

Chemical Analysis Report

SO-DIST-2019-10-03-01

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-2019-09-30-84**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-OCT-2019 13:09



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: 10/02/2019 09:10

Field ID: G3SD0085

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124649	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P371848	
	EPA 300.0 Rev. 2.1	Chloride	56		mg Cl/L	P372382	
		Sulfate	28		mg SO4/L	P372386	
	SM 2120 B	Color (true)	180		PCU	P371854	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	227	A	mg/L	P372429	
	SM 2540 D-97	TSS	15	AJ	mg/L	P372226	RPD
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P372161	
2124650	EPA 350.1 Rev. 2.0	Ammonia-N	0.21		mg N/L	P372141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P371929	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P371949	
2124651	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.090		mg P/L	P371906	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Refer to the narrative for an explanation of QC Codes.

Sample Location: Robert's Canal @SR80

Collection Date/Time: 10/02/2019 12:35

Field ID: FB_10022019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124658	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P371849	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P372382	
		Sulfate	0.20	U	mg SO4/L	P372386	
	SM 2120 B	Color (true)	2.5	U	PCU	P371854	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	15	U	mg/L	P372429	
	SM 2540 D-97	TSS	2	U	mg/L	P372226	RPD
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372161	
2124659	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P372141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P371929	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372038	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P371921	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P371949	
2124660	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371906	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

Sample Location: PollywogCreek@SR78

Collection Date/Time: 10/02/2019 09:40

Field ID: G3SD0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124696	EPA 8321B	2,4-D	0.0020	U	ug/L	P371789	
		Acesulfame K**	0.28	I	ug/L	P371943	
		AMPA**	0.12	I	ug/L	P371943	
		Sucralose**	0.56		ug/L	P371943	
		Acetaminophen**	0.0080	U	ug/L	P371789	
		Acetamiprid**	0.0020	U	ug/L	P371789	
		Endothall**	0.25	U	ug/L	P371943	
		Glufosinate**	0.10	U	ug/L	P371943	
		Glyphosate**	0.10	U	ug/L	P371943	
		Afidopyropen**	0.0020	UJ	ug/L	P371789	
		Bentazon	8.0E-04	U	ug/L	P371789	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371789	
		Carbamazepine**	0.0098		ug/L	P371789	
		Clothianidin**	0.0020	U	ug/L	P371789	
		Dinotefuran**	0.0020	U	ug/L	P371789	
		Diuron	0.0020	U	ug/L	P371789	
		Fenuron	0.016	U	ug/L	P371789	
		Fluridone**	8.0E-04	U	ug/L	P371789	
		Imazapyr**	0.0040	U	ug/L	P371789	
		Hydrocodone**	0.0020	U	ug/L	P371789	
		Ibuprofen**	0.020	U	ug/L	P371789	
		Imidacloprid	0.0093		ug/L	P371789	
		Linuron	0.0040	U	ug/L	P371789	
		Mandestrobin**	0.0020	UJ	ug/L	P371789	
		MCPP	0.0020	U	ug/L	P371789	
		Naproxen**	0.0080	U	ug/L	P371789	
		Primidone**	0.0040	U	ug/L	P371789	
		Pyraclostrobin**	0.0020	U	ug/L	P371789	
		Thiamethoxam**	0.0020	U	ug/L	P371789	
		Tolfenpyrad**	0.0020	U	ug/L	P371789	
		Triclopyr**	0.0040	U	ug/L	P371789	

Ref. Method and Comment:

