucralose	128	134	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P392677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220213	2,4-D	102	95.7	P/P	30 - 160
2220213	Acetaminophen	91.4	88.0	P/P	30 - 160
2220213	Acetamiprid	86.5	83.6	P/P	30 - 160
2220213	Afidopyropen	90.2	82.0	P/P	30 - 160
2220213	Benzovindiflupyr	85.8	76.2	P/P	30 - 160
2220213	Carbamazepine	67.7	64.1	P/P	30 - 160
2220213	Clothianidin	77.2	87.2	P/P	30 - 160
2220213	Dinotefuran	102	101	P/P	30 - 160
2220213	Diuron	49.9	50.4	P/P	30 - 160
2220213	Fenuron	65.6	67.4	P/P	30 - 160
2220213	Hydrocodone	93.2	93.1	P/P	30 - 160
2220213	Ibuprofen	64.0	78.2	P/P	30 - 160
2220213	Imidacloprid	130	124	P/P	30 - 160
2220213	Linuron	65.6	59.5	P/P	30 - 160
2220213	Mandestrobin	88.8	82.4	P/P	30 - 160
2220213	MCCP	101	89.8	P/P	30 - 160
2220213	Naproxen	67.9	76.4	P/P	30 - 160
2220213	Primidone	76.9	78.4	P/P	30 - 160
2220213	Pyraclostrobin	83.5	78.3	P/P	30 - 160
2220213	Thiamethoxam	101	106	P/P	30 - 160
2220213	Tolfenpyrad	55.7	50.9	P/P	30 - 160
2220213	Triclopyr	106	89.8	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P392867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220650	Fluoride	98.3	99.5	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P392985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2220380	Organic Carbon	100	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P392714

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220353	Turbidity	4.39	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P392838

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220503	Barium	1.17	Spike	P	0 - 20
2220503	Calcium	0.103	Spike	P	0 - 20
2220503	Iron	1.48	Spike	P	0 - 20
2220503	Magnesium	0.644	Spike	P	0 - 20
2220503	Manganese	1.14	Spike	P	0 - 20
2220503	Potassium	0.728	Spike	P	0 - 20
2220503	Sodium	0.840	Spike	P	0 - 20
2220503	Zinc	1.32	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P392838

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220503	Aluminum	3.37	Spike	P	0 - 20
2220503	Antimony	0.598	Spike	P	0 - 20
2220503	Arsenic	0.633	Spike	P	0 - 20
2220503	Beryllium	0.519	Spike	P	0 - 20
2220503	Boron	3.11	Spike	P	0 - 20
2220503	Cadmium	1.10	Spike	P	0 - 20
2220503	Chromium	4.00	Spike	P	0 - 20
2220503	Copper	1.78	Spike	P	0 - 20
2220503	Lead	1.28	Spike	P	0 - 20
2220503	Nickel	1.02	Spike	P	0 - 20
2220503	Selenium	0.430	Spike	P	0 - 20
2220503	Silver	1.86	Spike	P	0 - 20
2220503	Thallium	3.54	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392789

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220423	Chloride	0.819	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P392790

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220423	Sulfate	1.08	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393336

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220354	Ammonia-N	0.219	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P393453

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220485	Ammonia-N	1.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P393125

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2219973	Kjeldahl Nitrogen	0.468	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P393126

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220380	Kjeldahl Nitrogen	3.48	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P392815

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220373	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P393210

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220362	Total-P	1.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P392703

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220317	O-Phosphate-P	0.177	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P392704

