

Chemical Analysis Report

SO-DIST-2019-07-16-01

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

Event Description: **2019 SMP : LaBelle-ish**

Request ID: **RQ-2019-07-15-30**

Customer: **SO-DIST**

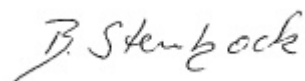
Project ID: **SMP**

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Date Certified: 06-AUG-2019 17:49



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: BeeBranch@LoblollyBayRd

Collection Date/Time: 07/15/2019 09:45

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103065	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P367296	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P367480	
		Sulfate	4.2		mg SO4/L	P367482	
	SM 2120 B	Color (true)	470		PCU	P367349	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P367555	
	SM 2540 C-97	TDS	124		mg/L	P367548	
	SM 2540 D-97	TSS	2	I	mg/L	P367575	
	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P367560	
2103066	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P367772	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.8		mg N/L	P367623	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P367382	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P367740	
	SM 5310 B-00	Organic Carbon	40		mg C/L	P367588	
2103067	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.081		mg P/L	P367306	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: PollywogCreek@SR78

Collection Date/Time: 07/15/2019 10:20

Field ID: G3SD0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103091	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367428	
		2,4-D	0.16		ug/L	P367331	MS
		AMPA**	0.10	U	ug/L	P367428	
		Sucralose**	0.028	I	ug/L	P367428	
		Acetaminophen**	0.0080	U	ug/L	P367331	
		Endothall**	0.25	U	ug/L	P367428	
		Acetamiprid**	0.0020	UJ	ug/L	P367331	
		Glufosinate**	0.10	U	ug/L	P367428	
		Glyphosate**	0.10	U	ug/L	P367428	
		Afidopyropen**	0.0020	UJ	ug/L	P367331	
		Bentazon	8.0E-04	U	ug/L	P367331	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367331	
		Carbamazepine**	8.0E-04	U	ug/L	P367331	
		Clothianidin**	0.0020	UJ	ug/L	P367331	
		Dinotefuran**	0.0020	UJ	ug/L	P367331	
		Diuron	0.0020	U	ug/L	P367331	
		Fenuron	0.016	U	ug/L	P367331	
		Fluridone**	8.0E-04	U	ug/L	P367331	
		Imazapyr**	0.0040	U	ug/L	P367331	
		Hydrocodone**	0.0020	U	ug/L	P367331	
		Ibuprofen**	0.020	U	ug/L	P367331	
		Imidacloprid	0.0037	I	ug/L	P367331	
		Linuron	0.0040	U	ug/L	P367331	
		Mandestrobin**	0.0020	UJ	ug/L	P367331	
		MCPP	0.0020	U	ug/L	P367331	MS
		Naproxen**	0.0080	U	ug/L	P367331	
		Primidone**	0.0040	U	ug/L	P367331	
		Pyraclostrobin**	0.0020	U	ug/L	P367331	
		Thiamethoxam**	0.0020	UJ	ug/L	P367331	MS
		Tolfenpyrad**	0.0020	UJ	ug/L	P367331	
		Triclopyr**	0.0040	U	ug/L	P367331	MS

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes is not available due to high concentration of parameter in the spiked sample.

Sample Location: OK BRANCH @ EUCALYPTUS

Collection Date/Time: 07/15/2019 11:00

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103068	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P367296	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P367480	
		Sulfate	23		mg SO4/L	P367482	
	SM 2120 B	Color (true)	110		PCU	P367350	
	SM 2320 B-97	Total Alkalinity	214		mg CaCO3/L	P367673	
	SM 2540 C-97	TDS	409	A	mg/L	P367548	
	SM 2540 D-97	TSS	6	IA	mg/L	P367575	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P367674	
2103069	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P367772	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P367623	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.073		mg N/L	P367382	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P367696	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P367588	
2103070	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P367308	
2103092	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367428	
		2,4-D	0.30		ug/L	P367331	MS
		AMPA**	0.34	I	ug/L	P367428	
		Sucralose**	0.37		ug/L	P367428	
		Acetaminophen**	0.0080	U	ug/L	P367331	
		Endothall**	0.25	U	ug/L	P367428	
		Acetamiprid**	0.0020	UJ	ug/L	P367331	
		Glufosinate**	0.10	U	ug/L	P367428	
		Glyphosate**	0.60		ug/L	P367428	
		Afidopyropen**	0.0020	UJ	ug/L	P367331	
		Bentazon	0.0045		ug/L	P367331	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367331	
		Carbamazepine**	0.0051		ug/L	P367331	
		Clothianidin**	0.0020	UJ	ug/L	P367331	
		Dinotefuran**	0.0020	UJ	ug/L	P367331	
		Diuron	0.0020	U	ug/L	P367331	
		Fenuron	0.016	U	ug/L	P367331	
		Fluridone**	0.052		ug/L	P367331	
		Imazapyr**	0.018		ug/L	P367331	
		Hydrocodone**	0.0020	U	ug/L	P367331	
		Ibuprofen**	0.020	U	ug/L	P367331	
		Imidacloprid	0.0053	I	ug/L	P367331	
		Linuron	0.0040	U	ug/L	P367331	
		Mandestrobin**	0.0020	UJ	ug/L	P367331	
		MCP	0.0028	I	ug/L	P367331	MS
		Naproxen**	0.0080	U	ug/L	P367331	
		Primidone**	0.0040	U	ug/L	P367331	
		Pyraclostrobin**	0.0020	U	ug/L	P367331	
		Thiamethoxam**	0.0020	UJ	ug/L	P367331	MS