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

Sample Location: Ok Branch @ Eucalyptus

Collection Date/Time: 10/02/2019 10:25

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124652	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P371849	
	EPA 300.0 Rev. 2.1	Chloride	77		mg Cl/L	P372382	
		Sulfate	30		mg SO4/L	P372386	
	SM 2120 B	Color (true)	62		PCU	P371854	
	SM 2320 B-97	Total Alkalinity	261		mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	457		mg/L	P372429	
	SM 2540 D-97	TSS	3	I	mg/L	P372226	RPD
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P372161	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P372141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P371929	
2124653	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P371949	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P371906	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P371789	
2124697		Acesulfame K**	0.10	U	ug/L	P371943	
		AMPA**	0.50		ug/L	P371943	
		Sucralose**	1.6		ug/L	P371943	
		Acetaminophen**	0.0080	U	ug/L	P371789	
		Acetamiprid**	0.0020	U	ug/L	P371789	
		Endothall**	0.25	U	ug/L	P371943	
		Glufosinate**	0.10	U	ug/L	P371943	
		Glyphosate**	0.10	U	ug/L	P371943	
		Afidopyropen**	0.0020	UJ	ug/L	P371789	
		Bentazon	0.0011	I	ug/L	P371789	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371789	
		Carbamazepine**	0.014		ug/L	P371789	
		Clothianidin**	0.0020	U	ug/L	P371789	
		Dinotefuran**	0.0020	U	ug/L	P371789	
		Diuron	0.0020	U	ug/L	P371789	
		Fenuron	0.016	U	ug/L	P371789	
		Fluridone**	0.58		ug/L	P371789	
		Imazapyr**	0.015	I	ug/L	P371789	
		Hydrocodone**	0.0020	U	ug/L	P371789	
		Ibuprofen**	0.020	U	ug/L	P371789	
		Imidacloprid	0.0020	U	ug/L	P371789	
		Linuron	0.0040	U	ug/L	P371789	
		Mandestrobin**	0.0020	UJ	ug/L	P371789	
		MCPD	0.0020	U	ug/L	P371789	
		Naproxen**	0.0080	U	ug/L	P371789	
		Primidone**	0.0040	U	ug/L	P371789	
		Pyraclostrobin**	0.0020	U	ug/L	P371789	
		Thiamethoxam**	0.0020	U	ug/L	P371789	

Field ID: G3SD0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124697	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P371789	
		Triclopyr**	0.0040	U	ug/L	P371789	
2124699	EPA 200.7 Rev. 4.4	Barium	17.7		ug/L	P371975	
		Calcium	99.6		mg/L	P371975	
		Iron	560		ug/L	P371975	
		Magnesium	7.36		mg/L	P371975	
		Potassium	4.6		mg/L	P371975	
		Sodium	57.3		mg/L	P371975	
		Zinc	5.0	U	ug/L	P371975	
	EPA 200.8 Rev. 5.4	Aluminum	30		ug/L	P371975	
		Antimony	0.27		ug/L	P371975	
		Arsenic	1.92		ug/L	P371975	
		Boron**	87.6		ug/L	P371975	
		Cadmium	0.020	U	ug/L	P371975	
		Chromium	0.40	U	ug/L	P371975	
		Copper	0.40	U	ug/L	P371975	
		Lead	0.20	U	ug/L	P371975	
		Nickel	0.67	I	ug/L	P371975	
		Selenium	0.20	U	ug/L	P371975	
		Silver	0.010	U	ug/L	P371975	
		Thallium	0.10	U	ug/L	P371975	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples 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 could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Robert's Canal @SR80

Collection Date/Time: 10/02/2019 11:15

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124655	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P371849	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P372382	
		Sulfate	9.9		mg SO4/L	P372386	
	SM 2120 B	Color (true)	120		PCU	P371854	
	SM 2320 B-97	Total Alkalinity	160		mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	271		mg/L	P372429	
	SM 2540 D-97	TSS	16		mg/L	P372226	RPD
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P372161	
2124656	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P372141	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P371929	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P371949	
2124657	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P371906	
2124698	EPA 8321B	2,4-D	0.014		ug/L	P371789	
		Acesulfame K**	0.10	U	ug/L	P371943	
		AMPA**	0.50		ug/L	P371943	
		Sucralose**	0.010	U	ug/L	P371943	
		Acetaminophen**	0.0080	U	ug/L	P371789	
		Acetamiprid**	0.0020	U	ug/L	P371789	
		Endothall**	0.25	U	ug/L	P371943	
		Glufosinate**	0.10	U	ug/L	P371943	
		Glyphosate**	0.64		ug/L	P371943	
		Afidopyropen**	0.0020	UJ	ug/L	P371789	
		Bentazon	0.0069		ug/L	P371789	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P371789	
		Carbamazepine**	8.0E-04	U	ug/L	P371789	
		Clothianidin**	0.0033	I	ug/L	P371789	
		Dinotefuran**	0.0020	U	ug/L	P371789	
		Diuron	0.0072	I	ug/L	P371789	
		Fenuron	0.016	U	ug/L	P371789	
		Fluridone**	0.0044		ug/L	P371789	
		Imazapyr**	0.10		ug/L	P371789	
		Hydrocodone**	0.0020	U	ug/L	P371789	
		Ibuprofen**	0.020	U	ug/L	P371789	
		Imidacloprid	0.013		ug/L	P371789	
		Linuron	0.0040	U	ug/L	P371789	
		Mandestrobin**	0.0020	UJ	ug/L	P371789	
		MCP	0.0020	U	ug/L	P371789	
		Naproxen**	0.0080	U	ug/L	P371789	
		Primidone**	0.0040	U	ug/L	P371789	
		Pyraclostrobin**	0.0020	U	ug/L	P371789	
		Thiamethoxam**	0.0043	I	ug/L	P371789	

