

Chemical Analysis Report

NE-DIST-2018-04-19-02

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

Event Description: **LSJR Southside 2**

Request ID: **RQ-2018-04-16-34**

Customer: **NE-DIST**

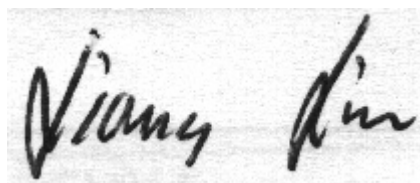
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-MAY-2018 14:48

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

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Deep Bottom at Cheatham Trail

Collection Date/Time: 04/18/2018 09:20

Field ID: 20030592

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985903	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P343764	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P343856	
		Sulfate	17		mg SO4/L	P343858	
		Color (true)	45		PCU	P343754	
	SM 2120 B	Total Alkalinity	79		mg CaCO3/L	P344449	
	SM 2540 C-97	TDS	171		mg/L	P344141	
	SM 2540 D-97	TSS	4	I	mg/L	P343914	
	SM 4500 F-C-97	Fluoride	0.079	I	mg F/L	P344454	
1985906	EPA 350.1 Rev. 2.0	Ammonia-N	0.073		mg N/L	P344037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P343883	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P343977	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P344203	
1985909	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P343760	
1985941	EPA 8321B	2,4-D	0.048		ug/L	P343718	
		Bentazon	0.031		ug/L	P343718	
		MCP	0.011		ug/L	P343718	
		Triclopyr**	0.0040	U	ug/L	P343718	
		Imidacloprid	0.056		ug/L	P343718	MS
		Diuron	0.014		ug/L	P343718	
		Pyraclostrobin**	0.0020	U	ug/L	P343718	
		Primidone**	0.0040	U	ug/L	P343718	
		Linuron	0.0040	U	ug/L	P343718	
		Acetaminophen**	0.026	I	ug/L	P343718	
		Fenuron	0.019	I	ug/L	P343718	
		Imazapyr**	0.58		ug/L	P343718	
		Carbamazepine**	0.0017		ug/L	P343718	
		Fluridone**	0.16		ug/L	P343718	
		Hydrocodone**	8.0E-04	U	ug/L	P343718	
		Sucralose**	0.10	U	ug/L	P343665	
		Glyphosate**	0.61		ug/L	P343665	
		AMPA**	0.25	I	ug/L	P343665	
		Endothall**	0.10	U	ug/L	P343665	
		Glufosinate**	0.10	U	ug/L	P343665	
1985953	EPA 200.7 Rev. 4.4	Calcium	34.2		mg/L	P343891	
		Iron	920		ug/L	P343891	
		Magnesium	5.09		mg/L	P343891	
		Potassium	1.8		mg/L	P343891	
		Sodium	13.9		mg/L	P343891	
		Zinc	5.1	I	ug/L	P343891	
	EPA 200.8 Rev. 5.4	Arsenic	1.30		ug/L	P343891	
		Cadmium	0.020	U	ug/L	P343891	
		Chromium	0.57	I	ug/L	P343891	

Field ID: 20030592

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985953	EPA 200.8 Rev. 5.4	Copper	2.03		ug/L	P343891	
		Lead	0.40		ug/L	P343891	
		Nickel	0.53	I	ug/L	P343891	
		Silver	0.010	U	ug/L	P343891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

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

Sample Location: Deep Bottom Creek at I-295

Collection Date/Time: 04/18/2018 08:50

Field ID: 20030596

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985904	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P343764	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P343856	
		Sulfate	29		mg SO4/L	P343858	
	SM 2120 B	Color (true)	51		PCU	P343754	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P344449	
	SM 2540 C-97	TDS	191		mg/L	P344141	
	SM 2540 D-97	TSS	2	I	mg/L	P343914	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P344454	
1985907	EPA 350.1 Rev. 2.0	Ammonia-N	0.091		mg N/L	P344037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P343883	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P343977	
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P344203	
1985910	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P343760	
1985942	EPA 8321B	2,4-D	0.016		ug/L	P343718	
		Bentazon	0.036		ug/L	P343718	
		MCP	0.0092		ug/L	P343718	
		Triclopyr**	0.0040	U	ug/L	P343718	
		Imidacloprid	0.039		ug/L	P343718	MS
		Diuron	0.015		ug/L	P343718	
		Pyraclostrobin**	0.0020	U	ug/L	P343718	
		Primidone**	0.0040	U	ug/L	P343718	
		Linuron	0.0040	U	ug/L	P343718	
		Acetaminophen**	0.0084	I	ug/L	P343718	
		Fenuron	0.035		ug/L	P343718	
		Imazapyr**	0.48		ug/L	P343718	
		Carbamazepine**	4.0E-04	U	ug/L	P343718	
		Fluridone**	0.50		ug/L	P343718	
		Hydrocodone**	8.0E-04	U	ug/L	P343718	
		Sucralose**	0.10	U	ug/L	P343665	
		Glyphosate**	0.51	J	ug/L	P343665	SUR
		AMPA**	0.17	IJ	ug/L	P343665	SUR
		Endothall**	0.10	U	ug/L	P343665	