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103092	EPA 8321B	Tolfenpyrad**	0.0020	UJ	ug/L	P367331	
		Triclopyr**	0.0040	U	ug/L	P367331	MS
2103094	EPA 200.7 Rev. 4.4	Barium	18.7		ug/L	P367369	
		Calcium	84.3		mg/L	P367369	
		Iron	1.05E+03		ug/L	P367369	
		Magnesium	6.32		mg/L	P367369	
		Potassium	4.2		mg/L	P367369	
		Sodium	53.7		mg/L	P367369	
		Zinc	5.0	U	ug/L	P367369	
	EPA 200.8 Rev. 5.4	Aluminum	49		ug/L	P367369	
		Antimony	0.17	I	ug/L	P367369	
		Arsenic	1.88		ug/L	P367369	
		Boron**	76.0		ug/L	P367369	
		Cadmium	0.020	U	ug/L	P367369	
		Chromium	0.61	I	ug/L	P367369	
		Copper	0.40	U	ug/L	P367369	
		Lead	0.20	U	ug/L	P367369	
		Nickel	0.54	I	ug/L	P367369	
		Selenium	0.20	U	ug/L	P367369	
		Silver	0.010	U	ug/L	P367369	
		Thallium	0.10	U	ug/L	P367369	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes is not available due to high concentration of parameter in the spiked sample.

Sample Location: Robert's Canal @SR80

Collection Date/Time: 07/15/2019 11:50

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103071	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P367296	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P367480	
		Sulfate	2.6		mg SO4/L	P367482	
	SM 2120 B	Color (true)	450		PCU	P367350	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P367673	
	SM 2540 C-97	TDS	181		mg/L	P367548	
	SM 2540 D-97	TSS	6	I	mg/L	P367575	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P367674	
2103072	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P367772	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P367623	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P367383	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P367696	
	SM 5310 B-00	Organic Carbon	35		mg C/L	P367588	
2103073	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P367308	
2103093	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P367428	
		2,4-D	0.42		ug/L	P367331	MS
		AMPA**	1.0		ug/L	P367428	
		Sucralose**	0.010	U	ug/L	P367428	
		Acetaminophen**	0.0080	U	ug/L	P367331	
		Endothall**	0.25	U	ug/L	P367428	
		Acetamiprid**	0.0020	UJ	ug/L	P367331	
		Glufosinate**	0.10	U	ug/L	P367428	
		Glyphosate**	5.9		ug/L	P367428	
		Afidopyrophen**	0.0020	UJ	ug/L	P367331	
		Bentazon	8.0E-04	U	ug/L	P367331	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P367331	
		Carbamazepine**	8.0E-04	U	ug/L	P367331	
		Clothianidin**	0.017	J	ug/L	P367331	
		Dinotefuran**	0.0020	UJ	ug/L	P367331	
		Diuron	0.0020	U	ug/L	P367331	
		Fenuron	0.016	U	ug/L	P367331	
		Fluridone**	0.0011	I	ug/L	P367331	
		Imazapyr**	2.5		ug/L	P367331	
		Hydrocodone**	0.0020	U	ug/L	P367331	
		Ibuprofen**	0.020	U	ug/L	P367331	
		Imidacloprid	0.075		ug/L	P367331	
		Linuron	0.0040	U	ug/L	P367331	
		Mandestrobin**	0.0020	UJ	ug/L	P367331	
		MCP	0.0020	U	ug/L	P367331	MS
		Naproxen**	0.0080	U	ug/L	P367331	
		Primidone**	0.0040	U	ug/L	P367331	
		Pyraclostrobin**	0.0020	U	ug/L	P367331	
		Thiamethoxam**	0.072	J	ug/L	P367331	MS

