

Chemical Analysis Report

NE-DIST-2020-07-14-01

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

Event Description: **Extra allocation kits NEROC**
Request ID: **RQ-2020-07-13-27**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 04-AUG-2020 10:22

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Mills Creek at US 301/US

Collection Date/Time: 07/13/2020 10:30

Field ID: 19020048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182815	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P384595	
	EPA 300.0 Rev. 2.1	Chloride	9.9		mg Cl/L	P385197	
		Sulfate	0.94		mg SO4/L	P385201	
		Color (true)	450		PCU	P384602	
	SM 2320 B-2011	Total Alkalinity	2.4	I	mg CaCO3/L	P385000	
	SM 2540 C-2011	TDS	109		mg/L	P384946	
	SM 2540 D-2011	TSS	3	I	mg/L	P385023	
	SM 4500 F-C-2011	Fluoride	0.039	I	mg F/L	P384853	
2182817	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P384818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P384702	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P384711	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P384875	
	SM 5310 B-2011	Organic Carbon	37		mg C/L	P384700	
2182819	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P384588	
2182830	EPA 200.7 Rev. 4.4	Barium	23.0		ug/L	P384585	
		Calcium	4.93		mg/L	P384585	
		Iron	2.12E+03		ug/L	P384585	
		Magnesium	1.46		mg/L	P384585	
		Potassium	0.95	I	mg/L	P384585	
		Sodium	6.1		mg/L	P384585	
		Zinc	67		ug/L	P384585	
	EPA 200.8 Rev. 5.4	Aluminum	674		ug/L	P384585	
		Antimony	0.050	U	ug/L	P384585	
		Arsenic	0.77		ug/L	P384585	
		Boron**	21.4		ug/L	P384585	
		Cadmium	0.020	U	ug/L	P384585	
		Chromium	0.96	I	ug/L	P384585	
		Copper	1.82		ug/L	P384585	
		Lead	0.87		ug/L	P384585	
		Nickel	1.5	I	ug/L	P384585	
		Selenium	0.20	U	ug/L	P384585	
		Silver	0.010	U	ug/L	P384585	
		Thallium	0.10	U	ug/L	P384585	
	SM 2340B	Hardness	18.3		mg/L	P384585	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 07/17/2020.

Sample Location: Mills Creek at US 301/US

Collection Date/Time: 07/13/2020 10:40

Field ID: FB07132020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182816	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P384596	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P385197	
		Sulfate	0.20	U	mg SO4/L	P385201	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P384603	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P385000	
	SM 2540 C-2011	TDS	15	U	mg/L	P384943	
	SM 2540 D-2011	TSS	2	U	mg/L	P385020	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P384853	
2182818	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P384818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P384702	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384711	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P385230	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P384700	
2182820	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384588	
2182829	EPA 8321B	2,4-D	0.0020	U	ug/L	P384706	
		Acesulfame K**	0.10	U	ug/L	P384573	MS
		AMPA**	0.10	U	ug/L	P384573	
		Sucralose**	0.010	U	ug/L	P384573	
		Acetaminophen**	0.0080	U	ug/L	P384706	
		Acetamiprid**	0.0020	U	ug/L	P384706	
		Endothall**	0.25	U	ug/L	P384573	
		Glufosinate**	0.10	U	ug/L	P384573	
		Glyphosate**	0.10	U	ug/L	P384573	
		Afidopyrophen**	0.0020	U	ug/L	P384706	
		Bentazon	8.0E-04	U	ug/L	P384706	
		Benzovindiflupyr**	0.0020	U	ug/L	P384706	
		Carbamazepine**	8.0E-04	U	ug/L	P384706	
		Clothianidin**	0.0020	U	ug/L	P384706	
		Dinotefuran**	0.0020	U	ug/L	P384706	
		Diuron	0.0020	U	ug/L	P384706	
		Fenuron	0.016	U	ug/L	P384706	
		Fluridone**	8.0E-04	U	ug/L	P384706	
		Imazapyr**	0.0040	U	ug/L	P384706	
		Hydrocodone**	0.0020	U	ug/L	P384706	
		Ibuprofen**	0.020	U	ug/L	P384706	
		Imidacloprid	0.0020	U	ug/L	P384706	
		Linuron	0.0040	U	ug/L	P384706	
		Mandestrobin**	0.0020	U	ug/L	P384706	
		MCP	0.0020	U	ug/L	P384706	
		Naproxen**	0.0080	U	ug/L	P384706	
		Primidone**	0.0040	U	ug/L	P384706	
		Pyraclostrobin**	0.0020	U	ug/L	P384706	
		Thiamethoxam**	0.0020	U	ug/L	P384706	