Field ID: 20030596

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985942	EPA 8321B	Glufosinate**	0.10	UJ	ug/L	P343665	SUR
1985954	EPA 200.7 Rev. 4.4	Calcium	32.2		mg/L	P343891	
		Iron	1.20E+03		ug/L	P343891	
		Magnesium	7.73		mg/L	P343891	
		Potassium	1.7		mg/L	P343891	
		Sodium	16.6		mg/L	P343891	
		Zinc	6.5	I	ug/L	P343891	
	EPA 200.8 Rev. 5.4	Arsenic	0.91		ug/L	P343891	
		Cadmium	0.020	U	ug/L	P343891	
		Chromium	0.56	I	ug/L	P343891	
		Copper	0.92		ug/L	P343891	
		Lead	0.13	I	ug/L	P343891	
		Nickel	0.46	I	ug/L	P343891	
		Silver	0.010	U	ug/L	P343891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

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

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Results confirmed in re-extraction.

Sample Location: Deep Bottom Creek at Scott Mill Rd

Collection Date/Time: 04/18/2018 09:35

Field ID: 20030595

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985905	EPA 180.1 Rev. 2.0	Turbidity	7.2		NTU	P343764	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P343856	
		Sulfate	17		mg SO4/L	P343858	
	SM 2120 B	Color (true)	50	A	PCU	P343755	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	175		mg/L	P344141	
	SM 2540 D-97	TSS	4	I	mg/L	P343914	
	SM 4500 F-C-97	Fluoride	0.082	I	mg F/L	P344455	
1985908	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P343977	
	SM 5310 B-00	Organic Carbon	8.4		mg C/L	P344203	
1985911	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P343760	
1985943	EPA 8321B	2,4-D	0.044		ug/L	P343718	
		Bentazon	0.029		ug/L	P343718	
		MCP	0.011		ug/L	P343718	
		Triclopyr**	0.0040	U	ug/L	P343718	
		Imidacloprid	0.058		ug/L	P343718	MS
		Diuron	0.015		ug/L	P343718	
		Pyraclostrobin**	0.0020	U	ug/L	P343718	
		Primidone**	0.0040	U	ug/L	P343718	

Field ID: 20030595

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985943	EPA 8321B	Linuron	0.0040	U	ug/L	P343718	
		Acetaminophen**	0.020	I	ug/L	P343718	
		Fenuron	0.020	I	ug/L	P343718	
		Imazapyr**	0.61		ug/L	P343718	
		Carbamazepine**	0.0016		ug/L	P343718	
		Fluridone**	0.16		ug/L	P343718	
		Hydrocodone**	8.0E-04	U	ug/L	P343718	
		Sucralose**	0.10	U	ug/L	P343665	
		Glyphosate**	0.10	U	ug/L	P343665	
		AMPA**	0.10	U	ug/L	P343665	
		Endothal**	0.10	U	ug/L	P343665	
		Glufosinate**	0.10	U	ug/L	P343665	
1985955	EPA 200.7 Rev. 4.4	Calcium	35.0		mg/L	P343891	
		Iron	1.08E+03		ug/L	P343891	
		Magnesium	5.22		mg/L	P343891	
		Potassium	1.8		mg/L	P343891	
		Sodium	15.8		mg/L	P343891	
		Zinc	5.0	U	ug/L	P343891	
	EPA 200.8 Rev. 5.4	Arsenic	1.35		ug/L	P343891	
		Cadmium	0.020	U	ug/L	P343891	
		Chromium	0.56	I	ug/L	P343891	
		Copper	1.83		ug/L	P343891	
		Lead	0.35		ug/L	P343891	
		Nickel	0.57	I	ug/L	P343891	
		Silver	0.010	U	ug/L	P343891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

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

Sample Location: Cormorant Branch @ Marbon Rd

Collection Date/Time: 04/18/2018 10:40

Field ID: 20030852

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985944	EPA 8321B	2,4-D	0.0081		ug/L	P343718	
		Bentazon	0.024		ug/L	P343718	
		MCP	0.0039	I	ug/L	P343718	
		Triclopyr**	0.0040	U	ug/L	P343718	
		Imidacloprid	0.056		ug/L	P343718	MS
		Diuron	0.045		ug/L	P343718	
		Pyraclostrobin**	0.0020	U	ug/L	P343718	
		Primidone**	0.0060	I	ug/L	P343718	
		Linuron	0.0040	U	ug/L	P343718	
		Acetaminophen**	0.0080	U	ug/L	P343718	
		Fenuron	0.0083	I	ug/L	P343718	
		Imazapyr**	0.80		ug/L	P343718	