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103093	EPA 8321B	Tolfenpyrad**	0.0020	UJ	ug/L	P367331	
		Triclopyr**	0.0040	U	ug/L	P367331	MS

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes is not available due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367296

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367369

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: P367369

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: P367480

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367482

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367772

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367623

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367382

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367383

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367696

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367740

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367306

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367308

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

Reference Method: EPA 8321B
Batch ID: P367331

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P367331

Component	Result	Code	Units
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: EPA 8321B
Batch ID: P367428

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P367349

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P367350

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P367555

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

Reference Method: SM 2320 B-97
Batch ID: P367673

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P367548

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P367575

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P367560

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P367674

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P367588

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: P367369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.8		P	85 - 115
Calcium	99.0		P	85 - 115
Iron	99.1		P	85 - 115
Magnesium	97.5		P	85 - 115
Potassium	101		P	85 - 115
Sodium	105		P	85 - 115
Zinc	97.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.2		P	85 - 115
Antimony	98.1		P	85 - 115
Arsenic	101		P	85 - 115
Boron	100		P	85 - 115
Cadmium	99.8		P	85 - 115
Chromium	97.0		P	85 - 115
Copper	101		P	85 - 115
Lead	98.5		P	85 - 115
Nickel	102		P	85 - 115
Selenium	97.7		P	85 - 115
Silver	104		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367480

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367382

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367383

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367696

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367740

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367306

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367308

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

Reference Method: EPA 8321B
Batch ID: P367331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	149		P	40 - 150
Acetaminophen	92.8		P	30 - 150
Acetamiprid	105		P	40 - 150
Afidopyropen	97.4		P	40 - 150
Bentazon	102		P	30 - 150
Benzovindiflupyr	95.9		P	40 - 150
Carbamazepine	111		P	40 - 150
Clothianidin	110		P	40 - 150
Dinotefuran	114		P	40 - 150
Diuron	101		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	105		P	40 - 150
Hydrocodone	107		P	40 - 150
Ibuprofen	90.5		P	30 - 150
Imazapyr	107		P	40 - 150
Imidacloprid	106		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P367331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Linuron	93.7		P	40 - 150
Mandestrobin	109		P	40 - 150
MCP	148		P	40 - 150
Naproxen	115		P	40 - 150
Primidone	105		P	40 - 150
Pyraclostrobin	100		P	30 - 150
Thiamethoxam	114		P	40 - 150
Tolfenpyrad	64.1		P	40 - 150
Triclopyr	139		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367428

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	103		P	40 - 150
AMPA	97.1		P	40 - 150
Endothall	88.6		P	40 - 150
Glufosinate	82.3		P	40 - 150
Glyphosate	90.4		P	40 - 140
Sucralose	91.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P367349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P367350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P367555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P367673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P367560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P367674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P367588