Field ID: G3SD0146

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124698	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P371789	
		Triclopyr**	0.0040	U	ug/L	P371789	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples 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 could not be assessed 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: P371848

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371849

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371975

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: P371975

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: P372382

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

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: P372141

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371929

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372038

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371906

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

Reference Method: EPA 8321B
Batch ID: P371789

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: P371789

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: P371943

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: P371854

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372158

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

Reference Method: SM 2540 C-97
Batch ID: P372429

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372226

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371949

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: P371975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	95.6		P	80 - 120
Calcium	105		P	80 - 120
Iron	104		P	80 - 120
Magnesium	105		P	80 - 120
Potassium	101		P	80 - 120
Sodium	101		P	80 - 120
Zinc	94.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.4		P	85 - 115
Antimony	97.3		P	85 - 115
Arsenic	102		P	85 - 115
Boron	93.6		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	93.4		P	85 - 115
Copper	94.2		P	85 - 115
Lead	102		P	85 - 115
Nickel	101		P	85 - 115
Selenium	100		P	85 - 115
Silver	102		P	85 - 115
Thallium	97.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371929

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P372037

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P372038

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: P371920

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P371921

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P371906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P371789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	134		P	40 - 160
Acetaminophen	90.3		P	30 - 160
Acetamiprid	102		P	40 - 160
Afidopyropen	92.5		P	40 - 160
Bentazon	106		P	30 - 160
Benzovindiflupyr	99.0		P	40 - 160
Carbamazepine	110		P	40 - 160
Clothianidin	101		P	40 - 160
Dinotefuran	97.1		P	40 - 160
Diuron	108		P	40 - 160
Fenuron	107		P	40 - 160
Fluridone	97.7		P	40 - 160
Hydrocodone	99.7		P	40 - 160
Ibuprofen	95.1		P	30 - 160
Imazapyr	112		P	40 - 160
Imidacloprid	109		P	40 - 160
Linuron	86.4		P	40 - 160
Mandestrobin	96.4		P	40 - 160
MCPP	141		P	40 - 160
Naproxen	80.9		P	40 - 160
Primidone	98.4		P	40 - 160
Pyraclostrobin	88.1		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P371789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	108		P	40 - 160
Tolfenpyrad	63.3		P	40 - 160
Triclopyr	121		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	114		P	40 - 150
Endothall	96.2		P	40 - 150
Glufosinate	101		P	40 - 150
Glyphosate	92.1		P	40 - 140
Sucralose	86.9		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P371854

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

Reference Method: SM 2320 B-97
Batch ID: P372158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371949