Field ID: 20030852

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985944	EPA 8321B	Carbamazepine**	6.4E-04	I	ug/L	P343718	
		Fluridone**	0.095		ug/L	P343718	
		Hydrocodone**	8.0E-04	U	ug/L	P343718	
		Sucralose**	0.12	I	ug/L	P343665	
		Glyphosate**	0.27	I	ug/L	P343665	
		AMPA**	0.20	I	ug/L	P343665	
		Endothal**	0.10	U	ug/L	P343665	
		Glufosinate**	0.10	U	ug/L	P343665	

Ref. Method and Comment:

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

Sample Location: Oldfield CR @ Loretto Rd

Collection Date/Time: 04/18/2018 10:05

Field ID: 20030563

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985912	EPA 180.1 Rev. 2.0	Turbidity	6.9	A	NTU	P343765	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P343856	
		Sulfate	31		mg SO4/L	P343858	
	SM 2120 B	Color (true)	38		PCU	P343755	
	SM 2320 B-97	Total Alkalinity	86		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	202	A	mg/L	P344142	
	SM 2540 D-97	TSS	4	I	mg/L	P343914	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P344455	
1985914	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.091		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P343977	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P344203	
1985916	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P343760	
1985956	EPA 200.7 Rev. 4.4	Calcium	40.9		mg/L	P343891	
		Iron	1.26E+03		ug/L	P343891	
		Magnesium	6.14		mg/L	P343891	
		Potassium	1.9		mg/L	P343891	
		Sodium	15.5		mg/L	P343891	
		Zinc	5.0	U	ug/L	P343891	
	EPA 200.8 Rev. 5.4	Arsenic	1.12		ug/L	P343891	
		Cadmium	0.020	U	ug/L	P343891	
		Chromium	0.43	I	ug/L	P343891	
		Copper	1.95		ug/L	P343891	
		Lead	0.19	I	ug/L	P343891	
		Nickel	0.72	I	ug/L	P343891	
		Silver	0.010	U	ug/L	P343891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Cormorant Branch at Julington Creek Road

Collection Date/Time: 04/18/2018 11:10

Field ID: 20030685

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985900	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P343764	
	EPA 300.0 Rev. 2.1	Chloride	43	A	mg Cl/L	P343856	
		Sulfate	22	A	mg SO4/L	P343858	
	SM 2120 B	Color (true)	48		PCU	P343754	
	SM 2320 B-97	Total Alkalinity	71		mg CaCO3/L	P344449	
	SM 2540 C-97	TDS	192	A	mg/L	P344141	
	SM 2540 D-97	TSS	2	IA	mg/L	P343914	
	SM 4500 F-C-97	Fluoride	0.090	I	mg F/L	P344454	
1985901	EPA 350.1 Rev. 2.0	Ammonia-N	0.070		mg N/L	P344037	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P343883	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P343977	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P344203	
1985902	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P343760	
1985940	EPA 8321B	2,4-D	0.014		ug/L	P343718	
		Bentazon	0.020		ug/L	P343718	
		MCP	0.0032	I	ug/L	P343718	
		Triclopyr**	0.0040	U	ug/L	P343718	
		Imidacloprid	0.059		ug/L	P343718	MS
		Diuron	0.047		ug/L	P343718	
		Pyraclostrobin**	0.0020	U	ug/L	P343718	
		Primidone**	0.0059	I	ug/L	P343718	
		Linuron	0.0040	U	ug/L	P343718	
		Acetaminophen**	0.0080	U	ug/L	P343718	
		Fenuron	0.0080	U	ug/L	P343718	
		Imazapyr**	0.67		ug/L	P343718	
		Carbamazepine**	9.9E-04	I	ug/L	P343718	
		Fluridone**	0.086		ug/L	P343718	
		Hydrocodone**	8.0E-04	U	ug/L	P343718	
		Sucralose**	0.22	I	ug/L	P343665	
		Glyphosate**	0.19	I	ug/L	P343665	
		AMPA**	0.14	I	ug/L	P343665	
		Endothall**	0.10	U	ug/L	P343665	
		Glufosinate**	0.10	U	ug/L	P343665	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

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

Sample Location: Oldfield CR @ Julington Creek Road

Collection Date/Time: 04/18/2018 11:30

Field ID: 20030684

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985913	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P343765	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P343856	
		Sulfate	31		mg SO4/L	P343858	