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102932	Barium	96.9	99.4	P/P	80 - 120
2102932	Calcium	95.7		P	80 - 120
2102932	Iron	98.6	101	P/P	80 - 120
2102932	Magnesium	96.3		P	80 - 120
2102932	Potassium	103	108	P/P	80 - 120
2102932	Sodium	98.4	103	P/P	80 - 120
2102932	Zinc	95.6	98.2	P/P	80 - 120
2103154	Barium	101		P	80 - 120
2103154	Calcium	99.2		P	80 - 120
2103154	Iron	103		P	80 - 120
2103154	Magnesium	99.5		P	80 - 120
2103154	Potassium	99.5		P	80 - 120
2103154	Sodium	100		P	80 - 120
2103154	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102932	Aluminum	95.4	96.5	P/P	80 - 120
2102932	Antimony	98.3	101	P/P	80 - 120
2102932	Arsenic	100	101	P/P	80 - 120
2102932	Boron	98.0	97.9	P/P	80 - 120
2102932	Cadmium	101	102	P/P	80 - 120
2102932	Chromium	95.9	97.1	P/P	80 - 120
2102932	Copper	95.6	95.9	P/P	80 - 120
2102932	Lead	97.0	98.7	P/P	80 - 120
2102932	Nickel	98.9	100	P/P	80 - 120
2102932	Selenium	98.2	100	P/P	80 - 120
2102932	Silver	104	105	P/P	80 - 120
2102932	Thallium	102	104	P/P	80 - 120
2103154	Aluminum	101		P	80 - 120
2103154	Antimony	101		P	80 - 120
2103154	Arsenic	103		P	80 - 120
2103154	Boron	104		P	80 - 120
2103154	Cadmium	102		P	80 - 120
2103154	Chromium	99.9		P	80 - 120
2103154	Copper	99.4		P	80 - 120
2103154	Lead	102		P	80 - 120
2103154	Nickel	103		P	80 - 120
2103154	Selenium	100		P	80 - 120
2103154	Silver	107		P	80 - 120
2103154	Thallium	106		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103009	Chloride	98.4		P	90 - 110
2103289	Chloride	99.3		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103009	Sulfate	99.9		P	90 - 110
2103289	Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103150	Ammonia-N	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102944	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103072	NO2NO3-N	98.2	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103150	Total-P	97.7	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104520	Total-P	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103015	O-Phosphate-P	98.4	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103151	O-Phosphate-P	94.3	94.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P367331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103044	2,4-D	171	151	F/F	40 - 150
2103044	Acetaminophen	104	94.4	P/P	30 - 150
2103044	Acetamiprid	116	100	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P367331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103044	Afidopyropen	111	93.7	P/P	40 - 150
2103044	Benzovindiflupyr	105	92.8	P/P	40 - 150
2103044	Carbamazepine	94.3	85.5	P/P	40 - 150
2103044	Clothianidin	112	98.2	P/P	40 - 150
2103044	Dinotefuran	136	123	P/P	40 - 150
2103044	Diuron	91.9	80.9	P/P	40 - 150
2103044	Fenuron	92.9	77.6	P/P	40 - 150
2103044	Fluridone	96.9	59.0	P/P	40 - 150
2103044	Hydrocodone	111	95.9	P/P	40 - 150
2103044	Ibuprofen	102	93.8	P/P	30 - 150
2103044	Linuron	88.8	84.2	P/P	40 - 150
2103044	Mandestrobin	112	102	P/P	40 - 150
2103044	MCP	184	165	F/F	40 - 150
2103044	Naproxen	102	109	P/P	40 - 150
2103044	Primidone	110	100	P/P	40 - 150
2103044	Pyraclostrobin	112	96.8	P/P	30 - 150
2103044	Thiamethoxam	159	137	F/P	40 - 150
2103044	Tolfenpyrad	78.1	75.3	P/P	40 - 150
2103044	Triclopyr	155	162	F/F	30 - 150

Reference Method: EPA 8321B
 Batch ID: P367428

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2103043	Acesulfame K	112	143	P/P	40 - 150
2103043	AMPA	95.3	96.6	P/P	40 - 150
2103043	Endothall	96.2	109	P/P	40 - 150
2103043	Glufosinate	90.9	95.6	P/P	40 - 150
2103043	Glyphosate	95.7	92.8	P/P	40 - 140
2103043	Sucralose	88.3	88.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P367560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102699	Fluoride	96.0	96.0	P/P	89 - 106

Reference Method: SM 4500 F-C-97
 Batch ID: P367674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2100961	Fluoride	106	105	P/P	89 - 106