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124406	Barium	94.8		P	80 - 120
2124406	Calcium	98.7		P	80 - 120
2124406	Iron	103		P	80 - 120
2124406	Magnesium	98.2		P	80 - 120
2124406	Potassium	106		P	80 - 120
2124406	Sodium	102		P	80 - 120
2124406	Zinc	93.2		P	80 - 120
2124775	Barium	98.6	98.5	P/P	80 - 120
2124775	Calcium	106	109	P/P	80 - 120
2124775	Iron	103	107	P/P	80 - 120
2124775	Magnesium	106	109	P/P	80 - 120
2124775	Potassium	106	109	P/P	80 - 120
2124775	Sodium	102	103	P/P	80 - 120
2124775	Zinc	96.9	97.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124406	Aluminum	95.7		P	80 - 120
2124406	Antimony	100		P	80 - 120
2124406	Arsenic	105		P	80 - 120
2124406	Boron	92.5		P	80 - 120
2124406	Cadmium	102		P	80 - 120
2124406	Chromium	90.5		P	80 - 120
2124406	Copper	91.4		P	80 - 120
2124406	Lead	98.3		P	80 - 120
2124406	Nickel	99.5		P	80 - 120
2124406	Selenium	103		P	80 - 120
2124406	Silver	101		P	80 - 120
2124406	Thallium	100		P	80 - 120
2124775	Aluminum	93.9	96.5	P/P	80 - 120
2124775	Antimony	96.6	99.1	P/P	80 - 120
2124775	Arsenic	102	104	P/P	80 - 120
2124775	Boron	91.6	95.3	P/P	80 - 120
2124775	Cadmium	97.2	102	P/P	80 - 120
2124775	Chromium	90.5	93.3	P/P	80 - 120
2124775	Copper	93.1	95.4	P/P	80 - 120
2124775	Lead	98.9	104	P/P	80 - 120
2124775	Nickel	98.0	101	P/P	80 - 120
2124775	Selenium	97.8	101	P/P	80 - 120
2124775	Silver	101	103	P/P	80 - 120
2124775	Thallium	95.2	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Chloride	98.5		P	90 - 110
2124728	Chloride	99.3		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124653	Ammonia-N	96.6	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124653	Kjeldahl Nitrogen	101	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124641	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124731	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124643	Total-P	99.4	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124731	Total-P	95.5	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124647	O-Phosphate-P	95.0	94.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P371789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124032	2,4-D	136	114	P/P	40 - 160
2124032	Acetaminophen	73.6	74.1	P/P	30 - 160
2124032	Acetamiprid	106	103	P/P	40 - 160
2124032	Afidopyropen	88.9	87.6	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P371789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124032	Bentazon	76.5	75.9	P/P	30 - 160
2124032	Benzovindiflupyr	99.7	91.0	P/P	40 - 160
2124032	Carbamazepine	104	98.2	P/P	40 - 160
2124032	Dinotefuran	109	101	P/P	40 - 160
2124032	Diuron	97.1	88.9	P/P	40 - 160
2124032	Fenuron	94.0	84.2	P/P	40 - 160
2124032	Fluridone	91.8	87.5	P/P	40 - 160
2124032	Hydrocodone	106	101	P/P	40 - 160
2124032	Ibuprofen	86.3	78.9	P/P	30 - 160
2124032	Imazapyr	99.3	103	P/P	40 - 160
2124032	Linuron	79.9	73.9	P/P	40 - 160
2124032	Mandestrobin	94.2	85.6	P/P	40 - 160
2124032	MCP	152	133	P/P	40 - 160
2124032	Naproxen	98.9	78.8	P/P	40 - 160
2124032	Primidone	106	96.0	P/P	40 - 160
2124032	Pyraclostrobin	98.3	87.8	P/P	30 - 160
2124032	Tolfenpyrad	63.0	56.5	P/P	40 - 160
2124032	Triclopyr	128	96.6	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P371943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124583	Acesulfame K	76.1	74.5	P/P	40 - 150
2124583	AMPA	50.1	50.4	P/P	40 - 150
2124583	Endothall	74.0	79.5	P/P	40 - 150
2124583	Glufosinate	71.3	66.8	P/P	40 - 150
2124583	Glyphosate	48.1	49.7	P/P	40 - 140
2124583	Sucralose	88.1	82.9	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Fluoride	96.0	95.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124734	Organic Carbon	97.4	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124637	Turbidity	3.45	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124652	Turbidity	5.06	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P371975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124775	Barium	0.117	Spike	P	0 - 20
2124775	Calcium	2.77	Spike	P	0 - 20
2124775	Iron	2.94	Spike	P	0 - 20
2124775	Magnesium	2.42	Spike	P	0 - 20
2124775	Potassium	2.73	Spike	P	0 - 20
2124775	Sodium	0.301	Spike	P	0 - 20
2124775	Zinc	0.130	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P371975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124775	Aluminum	2.60	Spike	P	0 - 20
2124775	Antimony	2.55	Spike	P	0 - 20
2124775	Arsenic	1.94	Spike	P	0 - 20
2124775	Boron	3.69	Spike	P	0 - 20
2124775	Cadmium	4.39	Spike	P	0 - 20
2124775	Chromium	3.08	Spike	P	0 - 20
2124775	Copper	2.50	Spike	P	0 - 20
2124775	Lead	4.54	Spike	P	0 - 20
2124775	Nickel	2.87	Spike	P	0 - 20
2124775	Selenium	3.07	Spike	P	0 - 20
2124775	Silver	1.75	Spike	P	0 - 20
2124775	Thallium	6.07	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Chloride	0.416	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Sulfate	0.372	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124653	Ammonia-N	2.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124653	Kjeldahl Nitrogen	4.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124641	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124731	NO2NO3-N	0.471	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124643	Total-P	1.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124731	Total-P	0.120	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124647	O-Phosphate-P	0.192	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P371789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124032	2,4-D	16.3	Spike	P	0 - 30
2124032	Acetaminophen	0.701	Spike	P	0 - 30
2124032	Acetamiprid	2.94	Spike	P	0 - 30
2124032	Afidopyropen	1.54	Spike	P	0 - 30
2124032	Bentazon	0.779	Spike	P	0 - 30
2124032	Benzovindiflupyr	9.15	Spike	P	0 - 30
2124032	Carbamazepine	6.11	Spike	P	0 - 30
2124032	Clothianidin	16.6	Spike	P	0 - 30
2124032	Dinotefuran	7.02	Spike	P	0 - 30
2124032	Diuron	8.53	Spike	P	0 - 30
2124032	Fenuron	11.0	Spike	P	0 - 30
2124032	Fluridone	4.74	Spike	P	0 - 30
2124032	Hydrocodone	4.79	Spike	P	0 - 30
2124032	Ibuprofen	9.00	Spike	P	0 - 30
2124032	Imazapyr	2.73	Spike	P	0 - 30
2124032	Imidacloprid	14.8	Spike	P	0 - 30
2124032	Linuron	7.87	Spike	P	0 - 30
2124032	Mandestrobin	9.51	Spike	P	0 - 30
2124032	MCPP	13.1	Spike	P	0 - 30
2124032	Naproxen	22.6	Spike	P	0 - 30
2124032	Primidone	9.67	Spike	P	0 - 30
2124032	Pyraclostrobin	11.3	Spike	P	0 - 30
2124032	Thiamethoxam	15.0	Spike	P	0 - 30
2124032	Tolfenpyrad	10.8	Spike	P	0 - 30
2124032	Triclopyr	27.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P371943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124583	Acesulfame K	2.15	Spike	P	0 - 30
2124583	AMPA	0.256	Spike	P	0 - 30
2124583	Endothall	7.10	Spike	P	0 - 30
2124583	Glufosinate	6.59	Spike	P	0 - 30
2124583	Glyphosate	1.68	Spike	P	0 - 30
2124583	Sucralose	5.37	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P371854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124727	Color (true)	1.62	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P372158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Total Alkalinity	0.222	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P372429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124649	TDS	1.76	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P372226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124649	TSS	13.7	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P371949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124734	Organic Carbon	0.0307	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2124696
Field Sample ID: G3SD0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.1	P	30 - 160
EPA 8321B	Bentazon-d7	47.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	102	P	30 - 160
EPA 8321B	Diuron-d6	97.7	P	30 - 160
EPA 8321B	Endothall-d6	87.2	P	30 - 160
EPA 8321B	Endothall-d6	87.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	153	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	153	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.0	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	80.2	P	30 - 160
EPA 8321B	Sucralose-d6	80.2	P	30 - 160