Field ID: 20030684

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1985913	SM 2120 B	Color (true)	34		PCU	P343755	
	SM 2320 B-97	Total Alkalinity	81		mg CaCO3/L	P344451	
	SM 2540 C-97	TDS	203		mg/L	P344142	
	SM 2540 D-97	TSS	2	UA	mg/L	P343915	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P344455	
1985915	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P344168	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P343885	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P343907	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P343978	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P344203	
1985917	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P343760	
1985957	EPA 200.7 Rev. 4.4	Calcium	37.6		mg/L	P343891	
		Iron	660		ug/L	P343891	
		Magnesium	6.89		mg/L	P343891	
		Potassium	2.1		mg/L	P343891	
		Sodium	15.7		mg/L	P343891	
		Zinc	5.0	U	ug/L	P343891	
		Arsenic	0.82		ug/L	P343891	
	EPA 200.8 Rev. 5.4	Cadmium	0.020	U	ug/L	P343891	
		Chromium	0.40	U	ug/L	P343891	
		Copper	1.02		ug/L	P343891	
		Lead	0.15	I	ug/L	P343891	
		Nickel	0.35	I	ug/L	P343891	
		Silver	0.010	U	ug/L	P343891	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P343764

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P343765

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P343891

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343891

Component	Result	Code	Units
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: P343891

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343856

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344037

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343907

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343977

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343760

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

Reference Method: EPA 8321B
Batch ID: P343665

Component	Result	Code	Units
AMPA	0.10	U	ug/L
Endothall	0.10	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P343718

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P343754

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P343755

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P344449

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

Reference Method: SM 2320 B-97
Batch ID: P344451

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

Reference Method: SM 2540 C-97
Batch ID: P344141

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P344142

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343914

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P343915

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P344454

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P344203

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: P343891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	99.9		P	85 - 115
Sodium	96.9		P	85 - 115
Zinc	98.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	98.2		P	85 - 115
Chromium	95.0		P	85 - 115
Copper	98.3		P	85 - 115
Lead	96.5		P	85 - 115
Nickel	101		P	85 - 115
Silver	99.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344037

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343907

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: P343977

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

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: P343760

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

Reference Method: EPA 8321B
Batch ID: P343665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	82.0		P	40 - 140
Endothall	86.7		P	40 - 140
Glufosinate	61.2		P	40 - 140
Glyphosate	68.7		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343718

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

Reference Method: EPA 8321B
Batch ID: P343718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.8		P	40 - 150
Acetaminophen	94.1		P	30 - 150
Bentazon	105		P	30 - 150
Carbamazepine	104		P	40 - 150
Diuron	83.2		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	90.0		P	40 - 150
Hydrocodone	107		P	40 - 150
Imazapyr	120		P	40 - 150
Imidacloprid	114		P	40 - 160
Linuron	98.9		P	40 - 150
MCPP	98.6		P	40 - 150
Primidone	105		P	40 - 150
Pyraclostrobin	84.1		P	40 - 150
Triclopyr	105		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P344449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P344451

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P344454

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.7		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344203

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985957	Calcium	97.1		P	80 - 120
1985957	Iron	103		P	80 - 120
1985957	Magnesium	100		P	80 - 120
1985957	Potassium	95.5		P	80 - 120
1985957	Sodium	94.7		P	80 - 120
1985957	Zinc	97.0		P	80 - 120
1986219	Calcium	98.1		P	80 - 120
1986219	Iron	103	102	P/P	80 - 120
1986219	Magnesium	99.4		P	80 - 120
1986219	Potassium	97.2	95.4	P/P	80 - 120
1986219	Sodium	95.9		P	80 - 120
1986219	Zinc	93.8	96.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343891

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985957	Arsenic	103		P	80 - 120
1985957	Cadmium	102		P	80 - 120
1985957	Chromium	97.0		P	80 - 120
1985957	Copper	96.5		P	80 - 120
1985957	Lead	99.6		P	80 - 120
1985957	Nickel	99.1		P	80 - 120
1985957	Silver	99.2		P	80 - 120
1986219	Arsenic	102	103	P/P	80 - 120
1986219	Cadmium	103	102	P/P	80 - 120
1986219	Chromium	95.6	96.9	P/P	80 - 120
1986219	Copper	94.5	95.5	P/P	80 - 120
1986219	Lead	97.3	99.2	P/P	80 - 120
1986219	Nickel	97.4	98.7	P/P	80 - 120
1986219	Silver	98.8	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985900	Sulfate	91.3		P	90 - 110
1985994	Sulfate	92.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985837	Ammonia-N	97.3	96.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985968	Ammonia-N	102	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985901	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985908	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343907

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985836	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343977

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985907	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985968	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985833	O-Phosphate-P	99.2	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P343665