Field ID: FB07132020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182829	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P384706	
		Triclopyr**	0.0040	U	ug/L	P384706	
2182831	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P384585	
		Calcium	0.075	U	mg/L	P384585	
		Iron	30	U	ug/L	P384585	
		Magnesium	0.040	U	mg/L	P384585	
		Potassium	0.30	U	mg/L	P384585	
		Sodium	0.50	U	mg/L	P384585	
		Zinc	5.0	U	ug/L	P384585	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P384585	
		Antimony	0.050	U	ug/L	P384585	
		Arsenic	0.050	U	ug/L	P384585	
		Boron**	2.0	U	ug/L	P384585	
		Cadmium	0.020	U	ug/L	P384585	
		Chromium	0.40	U	ug/L	P384585	
		Copper	0.40	U	ug/L	P384585	
		Lead	0.20	U	ug/L	P384585	
		Nickel	0.50	U	ug/L	P384585	
		Selenium	0.20	U	ug/L	P384585	
		Silver	0.010	U	ug/L	P384585	
		Thallium	0.10	U	ug/L	P384585	
	SM 2340B	Hardness	0.35	U	mg/L	P384585	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Deep Creek @ HYWY 441

Collection Date/Time: 07/13/2020 12:00

Field ID: 21010051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182821	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P384596	
	EPA 300.0 Rev. 2.1	Chloride	5.9		mg Cl/L	P385197	
		Sulfate	0.29	I	mg SO4/L	P385201	
	SM 2120 B-2011	Color (true)	810		PCU	P384603	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P385000	
	SM 2540 C-2011	TDS	150		mg/L	P384946	
	SM 2540 D-2011	TSS	2	U	mg/L	P385023	
	SM 4500 F-C-2011	Fluoride	0.070	I	mg F/L	P384853	
2182822	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P384818	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P384702	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384711	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P384875	
	SM 5310 B-2011	Organic Carbon	63		mg C/L	P384700	
2182823	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P384589	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384595

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384596

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384585

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: P384585

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385197

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385201

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384818

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384702

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384711

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384875

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384588

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384589

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

Reference Method: EPA 8321B
Batch ID: P384573

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: P384706

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: P384602

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P384603

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385000

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

Reference Method: SM 2540 C-2011
Batch ID: P384943

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P384946

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385020

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385023

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384700

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: P384585

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	109		P	85 - 115
Iron	106		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	104		P	85 - 115
Sodium	99.6		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384585

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.9		P	85 - 115
Antimony	96.9		P	85 - 115
Arsenic	102		P	85 - 115
Boron	101		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	95.5		P	85 - 115
Copper	95.6		P	85 - 115
Lead	98.3		P	85 - 115
Nickel	98.6		P	85 - 115
Selenium	99.2		P	85 - 115
Silver	100		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385197