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220486	O-Phosphate-P	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P392663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2219980	Acesulfame K	3.29	Spike	P	0 - 30
2219980	AMPA	8.42	Spike	P	0 - 30
2219980	Endothall	1.87	Spike	P	0 - 30
2219980	Glufosinate	13.0	Spike	P	0 - 30
2219980	Glyphosate	12.5	Spike	P	0 - 30
2219980	Sucralose	4.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P392677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220213	2,4-D	5.80	Spike	P	0 - 30
2220213	Acetaminophen	3.82	Spike	P	0 - 30
2220213	Acetamiprid	3.46	Spike	P	0 - 30
2220213	Afidopyropen	9.49	Spike	P	0 - 30
2220213	Bentazon	3.35	Spike	P	0 - 30
2220213	Benzovindiflupyr	11.8	Spike	P	0 - 30
2220213	Carbamazepine	5.35	Spike	P	0 - 30
2220213	Clothianidin	12.2	Spike	P	0 - 30
2220213	Dinotefuran	0.802	Spike	P	0 - 30
2220213	Diuron	0.932	Spike	P	0 - 30
2220213	Fenuron	2.71	Spike	P	0 - 30
2220213	Fluridone	16.3	Spike	P	0 - 30
2220213	Hydrocodone	0.132	Spike	P	0 - 30
2220213	Ibuprofen	20.0	Spike	P	0 - 30
2220213	Imazapyr	7.82	Spike	P	0 - 30
2220213	Imidacloprid	4.43	Spike	P	0 - 30
2220213	Linuron	9.66	Spike	P	0 - 30
2220213	Mandestrobin	7.47	Spike	P	0 - 30
2220213	MCPP	11.5	Spike	P	0 - 30
2220213	Naproxen	11.7	Spike	P	0 - 30
2220213	Primidone	1.79	Spike	P	0 - 30
2220213	Pyraclostrobin	6.47	Spike	P	0 - 30
2220213	Thiamethoxam	5.33	Spike	P	0 - 30
2220213	Tolfenpyrad	9.08	Spike	P	0 - 30
2220213	Triclopyr	16.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P392679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220353	Color (true)	0.225	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P393214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220650	Total Alkalinity	1.41	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P393018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220315	TDS	5.04	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P393019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220423	TDS	1.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P392867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220650	Fluoride	0.927	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P392985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2220380	Organic Carbon	0.680	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2220421

Field Sample ID: G3NW0159

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	82.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.6	P	30 - 160
EPA 8321B	Diuron-d6	41.6	P	30 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.8	P	30 - 160
EPA 8321B	Primidone-d5	72.2	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	30 - 160

Lab Sample ID: 2220422

Field Sample ID: G3NW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.4	P	30 - 160
EPA 8321B	Diuron-d6	60.7	P	30 - 160
EPA 8321B	Endothall-d6	99.4	P	40 - 160
EPA 8321B	Endothall-d6	99.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	40 - 160
EPA 8321B	Ibuprofen-d3	80.4	P	30 - 160
EPA 8321B	Primidone-d5	82.5	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160
EPA 8321B	Sucralose-d6	109	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103154

Included Lab Sample IDs: 2220371, 2220372, 2220377, 2220378

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

Reference Method: SM 2120 B-2011

Run ID: A103155

Included Lab Sample IDs: 2220371, 2220372, 2220377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	103	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103162

Included Lab Sample IDs: 2220375, 2220376, 2220381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.2	P/P	90 - 110
O-Phosphate-P	99.2	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103165

Included Lab Sample IDs: 2220371, 2220372, 2220377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A103192

Included Lab Sample IDs: 2220421, 2220422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	116	118	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103210

Included Lab Sample IDs: 2220373, 2220374, 2220379, 2220380

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

Reference Method: EPA 8321B

Run ID: A103215

Included Lab Sample IDs: 2220421, 2220422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	98.1	99.4	P/P	60 - 160
AMPA	102	103	P/P	60 - 160
Endothall	96.0	91.7	P/P	60 - 160
Glufosinate	84.3	99.7	P/P	60 - 160
Glyphosate	117	112	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A103225

Included Lab Sample IDs: 2220371, 2220372, 2220377, 2220378

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

Reference Method: EPA 8321B

Run ID: A103235

Included Lab Sample IDs: 2220421, 2220422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.1	95.4	P/P	50 - 150
Acetaminophen	99.8	103	P/P	60 - 160
Acetamiprid	105	109	P/P	50 - 150
Afidopyropen	111	120	P/P	50 - 150
Bentazon	124	121	P/P	50 - 160
Benzovindiflupyr	120	122	P/P	50 - 160
Carbamazepine	105	103	P/P	60 - 150
Clothianidin	85.6	92.2	P/P	60 - 150
Dinotefuran	105	101	P/P	50 - 150
Diuron	117	113	P/P	60 - 160
Fenuron	111	106	P/P	60 - 150
Fluridone	123	122	P/P	60 - 160
Hydrocodone	117	119	P/P	60 - 150
Ibuprofen	109	75.7	P/P	50 - 160
Imazapyr	100	97.3	P/P	50 - 160
Imidacloprid	98.1	103	P/P	60 - 150
Linuron	108	104	P/P	60 - 150
Mandestrobin	109	107	P/P	50 - 150
MCPP	100	98.3	P/P	50 - 150
Naproxen	76.4	74.8	P/P	50 - 160
Primidone	93.8	87.2	P/P	60 - 150
Pyraclostrobin	102	111	P/P	60 - 150
Thiamethoxam	110	105	P/P	50 - 150
Tolfenpyrad	111	107	P/P	60 - 150
Triclopyr	107	90.2	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103253