Lab Sample ID: 2124697
Field Sample ID: G3SD0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	62.5	P	30 - 160
EPA 8321B	Bentazon-d7	42.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.4	P	30 - 160
EPA 8321B	Diuron-d6	80.0	P	30 - 160
EPA 8321B	Endothall-d6	97.4	P	30 - 160
EPA 8321B	Endothall-d6	97.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	64.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.0	P	30 - 160
EPA 8321B	Primidone-d5	84.7	P	30 - 160
EPA 8321B	Sucralose-d6	81.3	P	30 - 160
EPA 8321B	Sucralose-d6	81.3	P	30 - 160

Lab Sample ID: 2124698
Field Sample ID: G3SD0146

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	132	P	30 - 160
EPA 8321B	Acetaminophen-d4	60.6	P	30 - 160
EPA 8321B	Bentazon-d7	41.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.1	P	30 - 160
EPA 8321B	Diuron-d6	78.2	P	30 - 160
EPA 8321B	Endothall-d6	82.3	P	30 - 160
EPA 8321B	Endothall-d6	82.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.5	P	30 - 160
EPA 8321B	Primidone-d5	82.6	P	30 - 160
EPA 8321B	Sucralose-d6	73.8	P	30 - 160
EPA 8321B	Sucralose-d6	73.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94709

Included Lab Sample IDs: 2124649, 2124652, 2124655, 2124658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A94710

Included Lab Sample IDs: 2124649, 2124652, 2124655, 2124658

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94721

Included Lab Sample IDs: 2124651, 2124654, 2124657, 2124660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.5	P/P	90 - 110
O-Phosphate-P	99.0	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94727

Included Lab Sample IDs: 2124650, 2124653, 2124656, 2124659

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: SM 5310 B-00

Run ID: A94743

Included Lab Sample IDs: 2124650, 2124653, 2124656, 2124659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.9	P/P	90 - 110
Organic Carbon	99.9	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94752

Included Lab Sample IDs: 2124696, 2124697, 2124698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	93.8	P/P	50 - 150
Acetaminophen	98.8	102	P/P	60 - 160
Acetamiprid	110	106	P/P	50 - 150
Afidopyropen	93.7	96.7	P/P	50 - 150
Bentazon	106	106	P/P	50 - 160
Benzovindiflupyr	112	110	P/P	50 - 150
Carbamazepine	108	106	P/P	60 - 150
Clothianidin	99.7	112	P/P	60 - 150
Dinotefuran	103	99.1	P/P	50 - 150
Diuron	125	114	P/P	60 - 150
Fenuron	97.6	105	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94752