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384818

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384702

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384711

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384875

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

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: P384588

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.0		P	40 - 150
AMPA	83.8		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	96.8		P	40 - 150
Glyphosate	92.2		P	40 - 140
Sucralose	84.9		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P384706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	30 - 160
Acetaminophen	62.1		P	30 - 160
Acetamiprid	76.1		P	30 - 160
Afidopyropen	59.3		P	30 - 160
Bentazon	51.4		P	30 - 160
Benzovindiflupyr	61.7		P	30 - 160
Carbamazepine	61.6		P	30 - 160
Clothianidin	77.9		P	30 - 160
Dinotefuran	85.6		P	30 - 160
Diuron	51.4		P	30 - 160
Fenuron	88.8		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P384706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	79.7		P	30 - 160
Hydrocodone	73.7		P	30 - 160
Ibuprofen	66.1		P	30 - 160
Imazapyr	95.9		P	30 - 160
Imidacloprid	93.7		P	30 - 160
Linuron	57.5		P	30 - 160
Mandestrobin	66.9		P	30 - 160
MCPP	115		P	30 - 160
Naproxen	71.3		P	30 - 160
Primidone	76.7		P	30 - 160
Pyraclostrobin	68.6		P	30 - 160
Thiamethoxam	89.4		P	30 - 160
Tolfenpyrad	56.2		P	30 - 160
Triclopyr	92.0		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P384602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P384603

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

Reference Method: SM 2320 B-2011
Batch ID: P385000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P384700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181995	Barium	106		P	80 - 120
2181995	Calcium	108		P	80 - 120
2181995	Iron	105		P	80 - 120
2181995	Magnesium	107		P	80 - 120
2181995	Potassium	108		P	80 - 120
2181995	Sodium	102		P	80 - 120
2181995	Zinc	108		P	80 - 120
2182728	Barium	105	106	P/P	80 - 120
2182728	Calcium	103	107	P/P	80 - 120
2182728	Iron	101	105	P/P	80 - 120
2182728	Magnesium	103	107	P/P	80 - 120
2182728	Potassium	104	107	P/P	80 - 120
2182728	Sodium	102	103	P/P	80 - 120
2182728	Zinc	106	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181995	Aluminum	98.5		P	80 - 120
2181995	Antimony	95.4		P	80 - 120
2181995	Arsenic	101		P	80 - 120
2181995	Boron	101		P	80 - 120
2181995	Cadmium	99.6		P	80 - 120
2181995	Chromium	98.5		P	80 - 120
2181995	Copper	98.3		P	80 - 120
2181995	Lead	99.2		P	80 - 120
2181995	Nickel	97.5		P	80 - 120
2181995	Selenium	95.6		P	80 - 120
2181995	Silver	98.1		P	80 - 120
2181995	Thallium	102		P	80 - 120
2182728	Aluminum	99.9	97.1	P/P	80 - 120
2182728	Antimony	96.1	95.7	P/P	80 - 120
2182728	Arsenic	101	101	P/P	80 - 120
2182728	Boron	101	97.9	P/P	80 - 120
2182728	Cadmium	99.7	99.2	P/P	80 - 120
2182728	Chromium	97.0	96.0	P/P	80 - 120
2182728	Copper	96.8	95.8	P/P	80 - 120
2182728	Lead	98.2	97.5	P/P	80 - 120
2182728	Nickel	99.7	97.9	P/P	80 - 120
2182728	Selenium	98.1	97.5	P/P	80 - 120
2182728	Silver	98.9	98.6	P/P	80 - 120
2182728	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385197