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985613	AMPA	71.3	64.8	P/P	40 - 140
1985613	Endothall	91.1	89.7	P/P	40 - 140
1985613	Glufosinate	86.7	91.3	P/P	40 - 140
1985613	Glyphosate	79.3	78.2	P/P	40 - 140
1985613	Sucralose	71.3	65.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P343718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985800	2,4-D	73.2	69.0	P/P	40 - 150
1985800	Acetaminophen	105	110	P/P	30 - 150
1985800	Bentazon	43.0	42.4	P/P	30 - 150
1985800	Carbamazepine	77.0	80.9	P/P	40 - 150
1985800	Diuron	69.8	69.4	P/P	40 - 150
1985800	Fenuron	75.8	78.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P343718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985800	Fluridone	74.5	76.3	P/P	40 - 150
1985800	Hydrocodone	108	114	P/P	40 - 150
1985800	Imidacloprid	193	201	F/F	40 - 160
1985800	Linuron	88.0	101	P/P	40 - 150
1985800	MCP	70.2	65.1	P/P	40 - 150
1985800	Primidone	91.2	101	P/P	40 - 150
1985800	Pyraclostrobin	80.2	81.6	P/P	40 - 150
1985800	Triclopyr	78.2	78.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P344454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986809	Fluoride	96.9	96.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1986212	Fluoride	96.2	95.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P344203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1985459	Organic Carbon	95.6	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985876	Turbidity	17.1	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P343765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985912	Turbidity	3.90	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986219	Calcium	0.595	Spike	P	0 - 20
1986219	Iron	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P343891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986219	Magnesium	1.68	Spike	P	0 - 20
1986219	Potassium	1.56	Spike	P	0 - 20
1986219	Sodium	0.309	Spike	P	0 - 20
1986219	Zinc	2.93	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P343891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986219	Arsenic	1.04	Spike	P	0 - 20
1986219	Cadmium	0.628	Spike	P	0 - 20
1986219	Chromium	1.25	Spike	P	0 - 20
1986219	Copper	1.10	Spike	P	0 - 20
1986219	Lead	1.87	Spike	P	0 - 20
1986219	Nickel	1.25	Spike	P	0 - 20
1986219	Silver	1.68	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985900	Chloride	0.0125	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P343858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985900	Sulfate	0.126	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985837	Ammonia-N	0.869	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P344168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985968	Ammonia-N	0.746	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343883

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985901	Kjeldahl Nitrogen	0.740	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P343885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985908	Kjeldahl Nitrogen	0.250	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P343907

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985836	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985907	Total-P	2.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P343978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985968	Total-P	0.479	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P343760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985833	O-Phosphate-P	0.803	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P343665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985613	AMPA	7.02	Spike	P	0 - 30
1985613	Endothall	1.56	Spike	P	0 - 30
1985613	Glufosinate	5.12	Spike	P	0 - 30
1985613	Glyphosate	1.11	Spike	P	0 - 30
1985613	Sucralose	7.89	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P343718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985800	2,4-D	4.35	Spike	P	0 - 30
1985800	Acetaminophen	4.74	Spike	P	0 - 30
1985800	Bentazon	0.982	Spike	P	0 - 30
1985800	Carbamazepine	4.92	Spike	P	0 - 30
1985800	Diuron	0.635	Spike	P	0 - 30
1985800	Fenuron	3.77	Spike	P	0 - 30
1985800	Fluridone	2.34	Spike	P	0 - 30
1985800	Hydrocodone	5.46	Spike	P	0 - 30
1985800	Imazapyr	1.13	Spike	P	0 - 30
1985800	Imidacloprid	3.76	Spike	P	0 - 30
1985800	Linuron	13.8	Spike	P	0 - 30
1985800	MCPP	7.45	Spike	P	0 - 30
1985800	Primidone	9.71	Spike	P	0 - 30
1985800	Pyraclostrobin	1.74	Spike	P	0 - 30
1985800	Triclopyr	0.270	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P343754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985827	Color (true)	2.48	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P343755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985905	Color (true)	2.96	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P344449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986809	Total Alkalinity	0.340	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P344451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986212	Total Alkalinity	0.229	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P344141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985900	TDS	0.0	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P344142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985912	TDS	3.46	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P344454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986809	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P344455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1986212	Fluoride	0.476	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P344203

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1985459	Organic Carbon	0.274	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: 1985940
Field Sample ID: 20030685

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	119	P	30 - 160
EPA 8321B	Diuron-d6	80.1	P	30 - 160
EPA 8321B	Endothall-d6	56.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	45.5	P	40 - 160
EPA 8321B	Primidone-d5	132	P	30 - 160
EPA 8321B	Sucralose-d6	72.2	P	40 - 160

Lab Sample ID: 1985941
Field Sample ID: 20030592

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	56.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.8	P	30 - 160
EPA 8321B	Diuron-d6	65.1	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1985941
Field Sample ID: 20030592

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Endothall-d6	47.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	48.0	P	40 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	68.3	P	40 - 160