Included Lab Sample IDs: 2124696, 2124697, 2124698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	113	117	P/P	60 - 160
Fluridone	121	114	P/P	60 - 160
Hydrocodone	106	98.3	P/P	60 - 150
Ibuprofen	101	102	P/P	50 - 160
Imazapyr	90.1	96.9	P/P	50 - 150
Imidacloprid	106	97.1	P/P	60 - 150
Linuron	113	103	P/P	60 - 150
Mandestrobin	107	100	P/P	50 - 150
MCPP	98.0	93.6	P/P	50 - 150
Naproxen	101	96.0	P/P	50 - 160
Primidone	97.3	104	P/P	60 - 150
Pyraclostrobin	111	118	P/P	60 - 150
Thiamethoxam	87.6	102	P/P	50 - 150
Tolfenpyrad	107	108	P/P	60 - 150
Triclopyr	105	106	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94753

Included Lab Sample IDs: 2124650, 2124653, 2124656

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94758

Included Lab Sample IDs: 2124650, 2124653, 2124656, 2124659

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94762

Included Lab Sample IDs: 2124659

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94806

Included Lab Sample IDs: 2124699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	97.7	P/P	90 - 110
Calcium	98.2	100	P/P	90 - 110
Iron	98.2	101	P/P	90 - 110
Magnesium	97.7	101	P/P	90 - 110
Potassium	97.2	99.6	P/P	90 - 110
Sodium	95.5	97.0	P/P	90 - 110
Zinc	102	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94808

Included Lab Sample IDs: 2124650, 2124653, 2124656, 2124659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	97.6	P/P	90 - 110
Ammonia-N	99.7	99.8	P/P	90 - 110
Ammonia-N	99.8	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94818

Included Lab Sample IDs: 2124649, 2124652, 2124655, 2124658

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

Reference Method: SM 4500 F-C-97

Run ID: A94818

Included Lab Sample IDs: 2124649, 2124652, 2124655, 2124658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94823

Included Lab Sample IDs: 2124696, 2124697, 2124698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	111	P/P	60 - 160
AMPA	111	116	P/P	60 - 160
Glufosinate	105	101	P/P	60 - 160
Glufosinate	94.5	105	P/P	60 - 160
Glyphosate	100	105	P/P	60 - 160
Glyphosate	94.6	100	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94824

Included Lab Sample IDs: 2124696, 2124697, 2124698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	109	105	P/P	60 - 160
Acesulfame K	124	109	P/P	60 - 160
Endothall	107	86.8	P/P	60 - 160
Endothall	86.8	91.7	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94842

Included Lab Sample IDs: 2124699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	109	108	P/P	90 - 110
Antimony	99.0	101	P/P	90 - 110
Arsenic	107	108	P/P	90 - 110
Boron	107	106	P/P	90 - 110
Cadmium	103	105	P/P	90 - 110
Chromium	99.0	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94842

Included Lab Sample IDs: 2124699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	101	101	P/P	90 - 110
Nickel	105	106	P/P	90 - 110
Selenium	105	106	P/P	90 - 110
Silver	101	103	P/P	90 - 110
Thallium	91.4	91.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94848

Included Lab Sample IDs: 2124696, 2124697, 2124698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	74.3	P/P	60 - 160
Sucralose	74.3	80.2	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94920