Included Lab Sample IDs: 2220429, 2220430, 2220431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.9	98.3	P/P	90 - 110
Calcium	95.0	94.2	P/P	90 - 110
Iron	93.8	94.2	P/P	90 - 110
Magnesium	92.7	93.3	P/P	90 - 110
Manganese	99.6	99.4	P/P	90 - 110
Potassium	92.5	94.4	P/P	90 - 110
Sodium	96.2	96.5	P/P	90 - 110
Zinc	96.8	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A103265

Included Lab Sample IDs: 2220373, 2220374, 2220379, 2220380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	100	P/P	90 - 110
Organic Carbon	99.6	98.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103333

Included Lab Sample IDs: 2220429, 2220430, 2220431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	101	P/P	90 - 110
Antimony	101	99.7	P/P	90 - 110
Arsenic	99.4	99.2	P/P	90 - 110
Boron	104	106	P/P	90 - 110
Chromium	109	110	P/P	90 - 110
Copper	98.3	97.2	P/P	90 - 110
Lead	103	103	P/P	90 - 110
Nickel	98.0	97.4	P/P	90 - 110
Selenium	99.4	99.1	P/P	90 - 110
Silver	107	107	P/P	90 - 110
Thallium	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103347

Included Lab Sample IDs: 2220373, 2220374, 2220379, 2220380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	P/P	90 - 110
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103351

Included Lab Sample IDs: 2220429, 2220430, 2220431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	93.8	92.3	P/P	90 - 110
Cadmium	90.0	90.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103352

Included Lab Sample IDs: 2220371, 2220372, 2220377, 2220378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	93.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103396

Included Lab Sample IDs: 2220373, 2220374, 2220379

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103417

Included Lab Sample IDs: 2220373, 2220374, 2220379, 2220380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103454

Included Lab Sample IDs: 2220380

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	100	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						4.39	
EPA 200.7 Rev. 4.4	Barium	98.5	103	101	99.4			1.17
	Calcium	98.2	99.4	102	101			0.103
	Iron	96.5	102	100	102			1.48
	Magnesium	97.3	102	101	102			0.644
	Manganese	98.8	102	100	98.7			1.14
	Potassium	97.7	101	98.7	97.8			0.728
	Sodium	105	106	102	101			0.840
	Zinc	95.4	97.8	98.0	96.7			1.32
EPA 200.8 Rev. 5.4	Aluminum	102	98.5	102	99.5			3.37
	Antimony	107	104	105	103			0.598
	Arsenic	105	103	104	102			0.633
	Beryllium	101	100	99.4	100			0.519
	Boron	103	101	105	105			3.11
	Cadmium	86.7	90.2	91.2	89.1			1.10
	Chromium	112	110	114	104			4.00
	Copper	102	101	103	95.5			1.78
	Lead	106	107	109	105			1.28
	Nickel	102	102	103	92.6			1.02
	Selenium	103	101	102	98.9			0.430
	Silver	113	112	114	111			1.86
	Thallium	104	104	108	104			3.54
EPA 300.0 Rev. 2.1	Chloride	101	102	102			0.819	
	Sulfate	103	102	103			1.08	
EPA 350.1 Rev. 2.0	Ammonia-N	103	103	103				0.219
	Ammonia-N	99.4	98.0	100				1.74
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	105	105				0.468
	Kjeldahl Nitrogen	101	105	109				3.48
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.0	97.5	97.0				0.489
EPA 365.1 Rev. 2.0	Total-P	101	105	103				1.77
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1	96.0	95.8				0.177
	O-Phosphate-P	98.5	101	101				0.0
EPA 8321B	2,4-D	128	102	95.7				5.80
	Acesulfame K	97.1	81.7	84.4				3.29
	Acetaminophen	85.3	91.4	88.0				3.82
	Acetamiprid	101	86.5	83.6				3.46
	Afidopyropen	85.4	90.2	82.0				9.49
	AMPA	102	116	107				8.42
	Bentazon	91.3						3.35
	Benzovindiflupyr	80.9	85.8	76.2				11.8
	Carbamazepine	84.3	67.7	64.1				5.35
	Clothianidin	83.3	77.2	87.2				12.2
	Dinotefuran	91.9	102	101				0.802
	Diuron	71.1	49.9	50.4				0.932
	Endothall	102	101	103				1.87
	Fenuron	104	65.6	67.4				2.71
	Fluridone	80.5						16.3
	Glufosinate	100	91.6	104				13.0
	Glyphosate	133	119	135				12.5
	Hydrocodone	105	93.2	93.1				0.132
	Ibuprofen	85.2	64.0	78.2				20.0
	Imazapyr	92.5						7.82
	Imidacloprid	107	130	124				4.43
	Linuron	71.3	65.6	59.5				9.66