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182765	Chloride	96.2		P	90 - 110
2182798	Chloride	96.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182765	Sulfate	95.4		P	90 - 110
2182798	Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182859	Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182839	Kjeldahl Nitrogen	97.2	94.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182775	NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182817	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2184228	Total-P	106	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182770	O-Phosphate-P	98.4	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182840	O-Phosphate-P	95.4	96.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P384573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182347	Acesulfame K	37.9	38.4	F/F	40 - 150
2182347	AMPA	65.0	61.5	P/P	40 - 150
2182347	Endothall	101	106	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P384573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182347	Glufosinate	81.6	76.2	P/P	40 - 150
2182347	Glyphosate	83.5	73.4	P/P	40 - 140
2182347	Sucralose	60.3	68.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P384706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182738	2,4-D	117	102	P/P	30 - 160
2182738	Acetaminophen	69.7	77.9	P/P	30 - 160
2182738	Acetamiprid	66.7	66.9	P/P	30 - 160
2182738	Afidopyropen	68.8	68.0	P/P	30 - 160
2182738	Bentazon	44.0	41.1	P/P	30 - 160
2182738	Benzovindiflupyr	70.8	65.0	P/P	30 - 160
2182738	Carbamazepine	52.3	53.9	P/P	30 - 160
2182738	Clothianidin	61.9	66.0	P/P	30 - 160
2182738	Dinotefuran	73.1	76.9	P/P	30 - 160
2182738	Diuron	45.6	49.5	P/P	30 - 160
2182738	Fenuron	70.2	73.3	P/P	30 - 160
2182738	Fluridone	89.5	82.3	P/P	30 - 160
2182738	Hydrocodone	57.4	62.3	P/P	30 - 160
2182738	Ibuprofen	71.6	63.0	P/P	30 - 160
2182738	Imazapyr	98.9	99.6	P/P	30 - 160
2182738	Imidacloprid	114	120	P/P	30 - 160
2182738	Linuron	61.9	58.7	P/P	30 - 160
2182738	Mandestrobin	74.5	73.2	P/P	30 - 160
2182738	MCP	121	115	P/P	30 - 160
2182738	Naproxen	68.9	73.0	P/P	30 - 160
2182738	Primidone	80.6	75.3	P/P	30 - 160
2182738	Pyraclostrobin	77.3	75.0	P/P	30 - 160
2182738	Thiamethoxam	79.7	84.7	P/P	30 - 160
2182738	Tolfenpyrad	47.5	47.4	P/P	30 - 160
2182738	Triclopyr	103	89.1	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P384853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2183318	Fluoride	100	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182774	Organic Carbon	97.2	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182765	Turbidity	4.35	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182837	Turbidity	5.83	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P384585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182728	Barium	1.49	Spike	P	0 - 20
2182728	Calcium	4.00	Spike	P	0 - 20
2182728	Iron	3.98	Spike	P	0 - 20
2182728	Magnesium	3.85	Spike	P	0 - 20
2182728	Potassium	2.31	Spike	P	0 - 20
2182728	Sodium	0.426	Spike	P	0 - 20
2182728	Zinc	1.57	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P384585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182728	Aluminum	2.71	Spike	P	0 - 20
2182728	Antimony	0.463	Spike	P	0 - 20
2182728	Arsenic	0.200	Spike	P	0 - 20
2182728	Boron	2.64	Spike	P	0 - 20
2182728	Cadmium	0.528	Spike	P	0 - 20
2182728	Chromium	0.990	Spike	P	0 - 20
2182728	Copper	1.06	Spike	P	0 - 20
2182728	Lead	0.782	Spike	P	0 - 20
2182728	Nickel	1.81	Spike	P	0 - 20
2182728	Selenium	0.662	Spike	P	0 - 20
2182728	Silver	0.272	Spike	P	0 - 20
2182728	Thallium	0.838	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385197