Included Lab Sample IDs: 2124649, 2124652, 2124655, 2124658

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94933

Included Lab Sample IDs: 2124699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	98.2	98.0	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.45	
	Turbidity						5.06	
EPA 200.7 Rev. 4.4	Barium	95.6	94.8	98.6	98.5			0.117
	Calcium	105	98.7	106	109			2.77
	Iron	104	103	103	107			2.94
	Magnesium	105	98.2	106	109			2.42
	Potassium	101	106	106	109			2.73
	Sodium	101	102	102	103			0.301
	Zinc	94.3	93.2	96.9	97.1			0.130
EPA 200.8 Rev. 5.4	Aluminum	96.4	95.7	93.9	96.5			2.60
	Antimony	97.3	100	96.6	99.1			2.55
	Arsenic	102	105	102	104			1.94
	Boron	93.6	92.5	91.6	95.3			3.69
	Cadmium	101	102	97.2	102			4.39
	Chromium	93.4	90.5	90.5	93.3			3.08
	Copper	94.2	91.4	93.1	95.4			2.50
	Lead	102	98.3	98.9	104			4.54
	Nickel	101	99.5	98.0	101			2.87
	Selenium	100	103	97.8	101			3.07
	Silver	102	101	101	103			1.75
	Thallium	97.0	100	95.2	101			6.07
EPA 300.0 Rev. 2.1	Chloride	100	98.5	99.3			0.416	
	Sulfate	100	99.9				0.372	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	96.6	93.4				2.96
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	101	109				4.14
EPA 353.2 Rev. 2.0	NO2NO3-N	101	100	100				0.499
	NO2NO3-N	102	99.5					0.471
EPA 365.1 Rev. 2.0	Total-P	101	99.4	98.2				1.21
	Total-P	98.6	95.5	95.8				0.120
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	95.0	94.8				0.192
EPA 8321B	2,4-D	134	136	114				16.3
	Acesulfame K	111	76.1	74.5				2.15
	Acetaminophen	90.3	73.6	74.1				0.701
	Acetamiprid	102	106	103				2.94
	Afidopyropen	92.5	88.9	87.6				1.54
	AMPA	114	50.1	50.4				0.256
	Bentazon	106	76.5	75.9				0.779
	Benzovindiflupyr	99.0	99.7	91.0				9.15
	Carbamazepine	110	104	98.2				6.11
	Clothianidin	101						16.6
	Dinotefuran	97.1	109	101				7.02
	Diuron	108	97.1	88.9				8.53
	Endothall	96.2	74.0	79.5				7.10
	Fenuron	107	94.0	84.2				11.0
	Fluridone	97.7	91.8	87.5				4.74
	Glufosinate	101	71.3	66.8				6.59
	Glyphosate	92.1	48.1	49.7				1.68
	Hydrocodone	99.7	106	101				4.79
	Ibuprofen	95.1	86.3	78.9				9.00
	Imazapyr	112	99.3	103				2.73
	Imidacloprid	109						14.8
	Linuron	86.4	79.9	73.9				7.87
	Mandestrobin	96.4	94.2	85.6				9.51
	MCPP	141	152	133				13.1

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Naproxen	80.9	98.9	78.8			22.6
	Primidone	98.4	106	96.0			9.67
	Pyraclostrobin	88.1	98.3	87.8			11.3
	Sucralose	86.9	88.1	82.9			5.37
	Thiamethoxam	108					15.0
	Tolfenpyrad	63.3	63.0	56.5			10.8
	Triclopyr	121	128	96.6			27.9
SM 2120 B	Color (true)	100				1.62	
SM 2320 B-97	Total Alkalinity	104				0.222	
SM 2540 C-97	TDS					1.76	
SM 2540 D-97	TSS					13.7	
SM 4500 F-C-97	Fluoride	96.4	96.0	95.5			0.473
SM 5310 B-00	Organic Carbon	96.4	97.4	97.4			0.0307

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2124649, 2124652, 2124655, 2124658
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2124699
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2124699
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2124649, 2124652, 2124655, 2124658
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2124649, 2124652, 2124655, 2124658
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2124650, 2124653, 2124656, 2124659
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2124650, 2124653, 2124656, 2124659
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2124650, 2124653, 2124656, 2124659
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2124650, 2124653, 2124656, 2124659
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2124651, 2124654, 2124657, 2124660
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2124696, 2124697, 2124698
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2124696, 2124697, 2124698
SM 2120 B / E31780	True Color measured at 450 nm	2124649, 2124652, 2124655, 2124658
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2124649, 2124652, 2124655, 2124658
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2124649, 2124652, 2124655, 2124658
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2124649, 2124652, 2124655, 2124658
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2124649, 2124652, 2124655, 2124658
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2124650, 2124653, 2124656, 2124659