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	96.6	88.8	82.4		7.47
	MCP	105	101	89.8		11.5
	Naproxen	61.3	67.9	76.4		11.7
	Primidone	87.2	76.9	78.4		1.79
	Pyraclostrobin	78.0	83.5	78.3		6.47
	Sucralose	131	128	134		4.53
	Thiamethoxam	93.5	101	106		5.33
	Tolfenpyrad	51.1	55.7	50.9		9.08
	Triclopyr	91.7	106	89.8		16.1
SM 2120 B-2011	Color (true)	100			0.225	
SM 2320 B-2011	Total Alkalinity	97.1			1.41	
SM 2540 C-2011	TDS				5.04	
	TDS				1.90	
SM 4500 F-C-2011	Fluoride	98.6	98.3	99.5		0.927
SM 5310 B-2011	Organic Carbon	99.2	100	99.2		0.680

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2220371, 2220372, 2220377
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2220429, 2220430, 2220431
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2220429, 2220430, 2220431
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2220371, 2220372, 2220377, 2220378
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2220371, 2220372, 2220377, 2220378
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2220373, 2220374, 2220379, 2220380
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2220373, 2220374, 2220379, 2220380
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2220373, 2220374, 2220379, 2220380
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2220373, 2220374, 2220379, 2220380
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2220375, 2220376, 2220381
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2220421, 2220422
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2220421, 2220422
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2220371, 2220372, 2220377
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2220371, 2220372, 2220377, 2220378
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2220429, 2220430, 2220431
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2220371, 2220372, 2220377, 2220378
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2220371, 2220372, 2220377, 2220378
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2220371, 2220372, 2220377, 2220378
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2220373, 2220374, 2220379, 2220380