Lab Sample ID: 1985942
Field Sample ID: 20030596

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	62.0	P	30 - 160
EPA 8321B	Endothall-d6	47.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	38.1	F	40 - 160
EPA 8321B	Primidone-d5	115	P	30 - 160
EPA 8321B	Sucralose-d6	66.7	P	40 - 160

Lab Sample ID: 1985943
Field Sample ID: 20030595

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	121	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	74.5	P	30 - 160
EPA 8321B	Endothall-d6	42.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.3	P	40 - 160
EPA 8321B	Primidone-d5	119	P	30 - 160
EPA 8321B	Sucralose-d6	133	P	40 - 160

Lab Sample ID: 1985944
Field Sample ID: 20030852

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	57.9	P	30 - 160
EPA 8321B	Endothall-d6	59.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	47.0	P	40 - 160
EPA 8321B	Primidone-d5	110	P	30 - 160
EPA 8321B	Sucralose-d6	75.7	P	40 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A83267

Included Lab Sample IDs: 1985900, 1985903, 1985904, 1985905, 1985912, 1985913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	98.8	P/P	90 - 110
Chloride	98.4	100	P/P	90 - 110
Sulfate	100	99.2	P/P	90 - 110
Sulfate	98.9	100	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A83349

Included Lab Sample IDs: 1985900, 1985903, 1985904, 1985905, 1985912, 1985913

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A83350

Included Lab Sample IDs: 1985902, 1985909, 1985910, 1985911, 1985916, 1985917

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A83351

Included Lab Sample IDs: 1985900, 1985903, 1985904, 1985905, 1985912, 1985913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.5	P/P	95 - 105
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A83370

Included Lab Sample IDs: 1985940, 1985941, 1985942, 1985943, 1985944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.4	83.2	P/P	60 - 150
Endothall	87.6	90.0	P/P	60 - 150
Glufosinate	76.6	76.5	P/P	60 - 150
Glyphosate	103	92.2	P/P	60 - 150
Sucralose	104	92.8	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A83402

Included Lab Sample IDs: 1985901, 1985906, 1985907, 1985908, 1985914, 1985915

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83417

Included Lab Sample IDs: 1985901, 1985906, 1985907

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83417

Included Lab Sample IDs: 1985901, 1985906, 1985907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A83432

Included Lab Sample IDs: 1985953, 1985954, 1985955, 1985956, 1985957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	102	101	P/P	90 - 110
Cadmium	99.2	101	P/P	90 - 110
Chromium	98.3	98.6	P/P	90 - 110
Copper	99.7	98.8	P/P	90 - 110
Lead	98.2	98.6	P/P	90 - 110
Nickel	100	98.2	P/P	90 - 110
Silver	99.5	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A83433

Included Lab Sample IDs: 1985953, 1985954, 1985955, 1985956, 1985957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	97.2	P/P	90 - 110
Iron	99.3	98.9	P/P	90 - 110
Magnesium	100	99.8	P/P	90 - 110
Potassium	96.7	94.6	P/P	90 - 110
Sodium	96.6	95.2	P/P	90 - 110
Zinc	99.1	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83447

Included Lab Sample IDs: 1985901, 1985914, 1985915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	104	P/P	90 - 110
Total-P	103	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83454

Included Lab Sample IDs: 1985901, 1985906, 1985907

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A83473

Included Lab Sample IDs: 1985906, 1985907, 1985908

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A83490

Included Lab Sample IDs: 1985908, 1985914, 1985915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A83491

Included Lab Sample IDs: 1985908, 1985914, 1985915

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

Reference Method: SM 5310 B-00

Run ID: A83500

Included Lab Sample IDs: 1985901, 1985906, 1985907, 1985908, 1985914, 1985915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.8	P/P	90 - 110
Organic Carbon	98.2	97.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A83593

Included Lab Sample IDs: 1985900, 1985903, 1985904, 1985905, 1985912, 1985913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.4	P/P	90 - 110
Total Alkalinity	98.4	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A83593

Included Lab Sample IDs: 1985900, 1985903, 1985904, 1985905, 1985912, 1985913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.0	P/P	90 - 110
Fluoride	99.0	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A83753

Included Lab Sample IDs: 1985940, 1985941, 1985942, 1985943, 1985944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	102	105	P/P	50 - 150
2,4-D	103	102	P/P	50 - 150
Acetaminophen	109	107	P/P	60 - 150
Bentazon	132	136	P/P	50 - 150
Bentazon	136	140	P/P	50 - 150
Carbamazepine	100	117	P/P	60 - 150
Diuron	86.2	106	P/P	60 - 150
Fenuron	117	116	P/P	60 - 150
Fluridone	104	103	P/P	60 - 160
Hydrocodone	112	112	P/P	60 - 150
Imazapyr	122	116	P/P	50 - 150
Imidacloprid	108	108	P/P	60 - 150
Linuron	112	109	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A83753