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182798	Chloride	1.02	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182859	Ammonia-N	0.636	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182839	Kjeldahl Nitrogen	1.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182775	NO2NO3-N	0.279	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182817	Total-P	0.567	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2184228	Total-P	7.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182770	O-Phosphate-P	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182840	O-Phosphate-P	0.835	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P384573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182347	Acesulfame K	1.19	Spike	P	0 - 30
2182347	AMPA	3.25	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P384573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182347	Endothall	4.87	Spike	P	0 - 30
2182347	Glufosinate	6.88	Spike	P	0 - 30
2182347	Glyphosate	9.96	Spike	P	0 - 30
2182347	Sucralose	12.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P384706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182738	2,4-D	13.5	Spike	P	0 - 30
2182738	Acetaminophen	11.1	Spike	P	0 - 30
2182738	Acetamiprid	0.416	Spike	P	0 - 30
2182738	Afidopyropen	1.16	Spike	P	0 - 30
2182738	Bentazon	3.25	Spike	P	0 - 30
2182738	Benzovindiflupyr	8.44	Spike	P	0 - 30
2182738	Carbamazepine	3.16	Spike	P	0 - 30
2182738	Clothianidin	6.53	Spike	P	0 - 30
2182738	Dinotefuran	5.16	Spike	P	0 - 30
2182738	Diuron	8.30	Spike	P	0 - 30
2182738	Fenuron	4.36	Spike	P	0 - 30
2182738	Fluridone	5.24	Spike	P	0 - 30
2182738	Hydrocodone	8.22	Spike	P	0 - 30
2182738	Ibuprofen	12.8	Spike	P	0 - 30
2182738	Imazapyr	0.477	Spike	P	0 - 30
2182738	Imidacloprid	5.22	Spike	P	0 - 30
2182738	Linuron	5.26	Spike	P	0 - 30
2182738	Mandestrobin	1.66	Spike	P	0 - 30
2182738	MCP	4.93	Spike	P	0 - 30
2182738	Naproxen	5.86	Spike	P	0 - 30
2182738	Primidone	6.87	Spike	P	0 - 30
2182738	Pyraclostrobin	3.08	Spike	P	0 - 30
2182738	Thiamethoxam	6.05	Spike	P	0 - 30
2182738	Tolfenpyrad	0.181	Spike	P	0 - 30
2182738	Triclopyr	14.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P384602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182766	Color (true)	0.641	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P384603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182836	Color (true)	3.70	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P385000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183317	Total Alkalinity	1.87	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P384943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182323	TDS	7.84	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
 Batch ID: P384946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182837	TDS	3.45	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P384853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2183318	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P384700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182774	Organic Carbon	0.0	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2182829

Field Sample ID: FB07132020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.5	P	30 - 160
EPA 8321B	Diuron-d6	80.4	P	30 - 160
EPA 8321B	Endothall-d6	93.5	P	30 - 160
EPA 8321B	Endothall-d6	93.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	104	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.7	P	30 - 160
EPA 8321B	Primidone-d5	84.8	P	30 - 160
EPA 8321B	Sucralose-d6	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	92.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100008

Included Lab Sample IDs: 2182817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100019

Included Lab Sample IDs: 2182815, 2182816, 2182821

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.5	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100104

Included Lab Sample IDs: 2182815, 2182816, 2182821

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	99.0	P/P	90 - 110
Sulfate	98.4	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100186

Included Lab Sample IDs: 2182818

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99861

Included Lab Sample IDs: 2182819, 2182820, 2182823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.2	96.6	P/P	90 - 110
O-Phosphate-P	96.6	96.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99865

Included Lab Sample IDs: 2182815, 2182816, 2182821

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

Reference Method: SM 2120 B-2011

Run ID: A99866

Included Lab Sample IDs: 2182815, 2182816, 2182821

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99878
Included Lab Sample IDs: 2182829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.7	85.5	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A99901
Included Lab Sample IDs: 2182830, 2182831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	103	P/P	90 - 110
Barium	103	102	P/P	90 - 110
Calcium	101	102	P/P	90 - 110
Calcium	101	101	P/P	90 - 110
Iron	100	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	99.1	99.5	P/P	90 - 110
Potassium	99.3	99.6	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	99.5	100	P/P	90 - 110
Zinc	102	104	P/P	90 - 110
Zinc	104	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A99908
Included Lab Sample IDs: 2182817, 2182818, 2182822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A99910
Included Lab Sample IDs: 2182817, 2182818, 2182822

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A99923
Included Lab Sample IDs: 2182830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	98.8	P/P	90 - 110
Antimony	96.4	96.0	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Boron	103	102	P/P	90 - 110
Cadmium	101	99.3	P/P	90 - 110
Lead	99.3	99.4	P/P	90 - 110
Nickel	99.8	98.6	P/P	90 - 110
Selenium	100	99.7	P/P	90 - 110
Silver	98.8	98.2	P/P	90 - 110
Thallium	98.5	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99933
Included Lab Sample IDs: 2182829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	70.5	68.1	P/P	60 - 160
Endothall	99.7	98.3	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A99934
Included Lab Sample IDs: 2182829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.5	83.7	P/P	60 - 160
Glufosinate	106	101	P/P	60 - 160
Glyphosate	101	98.7	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99951
Included Lab Sample IDs: 2182817, 2182818, 2182822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A99954
Included Lab Sample IDs: 2182817, 2182818, 2182822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A99965
Included Lab Sample IDs: 2182815, 2182816, 2182821