Reference Method: SM 5310 B-00
 Batch ID: P367588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2102928	Organic Carbon	100	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102975	Turbidity	2.92	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P367369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102932	Barium	2.41	Spike	P	0 - 20
2102932	Calcium	3.74	Spike	P	0 - 20
2102932	Iron	2.23	Spike	P	0 - 20
2102932	Magnesium	2.06	Spike	P	0 - 20
2102932	Potassium	3.64	Spike	P	0 - 20
2102932	Sodium	2.39	Spike	P	0 - 20
2102932	Zinc	2.64	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P367369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102932	Aluminum	1.09	Spike	P	0 - 20
2102932	Antimony	2.43	Spike	P	0 - 20
2102932	Arsenic	0.507	Spike	P	0 - 20
2102932	Boron	0.0782	Spike	P	0 - 20
2102932	Cadmium	1.11	Spike	P	0 - 20
2102932	Chromium	1.19	Spike	P	0 - 20
2102932	Copper	0.264	Spike	P	0 - 20
2102932	Lead	1.68	Spike	P	0 - 20
2102932	Nickel	1.59	Spike	P	0 - 20
2102932	Selenium	2.23	Spike	P	0 - 20
2102932	Silver	1.35	Spike	P	0 - 20
2102932	Thallium	2.14	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103009	Chloride	0.140	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103009	Sulfate	1.86	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P367772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103150	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P367623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103022	Kjeldahl Nitrogen	0.791	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102944	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103072	NO2NO3-N	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103150	Total-P	2.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104520	Total-P	4.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103015	O-Phosphate-P	0.0505	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103151	O-Phosphate-P	0.106	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P367331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103044	2,4-D	11.8	Spike	P	0 - 30
2103044	Acetaminophen	9.75	Spike	P	0 - 30
2103044	Acetamiprid	14.6	Spike	P	0 - 30
2103044	Afidopyropen	17.0	Spike	P	0 - 30
2103044	Bentazon	17.8	Spike	P	0 - 30
2103044	Benzovindiflupyr	12.6	Spike	P	0 - 30
2103044	Carbamazepine	8.07	Spike	P	0 - 30
2103044	Clothianidin	10.1	Spike	P	0 - 30
2103044	Dinotefuran	10.4	Spike	P	0 - 30
2103044	Diuron	12.8	Spike	P	0 - 30
2103044	Fenuron	18.0	Spike	P	0 - 30
2103044	Fluridone	10.8	Spike	P	0 - 30
2103044	Hydrocodone	14.2	Spike	P	0 - 30
2103044	Ibuprofen	8.33	Spike	P	0 - 30
2103044	Imazapyr	12.7	Spike	P	0 - 30
2103044	Imidacloprid	4.60	Spike	P	0 - 30
2103044	Linuron	5.33	Spike	P	0 - 30
2103044	Mandestrobin	9.07	Spike	P	0 - 30
2103044	MCPP	9.78	Spike	P	0 - 30
2103044	Naproxen	7.17	Spike	P	0 - 30
2103044	Primidone	8.02	Spike	P	0 - 30
2103044	Pyraclostrobin	14.3	Spike	P	0 - 30
2103044	Thiamethoxam	12.7	Spike	P	0 - 30
2103044	Tolfenpyrad	3.66	Spike	P	0 - 30
2103044	Triclopyr	4.60	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P367428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103043	Acesulfame K	24.9	Spike	P	0 - 30
2103043	AMPA	1.34	Spike	P	0 - 30
2103043	Endothall	12.8	Spike	P	0 - 30
2103043	Glufosinate	4.97	Spike	P	0 - 30
2103043	Glyphosate	3.09	Spike	P	0 - 30
2103043	Sucralose	0.211	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P367349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102961	Color (true)	4.45	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P367350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103289	Color (true)	0.390	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P367555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102699	Total Alkalinity	0.0798	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P367673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Total Alkalinity	1.46	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P367548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103068	TDS	6.85	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P367560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102699	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P367674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2100961	Fluoride	0.511	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P367588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2102928	Organic Carbon	0.214	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2103091
Field Sample ID: G3SD0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	155	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.4	P	30 - 160
EPA 8321B	Diuron-d6	62.6	P	30 - 160
EPA 8321B	Endothall-d6	77.8	P	30 - 160
EPA 8321B	Endothall-d6	77.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	56.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	127	P	30 - 160
EPA 8321B	Primidone-d5	76.1	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Lab Sample ID: 2103092
Field Sample ID: G3SD0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.8	P	30 - 160
EPA 8321B	Diuron-d6	81.8	P	30 - 160
EPA 8321B	Endothall-d6	69.8	P	30 - 160
EPA 8321B	Endothall-d6	69.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	46.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	46.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	120	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	94.2	P	30 - 160
EPA 8321B	Sucralose-d6	94.2	P	30 - 160

Lab Sample ID: 2103093
Field Sample ID: G3SD0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	125	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.2	P	30 - 160
EPA 8321B	Diuron-d6	67.7	P	30 - 160
EPA 8321B	Endothall-d6	81.0	P	30 - 160
EPA 8321B	Endothall-d6	81.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	63.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	116	P	30 - 160
EPA 8321B	Primidone-d5	79.6	P	30 - 160
EPA 8321B	Sucralose-d6	129	P	30 - 160
EPA 8321B	Sucralose-d6	129	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A92795

Included Lab Sample IDs: 2103065, 2103068, 2103071

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92796

Included Lab Sample IDs: 2103065, 2103068, 2103071

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92797

Included Lab Sample IDs: 2103067, 2103070, 2103073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	96.9	P/P	90 - 110
O-Phosphate-P	99.2	98.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A92813

Included Lab Sample IDs: 2103065, 2103068, 2103071

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	103	P/P	90 - 115
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92833