Included Lab Sample IDs: 1985940, 1985941, 1985942, 1985943, 1985944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	106	105	P/P	50 - 150
MCP	111	106	P/P	50 - 150
Primidone	95.4	98.3	P/P	60 - 150
Pyraclostrobin	101	102	P/P	60 - 150
Triclopyr	114	115	P/P	50 - 160
Triclopyr	115	108	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A83769

Included Lab Sample IDs: 1985942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	111	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A83883

Included Lab Sample IDs: 1985944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	92.4	106	P/P	50 - 150

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS	MS	MS		
EPA 180.1 Rev. 2.0	Turbidity					17.1	
	Turbidity					3.90	
EPA 200.7 Rev. 4.4	Calcium	101	97.1	98.1			0.595
	Iron	106	103	103	102		1.23
	Magnesium	102	100	99.4			1.68
	Potassium	99.9	95.5	97.2	95.4		1.56
	Sodium	96.9	94.7	95.9			0.309
	Zinc	98.0	97.0	93.8	96.6		2.93
EPA 200.8 Rev. 5.4	Arsenic	102	103	102	103		1.04
	Cadmium	98.2	102	103	102		0.628
	Chromium	95.0	97.0	95.6	96.9		1.25
	Copper	98.3	96.5	94.5	95.5		1.10
	Lead	96.5	99.6	97.3	99.2		1.87
	Nickel	101	99.1	97.4	98.7		1.25
	Silver	99.2	99.2	98.8	100		1.68
EPA 300.0 Rev. 2.1	Chloride	96.2				0.0125	
	Sulfate	95.6	91.3	92.6		0.126	
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.3	96.3			0.869
	Ammonia-N	103	102	103			0.746
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	102	100			0.740

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	101	102		0.250
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	102	103		0.487
EPA 365.1 Rev. 2.0	Total-P	103	100	103		2.21
	Total-P	102	101	100		0.479
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.2	100		0.803
EPA 8321B	2,4-D	95.8	73.2	69.0		4.35
	Acetaminophen	94.1	105	110		4.74
	AMPA	82.0	71.3	64.8		7.02
	Bentazon	105	43.0	42.4		0.982
	Carbamazepine	104	77.0	80.9		4.92
	Diuron	83.2	69.8	69.4		0.635
	Endothall	86.7	91.1	89.7		1.56
	Fenuron	112	75.8	78.8		3.77
	Fluridone	90.0	74.5	76.3		2.34
	Glufosinate	61.2	86.7	91.3		5.12
	Glyphosate	68.7	79.3	78.2		1.11
	Hydrocodone	107	108	114		5.46
	Imazapyr	120				1.13
	Imidacloprid	114	193	201		3.76
	Linuron	98.9	88.0	101		13.8
	MCPP	98.6	70.2	65.1		7.45
	Primidone	105	91.2	101		9.71
	Pyraclostrobin	84.1	80.2	81.6		1.74
	Sucralose	105	71.3	65.1		7.89
	Triclopyr	105	78.2	78.0		0.270
SM 2120 B	Color (true)				2.48	
	Color (true)				2.96	
SM 2320 B-97	Total Alkalinity	102			0.340	
	Total Alkalinity	102			0.229	
SM 2540 C-97	TDS				0.0	
	TDS				3.46	
SM 4500 F-C-97	Fluoride	94.7	96.9	96.1		0.476
	Fluoride	95.2	96.2	95.6		0.476
SM 5310 B-00	Organic Carbon	95.4	95.6	95.0		0.274

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1985953, 1985954, 1985955, 1985956, 1985957
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1985953, 1985954, 1985955, 1985956, 1985957
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1985901, 1985906, 1985907, 1985908, 1985914, 1985915
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1985901, 1985906, 1985907, 1985908, 1985914, 1985915
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1985901, 1985906, 1985907, 1985908, 1985914, 1985915

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1985901, 1985906, 1985907, 1985908, 1985914, 1985915
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1985902, 1985909, 1985910, 1985911, 1985916, 1985917
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1985940, 1985941, 1985942, 1985943, 1985944
SM 2120 B / E31780	True Color measured at 450 nm	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1985901, 1985906, 1985907, 1985908, 1985914, 1985915