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A99979
Included Lab Sample IDs: 2182830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	94.4	93.9	P/P	90 - 110
Copper	95.3	95.4	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A99981
Included Lab Sample IDs: 2182829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	126	117	P/P	50 - 150
Acetaminophen	102	111	P/P	60 - 160
Acetamiprid	118	119	P/P	50 - 150
Afidopyropen	104	106	P/P	50 - 150
Bentazon	107	101	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A99981
 Included Lab Sample IDs: 2182829

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Benzovindiflupyr	112	103	P/P	50 - 150
Carbamazepine	112	112	P/P	60 - 150
Clothianidin	109	105	P/P	60 - 150
Dinotefuran	108	106	P/P	50 - 150
Diuron	113	118	P/P	60 - 160
Fenuron	111	111	P/P	60 - 150
Fluridone	113	110	P/P	60 - 160
Hydrocodone	113	114	P/P	60 - 150
Ibuprofen	83.4	74.6	P/P	50 - 160
Imazapyr	123	130	P/P	50 - 150
Imidacloprid	101	103	P/P	60 - 150
Linuron	108	107	P/P	60 - 150
Mandestrobin	121	118	P/P	50 - 150
MCPD	121	112	P/P	50 - 150
Naproxen	122	125	P/P	50 - 160
Primidone	105	93.7	P/P	60 - 150
Pyraclostrobin	124	117	P/P	60 - 150
Thiamethoxam	105	97.5	P/P	50 - 150
Tolfenpyrad	122	110	P/P	60 - 150
Triclopyr	105	112	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A99998
 Included Lab Sample IDs: 2182822

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A99999
 Included Lab Sample IDs: 2182831

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.2	97.7	P/P	90 - 110
Antimony	100	98.7	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Boron	94.7	97.1	P/P	90 - 110
Cadmium	100	98.6	P/P	90 - 110
Chromium	99.3	100	P/P	90 - 110
Copper	100	102	P/P	90 - 110
Lead	96.6	96.0	P/P	90 - 110
Nickel	101	100	P/P	90 - 110
Selenium	102	100	P/P	90 - 110
Silver	98.3	96.6	P/P	90 - 110
Thallium	97.0	97.5	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					4.35	
	Turbidity					5.83	
EPA 200.7 Rev. 4.4	Barium	104	106	105	106		1.49
	Calcium	109	108	103	107		4.00
	Iron	106	105	101	105		3.98
	Magnesium	107	107	103	107		3.85
	Potassium	104	108	104	107		2.31
	Sodium	99.6	102	102	103		0.426
	Zinc	106	108	106	107		1.57
EPA 200.8 Rev. 5.4	Aluminum	96.9	99.9	97.1	98.5		2.71
	Antimony	96.9	96.1	95.7	95.4		0.463
	Arsenic	102	101	101	101		0.200
	Boron	101	101	97.9	101		2.64
	Cadmium	101	99.7	99.2	99.6		0.528
	Chromium	95.5	97.0	96.0	98.5		0.990
	Copper	95.6	96.8	95.8	98.3		1.06
	Lead	98.3	98.2	97.5	99.2		0.782
	Nickel	98.6	99.7	97.9	97.5		1.81
	Selenium	99.2	98.1	97.5	95.6		0.662
	Silver	100	98.1	98.9	98.6		0.272
	Thallium	101	101	102	102		0.838
EPA 300.0 Rev. 2.1	Chloride	96.8	96.6	96.2		1.02	
	Sulfate	95.9	95.0	95.4			
EPA 350.1 Rev. 2.0	Ammonia-N	100	103	102			0.636
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.2	94.4			1.49
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.5	99.0			0.279
EPA 365.1 Rev. 2.0	Total-P	105	107	108			0.567
	Total-P	101	106	97.3			7.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	98.4	99.5			1.11
	O-Phosphate-P	97.0	95.4	96.2			0.835
EPA 8321B	2,4-D	104	117	102			13.5
	Acesulfame K	79.0	37.9	38.4			1.19
	Acetaminophen	62.1	69.7	77.9			11.1
	Acetamiprid	76.1	66.7	66.9			0.416
	Afidopyropen	59.3	68.8	68.0			1.16
	AMPA	83.8	65.0	61.5			3.25
	Bentazon	51.4	44.0	41.1			3.25
	Benzovindiflupyr	61.7	70.8	65.0			8.44
	Carbamazepine	61.6	52.3	53.9			3.16
	Clothianidin	77.9	61.9	66.0			6.53
	Dinotefuran	85.6	73.1	76.9			5.16
	Diuron	51.4	45.6	49.5			8.30
	Endothall	102	101	106			4.87
	Fenuron	88.8	70.2	73.3			4.36
	Fluridone	79.7	89.5	82.3			5.24
	Glufosinate	96.8	81.6	76.2			6.88
	Glyphosate	92.2	83.5	73.4			9.96
	Hydrocodone	73.7	57.4	62.3			8.22
	Ibuprofen	66.1	71.6	63.0			12.8
	Imazapyr	95.9	98.9	99.6			0.477
	Imidacloprid	93.7	114	120			5.22
	Linuron	57.5	61.9	58.7			5.26
	Mandestrobin	66.9	74.5	73.2			1.66
	MCPP	115	121	115			4.93