Included Lab Sample IDs: 2103066, 2103069, 2103072

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

Reference Method: EPA 8321B

Run ID: A92848

Included Lab Sample IDs: 2103091, 2103092, 2103093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.7	97.3	P/P	50 - 150
Acetaminophen	109	113	P/P	60 - 160
Acetamiprid	117	120	P/P	50 - 150
Afidopyropen	124	124	P/P	50 - 150
Bentazon	100	94.2	P/P	50 - 160
Benzovindiflupyr	126	128	P/P	50 - 150
Carbamazepine	124	126	P/P	60 - 150
Clothianidin	139	127	P/P	60 - 150
Dinotefuran	129	128	P/P	50 - 150
Diuron	130	129	P/P	60 - 150
Fenuron	123	128	P/P	60 - 150
Fluridone	127	127	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A92848

Included Lab Sample IDs: 2103091, 2103092, 2103093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	116	113	P/P	60 - 150
Ibuprofen	104	107	P/P	50 - 160
Imazapyr	94.2	102	P/P	50 - 150
Imazapyr	99.4	103	P/P	50 - 150
Imidacloprid	105	106	P/P	60 - 150
Linuron	126	125	P/P	60 - 150
Mandestrobin	127	131	P/P	50 - 150
MCPP	112	113	P/P	50 - 150
Naproxen	128	120	P/P	50 - 160
Primidone	122	121	P/P	60 - 150
Pyraclostrobin	125	129	P/P	60 - 150
Thiamethoxam	117	119	P/P	50 - 150
Tolfenpyrad	116	109	P/P	60 - 150
Triclopyr	95.5	96.8	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A92881

Included Lab Sample IDs: 2103094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	101	P/P	90 - 110
Calcium	98.0	98.3	P/P	90 - 110
Iron	97.8	97.9	P/P	90 - 110
Magnesium	98.1	98.3	P/P	90 - 110
Potassium	97.2	97.2	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	99.8	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A92887

Included Lab Sample IDs: 2103065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92887

Included Lab Sample IDs: 2103065

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

Reference Method: SM 5310 B-00

Run ID: A92899

Included Lab Sample IDs: 2103066, 2103069, 2103072

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A92919

Included Lab Sample IDs: 2103068, 2103071

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92919

Included Lab Sample IDs: 2103068, 2103071

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92926

Included Lab Sample IDs: 2103069, 2103072

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

Reference Method: EPA 8321B

Run ID: A92932

Included Lab Sample IDs: 2103091, 2103092, 2103093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	69.7	79.2	P/P	60 - 160
Endothall	98.5	112	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92936

Included Lab Sample IDs: 2103091, 2103092, 2103093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.8	90.5	P/P	60 - 160
Glufosinate	90.8	81.5	P/P	60 - 160
Glyphosate	92.3	89.7	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92938

Included Lab Sample IDs: 2103066, 2103069, 2103072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92961

Included Lab Sample IDs: 2103066, 2103069, 2103072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	106	P/P	90 - 110
Ammonia-N	106	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92978

Included Lab Sample IDs: 2103066

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93030

Included Lab Sample IDs: 2103094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.4	100	P/P	90 - 110
Antimony	97.0	96.0	P/P	90 - 110
Arsenic	98.6	99.7	P/P	90 - 110
Boron	101	99.7	P/P	90 - 110
Cadmium	99.2	99.5	P/P	90 - 110
Chromium	96.2	100	P/P	90 - 110
Copper	100	102	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Selenium	97.0	99.3	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	98.3	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93069

Included Lab Sample IDs: 2103094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	99.4	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93230