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	10/03/2019			10/03/2019 16:10	Rosalyn Ballman	2124649, 2124652, 2124655, 2124658
EPA 200.7 Rev. 4.4	10/03/2019	10/07/2019 12:00	Elliott D. Healy	10/08/2019 14:05	Alexander Thompson	2124699
EPA 200.8 Rev. 5.4	10/03/2019	10/07/2019 12:00	Elliott D. Healy	10/09/2019 23:02	Robert K Palmer	2124699
	10/03/2019	10/07/2019 12:00	Elliott D. Healy	10/14/2019 21:54	Robert K Palmer	2124699
EPA 300.0 Rev. 2.1	10/03/2019			10/12/2019 08:14	Julia Storbeck	2124649
	10/03/2019			10/12/2019 08:26	Julia Storbeck	2124652
	10/03/2019			10/12/2019 08:39	Julia Storbeck	2124655
	10/03/2019			10/12/2019 08:51	Julia Storbeck	2124658
EPA 350.1 Rev. 2.0	10/03/2019			10/08/2019 14:07	Ping Hua	2124653
	10/03/2019			10/08/2019 14:22	Ping Hua	2124656
	10/03/2019			10/08/2019 14:30	Ping Hua	2124659
	10/03/2019			10/08/2019 14:50	Ping Hua	2124650
EPA 351.2 Rev. 2.0	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/07/2019 12:53	Virginia P. Brown	2124650
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/07/2019 12:54	Virginia P. Brown	2124653
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/07/2019 12:59	Virginia P. Brown	2124656
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/07/2019 13:01	Virginia P. Brown	2124659
EPA 353.2 Rev. 2.0	10/03/2019			10/04/2019 11:51	Beverly Y. Sanders	2124650
	10/03/2019			10/04/2019 11:52	Beverly Y. Sanders	2124653
	10/03/2019			10/04/2019 11:53	Beverly Y. Sanders	2124656
	10/03/2019			10/04/2019 12:06	Beverly Y. Sanders	2124659
EPA 365.1 Rev. 2.0	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 11:33	Lipi Saha	2124650
	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 11:34	Lipi Saha	2124653
	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 11:35	Lipi Saha	2124656
	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 14:39	Lipi Saha	2124659
EPA 365.1 Rev. 2.0 dissolved	10/03/2019			10/03/2019 16:10	Samantha Davila	2124651
	10/03/2019			10/03/2019 16:15	Samantha Davila	2124654
	10/03/2019			10/03/2019 16:16	Samantha Davila	2124657
	10/03/2019			10/03/2019 16:17	Samantha Davila	2124660
EPA 8321B	10/03/2019	10/04/2019 09:00	Hoor Shaik	10/05/2019 13:20	Juyoung Kim	2124696
	10/03/2019	10/04/2019 09:00	Hoor Shaik	10/05/2019 13:55	Juyoung Kim	2124697
	10/03/2019	10/04/2019 09:00	Hoor Shaik	10/05/2019 14:29	Juyoung Kim	2124698
	10/03/2019	10/04/2019 09:00	Hoor Shaik	10/07/2019 09:58	Juyoung Kim	2124697
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/07/2019 12:06	Rebecca Ware	2124696
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/07/2019 12:28	Rebecca Ware	2124697
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/07/2019 12:39	Rebecca Ware	2124698
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/08/2019 10:51	Rebecca Ware	2124696
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/08/2019 11:20	Rebecca Ware	2124697
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/08/2019 11:34	Rebecca Ware	2124698
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/09/2019 11:28	Rebecca Ware	2124696
	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/09/2019 12:01	Rebecca Ware	2124697

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/03/2019	10/07/2019 10:30	Rebecca Ware	10/09/2019 12:13	Rebecca Ware	2124698
SM 2120 B	10/03/2019			10/03/2019 17:10	Madeline Funaro	2124652, 2124655
	10/03/2019			10/03/2019 17:11	Madeline Funaro	2124658
	10/03/2019			10/03/2019 17:30	Madeline Funaro	2124649
SM 2320 B-97	10/03/2019			10/09/2019 05:53	Dale L. Simmons	2124649
	10/03/2019			10/09/2019 06:08	Dale L. Simmons	2124652
	10/03/2019			10/09/2019 06:21	Dale L. Simmons	2124655
	10/03/2019			10/09/2019 06:36	Dale L. Simmons	2124658
SM 2540 C-97	10/03/2019			10/04/2019 20:17	Rosalyn Ballman	2124649, 2124652, 2124655, 2124658
SM 2540 D-97	10/03/2019			10/04/2019 20:17	Rosalyn Ballman	2124649, 2124652, 2124655, 2124658
SM 4500 F-C-97	10/03/2019			10/09/2019 05:53	Dale L. Simmons	2124649
	10/03/2019			10/09/2019 06:08	Dale L. Simmons	2124652
	10/03/2019			10/09/2019 06:21	Dale L. Simmons	2124655
	10/03/2019			10/09/2019 06:36	Dale L. Simmons	2124658
SM 5310 B-00	10/03/2019			10/05/2019 08:38	Madeline Funaro	2124650
	10/03/2019			10/05/2019 08:53	Madeline Funaro	2124653
	10/03/2019			10/05/2019 09:05	Madeline Funaro	2124656
	10/03/2019			10/05/2019 09:47	Madeline Funaro	2124659