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	71.3	68.9	73.0		5.86
	Primidone	76.7	80.6	75.3		6.87
	Pyraclostrobin	68.6	77.3	75.0		3.08
	Sucralose	84.9	60.3	68.1		12.0
	Thiamethoxam	89.4	79.7	84.7		6.05
	Tolfenpyrad	56.2	47.5	47.4		0.181
	Triclopyr	92.0	103	89.1		14.1
SM 2120 B-2011	Color (true)	101			0.641	
	Color (true)	100			3.70	
SM 2320 B-2011	Total Alkalinity	102			1.87	
SM 2540 C-2011	TDS				7.84	
	TDS				3.45	
SM 4500 F-C-2011	Fluoride	98.0	100	100		0.0
SM 5310 B-2011	Organic Carbon	98.7	97.2	97.2		0.0

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2182815, 2182816, 2182821
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2182830, 2182831
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2182830, 2182831
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2182815, 2182816, 2182821
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2182815, 2182816, 2182821
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2182817, 2182818, 2182822
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2182817, 2182818, 2182822
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2182817, 2182818, 2182822
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2182817, 2182818, 2182822
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2182819, 2182820, 2182823
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2182829
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2182829
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2182815, 2182816, 2182821
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2182815, 2182816, 2182821
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2182830, 2182831
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2182815, 2182816, 2182821
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2182815, 2182816, 2182821
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2182815, 2182816, 2182821
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2182817, 2182818, 2182822