Included Lab Sample IDs: 2103091, 2103092, 2103093

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	89.6	90.0	P/P	60 - 160
Sucralose	93.1	89.6	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.92	
EPA 200.7 Rev. 4.4	Barium	99.8	96.9	99.4	101			2.41
	Calcium	99.0	95.7	99.2				3.74
	Iron	99.1	98.6	101	103			2.23
	Magnesium	97.5	96.3	99.5				2.06
	Potassium	101	103	108	99.5			3.64
	Sodium	105	98.4	103	100			2.39
	Zinc	97.5	95.6	98.2	101			2.64
EPA 200.8 Rev. 5.4	Aluminum	99.2	95.4	96.5	101			1.09
	Antimony	98.1	98.3	101	101			2.43
	Arsenic	101	100	101	103			0.507
	Boron	100	98.0	97.9	104			0.0782
	Cadmium	99.8	101	102	102			1.11
	Chromium	97.0	95.9	97.1	99.9			1.19
	Copper	101	95.6	95.9	99.4			0.264
	Lead	98.5	97.0	98.7	102			1.68
	Nickel	102	98.9	100	103			1.59
	Selenium	97.7	98.2	100	100			2.23
	Silver	104	104	105	107			1.35
	Thallium	102	102	104	106			2.14
EPA 300.0 Rev. 2.1	Chloride	99.0	98.4	99.3			0.140	
	Sulfate	99.6	99.9	99.6			1.86	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	102	105				1.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8						0.791
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.4	98.4				0.0
	NO2NO3-N	102	98.2	96.2				1.80
EPA 365.1 Rev. 2.0	Total-P	102	97.7	99.8				2.03
	Total-P	102	102	107				4.75
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	98.4	98.5				0.0505
	O-Phosphate-P	98.1	94.3	94.2				0.106
EPA 8321B	2,4-D	149	171	151				11.8
	Acesulfame K	103	112	143				24.9
	Acetaminophen	92.8	104	94.4				9.75
	Acetamiprid	105	116	100				14.6
	Afidopyropen	97.4	111	93.7				17.0
	AMPA	97.1	95.3	96.6				1.34
	Bentazon	102						17.8
	Benzovindiflupyr	95.9	105	92.8				12.6
	Carbamazepine	111	94.3	85.5				8.07
	Clothianidin	110	112	98.2				10.1
	Dinotefuran	114	136	123				10.4
	Diuron	101	91.9	80.9				12.8
	Endothall	88.6	96.2	109				12.8
	Fenuron	116	92.9	77.6				18.0
	Fluridone	105	96.9	59.0				10.8
	Glufosinate	82.3	90.9	95.6				4.97
	Glyphosate	90.4	95.7	92.8				3.09
	Hydrocodone	107	111	95.9				14.2
	Ibuprofen	90.5	102	93.8				8.33
	Imazapyr	107						12.7
	Imidacloprid	106						4.60
	Linuron	93.7	88.8	84.2				5.33
	Mandestrobin	109	112	102				9.07
	MCP	148	184	165				9.78

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	115	102	109		7.17
	Primidone	105	110	100		8.02
	Pyraclostrobin	100	112	96.8		14.3
	Sucralose	91.7	88.3	88.2		0.211
	Thiamethoxam	114	159	137		12.7
	Tolfenpyrad	64.1	78.1	75.3		3.66
	Triclopyr	139	155	162		4.60
SM 2120 B	Color (true)	99.4			4.45	
	Color (true)	103			0.390	
SM 2320 B-97	Total Alkalinity	105			0.0798	
	Total Alkalinity	103			1.46	
SM 2540 C-97	TDS				6.85	
SM 4500 F-C-97	Fluoride	96.9	96.0	96.0		0.0
	Fluoride	96.9	106	105		0.511
SM 5310 B-00	Organic Carbon	101	100	99.8		0.214

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2103065, 2103068, 2103071
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2103094
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2103094
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2103065, 2103068, 2103071
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2103065, 2103068, 2103071
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2103066, 2103069, 2103072
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2103066, 2103069, 2103072
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2103066, 2103069, 2103072
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2103066, 2103069, 2103072
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2103067, 2103070, 2103073
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2103091, 2103092, 2103093
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2103091, 2103092, 2103093
SM 2120 B / E31780	True Color measured at 450 nm	2103065, 2103068, 2103071
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2103065, 2103068, 2103071
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2103065, 2103068, 2103071
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2103065, 2103068, 2103071
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2103065, 2103068, 2103071
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2103066, 2103069, 2103072