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	01/21/2021			01/21/2021 11:24	Yen Ta	2220377
	01/21/2021			01/21/2021 11:30	Yen Ta	2220371
	01/21/2021			01/21/2021 11:31	Yen Ta	2220372
EPA 200.7 Rev. 4.4	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/26/2021 18:43	Betina Topolski	2220429
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/26/2021 18:49	Betina Topolski	2220430
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/26/2021 18:55	Betina Topolski	2220431
EPA 200.8 Rev. 5.4	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/29/2021 17:05	Alexander Thompson	2220429
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/29/2021 17:12	Alexander Thompson	2220430
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	01/29/2021 17:20	Alexander Thompson	2220431
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	02/01/2021 16:07	Alexander Thompson	2220429
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	02/01/2021 16:11	Alexander Thompson	2220430
	01/21/2021	01/25/2021 15:35	Elliott D. Healy	02/01/2021 16:16	Alexander Thompson	2220431
EPA 300.0 Rev. 2.1	01/21/2021			01/22/2021 19:47	Lipi Saha	2220371
	01/21/2021			01/22/2021 19:59	Lipi Saha	2220372
	01/21/2021			01/22/2021 20:11	Lipi Saha	2220377
	01/21/2021			01/22/2021 20:23	Lipi Saha	2220378
EPA 350.1 Rev. 2.0	01/21/2021			02/03/2021 18:20	Ping Hua	2220373
	01/21/2021			02/03/2021 18:21	Ping Hua	2220374
	01/21/2021			02/03/2021 18:23	Ping Hua	2220379
	01/21/2021			02/05/2021 16:42	Ping Hua	2220380
EPA 351.2 Rev. 2.0	01/21/2021	01/29/2021 12:30	Yen Ta	02/01/2021 15:29	Julia Storbeck	2220373
	01/21/2021	01/29/2021 12:30	Yen Ta	02/01/2021 15:36	Julia Storbeck	2220380
	01/21/2021	01/29/2021 12:30	Yen Ta	02/01/2021 15:41	Julia Storbeck	2220374
	01/21/2021	01/29/2021 12:30	Yen Ta	02/01/2021 15:46	Julia Storbeck	2220379
EPA 353.2 Rev. 2.0	01/21/2021			01/25/2021 10:23	Beverly Y. Sanders	2220373
	01/21/2021			01/25/2021 10:24	Beverly Y. Sanders	2220374
	01/21/2021			01/25/2021 10:25	Beverly Y. Sanders	2220379
	01/21/2021			01/25/2021 10:27	Beverly Y. Sanders	2220380
EPA 365.1 Rev. 2.0	01/21/2021	02/02/2021 13:00	Lipi Saha	02/04/2021 11:22	Shengyu Wang	2220373
	01/21/2021	02/02/2021 13:00	Lipi Saha	02/04/2021 11:23	Shengyu Wang	2220374
	01/21/2021	02/02/2021 13:00	Lipi Saha	02/04/2021 11:24	Shengyu Wang	2220379
	01/21/2021	02/02/2021 13:00	Lipi Saha	02/04/2021 11:25	Shengyu Wang	2220380
EPA 365.1 Rev. 2.0 dissolved	01/21/2021			01/21/2021 14:35	Blanca Fach	2220375
	01/21/2021			01/21/2021 14:45	Blanca Fach	2220376
	01/21/2021			01/21/2021 14:46	Blanca Fach	2220381
EPA 8321B	01/21/2021	01/21/2021 15:15	Rebecca Ware	01/22/2021 03:33	Rebecca Ware	2220421
	01/21/2021	01/21/2021 15:15	Rebecca Ware	01/22/2021 03:44	Rebecca Ware	2220422
	01/21/2021	01/21/2021 15:15	Rebecca Ware	01/22/2021 19:51	Rebecca Ware	2220421
	01/21/2021	01/21/2021 15:15	Rebecca Ware	01/22/2021 20:04	Rebecca Ware	2220422
	01/21/2021	01/22/2021 09:00	Hoor Shaik	01/23/2021 20:58	Juyoung Kim	2220421

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	01/21/2021	01/22/2021 09:00	Hoor Shaik	01/23/2021 21:33	Juyoung Kim	2220422
SM 2120 B-2011	01/21/2021			01/21/2021 11:48	Benjamin T. Nordmann	2220377
	01/21/2021			01/21/2021 11:52	Benjamin T. Nordmann	2220371
	01/21/2021			01/21/2021 11:53	Benjamin T. Nordmann	2220372
SM 2320 B-2011	01/21/2021			01/29/2021 19:20	Dale L. Simmons	2220371
	01/21/2021			01/29/2021 19:27	Dale L. Simmons	2220372
	01/21/2021			01/29/2021 19:33	Dale L. Simmons	2220377
	01/21/2021			01/29/2021 19:41	Dale L. Simmons	2220378
SM 2340B	01/21/2021			01/26/2021 18:43	Betina Topolski	2220429
	01/21/2021			01/26/2021 18:49	Betina Topolski	2220430
	01/21/2021			01/26/2021 18:55	Betina Topolski	2220431
	01/21/2021			01/22/2021 15:16	Yijie Li	2220371, 2220372, 2220377, 2220378
SM 2540 C-2011	01/21/2021			01/22/2021 15:16	Yijie Li	2220371, 2220372, 2220377, 2220378
SM 2540 D-2011	01/21/2021			01/23/2021 01:47	Dale L. Simmons	2220371
SM 4500 F-C-2011	01/21/2021			01/23/2021 01:57	Dale L. Simmons	2220372
	01/21/2021			01/23/2021 02:06	Dale L. Simmons	2220377
	01/21/2021			01/23/2021 02:16	Dale L. Simmons	2220378
	01/21/2021			01/25/2021 21:59	Madeline Gruver	2220380
SM 5310 B-2011	01/21/2021			01/26/2021 02:41	Madeline Gruver	2220373
	01/21/2021			01/26/2021 02:55	Madeline Gruver	2220374
	01/21/2021			01/26/2021 03:07	Madeline Gruver	2220379
	01/21/2021					