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	07/14/2020			07/14/2020 15:46	Yen Ta	2182815, 2182816, 2182821
EPA 200.7 Rev. 4.4	07/14/2020	07/14/2020 16:10	Elliott D. Healy	07/15/2020 15:28	Betina Topolski	2182831
	07/14/2020	07/14/2020 16:10	Elliott D. Healy	07/15/2020 19:07	Betina Topolski	2182830
EPA 200.8 Rev. 5.4	07/14/2020	07/14/2020 16:10	Elliott D. Healy	07/17/2020 01:09	Alexander Thompson	2182830
	07/14/2020	07/14/2020 16:10	Elliott D. Healy	07/17/2020 18:08	Alexander Thompson	2182830
	07/14/2020	07/14/2020 16:10	Elliott D. Healy	07/21/2020 15:55	Alexander Thompson	2182831
EPA 300.0 Rev. 2.1	07/14/2020			07/21/2020 17:01	Julia Storbeck	2182815
	07/14/2020			07/21/2020 17:13	Julia Storbeck	2182816
	07/14/2020			07/21/2020 17:25	Julia Storbeck	2182821
EPA 350.1 Rev. 2.0	07/14/2020			07/18/2020 11:16	Ping Hua	2182818
	07/14/2020			07/18/2020 11:20	Ping Hua	2182817
	07/14/2020			07/18/2020 11:22	Ping Hua	2182822
EPA 351.2 Rev. 2.0	07/14/2020	07/16/2020 09:45	Sima Feizi	07/17/2020 15:43	Jhamieka S. Greenwood	2182817
	07/14/2020	07/16/2020 09:45	Sima Feizi	07/17/2020 15:44	Jhamieka S. Greenwood	2182818
	07/14/2020	07/16/2020 09:45	Sima Feizi	07/17/2020 15:46	Jhamieka S. Greenwood	2182822
EPA 353.2 Rev. 2.0	07/14/2020			07/16/2020 10:33	Beverly Y. Sanders	2182817
	07/14/2020			07/16/2020 10:34	Beverly Y. Sanders	2182818
	07/14/2020			07/16/2020 10:36	Beverly Y. Sanders	2182822
EPA 365.1 Rev. 2.0	07/14/2020	07/20/2020 13:21	Yen Ta	07/21/2020 09:51	Lipi Saha	2182822
	07/14/2020	07/20/2020 13:21	Yen Ta	07/22/2020 09:20	Lipi Saha	2182817
	07/14/2020	07/28/2020 10:00	Lipi Saha	07/30/2020 12:06	Benjamin T. Nordmann	2182818
EPA 365.1 Rev. 2.0 dissolved	07/14/2020			07/14/2020 15:25	Carlos Miranda	2182819
	07/14/2020			07/14/2020 15:26	Carlos Miranda	2182820
	07/14/2020			07/14/2020 15:36	Carlos Miranda	2182823
EPA 8321B	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 02:58	Rebecca Ware	2182829
	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 13:10	Rebecca Ware	2182829
	07/14/2020	07/14/2020 15:15	Rebecca Ware	07/15/2020 17:14	Rebecca Ware	2182829
	07/14/2020	07/20/2020 08:45	Hoor Shaik	07/21/2020 05:45	Juyoung Kim	2182829
SM 2120 B-2011	07/14/2020			07/14/2020 16:35	Benjamin T. Nordmann	2182816
	07/14/2020			07/14/2020 16:39	Benjamin T. Nordmann	2182815
	07/14/2020			07/14/2020 16:40	Benjamin T. Nordmann	2182821
SM 2320 B-2011	07/14/2020			07/21/2020 19:25	Dale L. Simmons	2182815
	07/14/2020			07/21/2020 19:31	Dale L. Simmons	2182816
	07/14/2020			07/21/2020 19:36	Dale L. Simmons	2182821
SM 2340B	07/14/2020			07/15/2020 15:28	Betina Topolski	2182831
	07/14/2020			07/15/2020 19:07	Betina Topolski	2182830
SM 2540 C-2011	07/14/2020			07/15/2020 15:29	Yijie Li	2182815, 2182816, 2182821
SM 2540 D-2011	07/14/2020			07/15/2020 15:29	Yijie Li	2182815, 2182816, 2182821
SM 4500 F-C-2011	07/14/2020			07/18/2020 06:08	Samantha Davila	2182815
	07/14/2020			07/18/2020 06:17	Samantha Davila	2182816

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	07/14/2020			07/18/2020 06:25	Samantha Davila	2182821
SM 5310 B-2011	07/14/2020			07/16/2020 02:36	David Boose	2182817
	07/14/2020			07/16/2020 02:48	David Boose	2182818
	07/14/2020			07/16/2020 03:01	David Boose	2182822