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	07/16/2019			07/16/2019 16:25	Samantha Davila	2103065, 2103068, 2103071
EPA 200.7 Rev. 4.4	07/16/2019	07/17/2019 14:30	Elliott D. Healy	07/18/2019 17:22	Betina Topolski	2103094
EPA 200.8 Rev. 5.4	07/16/2019	07/17/2019 14:30	Elliott D. Healy	07/25/2019 02:27	Robert K Palmer	2103094
	07/16/2019	07/17/2019 14:30	Elliott D. Healy	07/27/2019 00:22	Robert K Palmer	2103094
EPA 300.0 Rev. 2.1	07/16/2019			07/17/2019 22:35	Jhamieka S. Greenwood	2103065
	07/16/2019			07/17/2019 22:48	Jhamieka S. Greenwood	2103068
	07/16/2019			07/17/2019 23:00	Jhamieka S. Greenwood	2103071
EPA 350.1 Rev. 2.0	07/16/2019			07/23/2019 13:05	Virginia P. Brown	2103066
	07/16/2019			07/23/2019 13:06	Virginia P. Brown	2103069
	07/16/2019			07/23/2019 13:14	Virginia P. Brown	2103072
EPA 351.2 Rev. 2.0	07/16/2019	07/19/2019 12:45	Adrian Shelby	07/22/2019 12:40	Joseph Suarez	2103066
	07/16/2019	07/19/2019 12:45	Adrian Shelby	07/22/2019 12:42	Joseph Suarez	2103069
	07/16/2019	07/19/2019 12:45	Adrian Shelby	07/22/2019 12:43	Joseph Suarez	2103072
EPA 353.2 Rev. 2.0	07/16/2019			07/17/2019 10:14	Beverly Y. Sanders	2103066
	07/16/2019			07/17/2019 10:15	Beverly Y. Sanders	2103069
	07/16/2019			07/17/2019 10:22	Beverly Y. Sanders	2103072
EPA 365.1 Rev. 2.0	07/16/2019	07/19/2019 12:30	Sima Feizi	07/22/2019 09:23	Lipi Saha	2103069
	07/16/2019	07/19/2019 12:30	Sima Feizi	07/22/2019 09:24	Lipi Saha	2103072
	07/16/2019	07/23/2019 11:20	Vijayalakshmi Reddy	07/24/2019 10:23	Lipi Saha	2103066
EPA 365.1 Rev. 2.0 dissolved	07/16/2019			07/16/2019 17:32	Jhamieka S. Greenwood	2103067
	07/16/2019			07/16/2019 18:08	Jhamieka S. Greenwood	2103070
	07/16/2019			07/16/2019 18:14	Jhamieka S. Greenwood	2103073
EPA 8321B	07/16/2019	07/18/2019 10:00	Hoor Shaik	07/19/2019 00:47	Juyoung Kim	2103091
	07/16/2019	07/18/2019 10:00	Hoor Shaik	07/19/2019 01:22	Juyoung Kim	2103092
	07/16/2019	07/18/2019 10:00	Hoor Shaik	07/19/2019 01:56	Juyoung Kim	2103093
	07/16/2019	07/18/2019 10:00	Hoor Shaik	07/19/2019 16:09	Juyoung Kim	2103093
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/18/2019 13:38	Rebecca Ware	2103091
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/18/2019 13:49	Rebecca Ware	2103092
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/18/2019 14:00	Rebecca Ware	2103093
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/19/2019 12:42	Rebecca Ware	2103091
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/19/2019 12:56	Rebecca Ware	2103092
	07/16/2019	07/18/2019 10:15	Rebecca Ware	07/19/2019 13:10	Rebecca Ware	2103093
	07/16/2019	07/18/2019 10:15	Rebecca Ware	08/01/2019 19:58	Rebecca Ware	2103091
	07/16/2019	07/18/2019 10:15	Rebecca Ware	08/01/2019 20:33	Rebecca Ware	2103092
	07/16/2019	07/18/2019 10:15	Rebecca Ware	08/01/2019 20:45	Rebecca Ware	2103093
SM 2120 B	07/16/2019			07/16/2019 17:56	Madeline Funaro	2103068
	07/16/2019			07/16/2019 18:24	Madeline Funaro	2103065
	07/16/2019			07/16/2019 18:25	Madeline Funaro	2103071
SM 2320 B-97	07/16/2019			07/18/2019 20:31	Dale L. Simmons	2103065
	07/16/2019			07/19/2019 18:31	Samantha Davila	2103068

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	07/16/2019			07/19/2019 18:43	Samantha Davila	2103071
SM 2540 C-97	07/16/2019			07/16/2019 21:03	Yijie Li	2103065, 2103068, 2103071
SM 2540 D-97	07/16/2019			07/16/2019 21:03	Yijie Li	2103065, 2103068, 2103071
SM 4500 F-C-97	07/16/2019			07/18/2019 20:31	Dale L. Simmons	2103065
	07/16/2019			07/19/2019 18:31	Samantha Davila	2103068
	07/16/2019			07/19/2019 18:43	Samantha Davila	2103071
	07/16/2019			07/18/2019 20:43	Madeline Funaro	2103066
SM 5310 B-00	07/16/2019			07/18/2019 20:55	Madeline Funaro	2103069
	07/16/2019			07/18/2019 21:07	Madeline Funaro	2103072