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	04/19/2018			04/19/2018 16:36	William L. Brown IV	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
EPA 200.7 Rev. 4.4	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 13:43	Betina Topolski	1985953
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 13:51	Betina Topolski	1985954
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 13:58	Betina Topolski	1985955
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 14:06	Betina Topolski	1985956
EPA 200.8 Rev. 5.4	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 14:13	Betina Topolski	1985957
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 16:11	Nadine Brooks	1985953
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 16:20	Nadine Brooks	1985954
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 16:30	Nadine Brooks	1985955
EPA 300.0 Rev. 2.1	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 16:39	Nadine Brooks	1985956
	04/19/2018	04/23/2018 13:40	Elliott D. Healy	04/24/2018 16:49	Nadine Brooks	1985957
	04/19/2018			04/20/2018 20:13	Lipi Saha	1985900
	04/19/2018			04/20/2018 21:13	Lipi Saha	1985903
EPA 350.1 Rev. 2.0	04/19/2018			04/20/2018 21:25	Lipi Saha	1985904
	04/19/2018			04/20/2018 21:37	Lipi Saha	1985905
	04/19/2018			04/20/2018 21:49	Lipi Saha	1985912
	04/19/2018			04/20/2018 22:25	Lipi Saha	1985913
EPA 351.2 Rev. 2.0	04/19/2018			04/24/2018 13:29	Ping Hua	1985908
	04/19/2018			04/24/2018 13:34	Ping Hua	1985914
	04/19/2018			04/24/2018 13:35	Ping Hua	1985915
	04/19/2018			04/24/2018 14:36	Adrian Shelby	1985901
EPA 353.2 Rev. 2.0	04/19/2018			04/24/2018 14:37	Adrian Shelby	1985906
	04/19/2018			04/24/2018 14:39	Adrian Shelby	1985907
	04/19/2018	04/23/2018 11:15	Adrian Shelby	04/24/2018 11:57	Joseph Suarez	1985901
	04/19/2018	04/23/2018 11:15	Adrian Shelby	04/24/2018 12:02	Joseph Suarez	1985906
EPA 365.1 Rev. 2.0	04/19/2018	04/23/2018 11:15	Adrian Shelby	04/24/2018 12:03	Joseph Suarez	1985907
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:41	Joseph Suarez	1985908
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:45	Joseph Suarez	1985914
	04/19/2018	04/23/2018 16:00	Adrian Shelby	04/25/2018 08:47	Joseph Suarez	1985915
EPA 365.1 Rev. 2.0	04/19/2018			04/23/2018 14:16	Lauren Bottorf	1985901
	04/19/2018			04/23/2018 14:17	Lauren Bottorf	1985906
	04/19/2018			04/23/2018 14:18	Lauren Bottorf	1985907
	04/19/2018			04/23/2018 14:19	Lauren Bottorf	1985908
EPA 365.1 Rev. 2.0	04/19/2018			04/23/2018 14:21	Lauren Bottorf	1985914
	04/19/2018			04/23/2018 14:22	Lauren Bottorf	1985915
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:23	Beverly Y. Sanders	1985901
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:26	Beverly Y. Sanders	1985914
EPA 365.1 Rev. 2.0	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 10:35	Beverly Y. Sanders	1985915
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 13:15	Beverly Y. Sanders	1985906

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 13:16	Beverly Y. Sanders	1985907
	04/19/2018	04/24/2018 15:27	Sima Feizi	04/25/2018 13:17	Beverly Y. Sanders	1985908
EPA 365.1 Rev. 2.0 dissolved	04/19/2018			04/19/2018 15:44	Megan Treadwell	1985902
	04/19/2018			04/19/2018 15:45	Megan Treadwell	1985909, 1985910
	04/19/2018			04/19/2018 15:46	Megan Treadwell	1985911
	04/19/2018			04/19/2018 15:47	Megan Treadwell	1985916
	04/19/2018			04/19/2018 15:48	Megan Treadwell	1985917
EPA 8321B	04/19/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 21:21	S. M. Reddy	1985940
	04/19/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 21:36	S. M. Reddy	1985941
	04/19/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 21:52	S. M. Reddy	1985942
	04/19/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 22:08	S. M. Reddy	1985943
	04/19/2018	04/19/2018 12:30	Hoor Shaik	04/19/2018 22:24	S. M. Reddy	1985944
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/04/2018 02:47	Juyoung Kim	1985940
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/04/2018 03:56	Juyoung Kim	1985941
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/04/2018 04:31	Juyoung Kim	1985942
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/04/2018 05:05	Juyoung Kim	1985943
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/04/2018 05:40	Juyoung Kim	1985944
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/06/2018 09:33	Juyoung Kim	1985940
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/06/2018 10:07	Juyoung Kim	1985941
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/06/2018 10:42	Juyoung Kim	1985942
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/06/2018 11:17	Juyoung Kim	1985943
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/06/2018 11:51	Juyoung Kim	1985944
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/08/2018 13:30	Juyoung Kim	1985942
	04/19/2018	04/24/2018 10:00	Hoor Shaik	05/10/2018 20:58	Juyoung Kim	1985944
SM 2120 B	04/19/2018			04/19/2018 14:31	Tanya Welborn	1985900
	04/19/2018			04/19/2018 14:32	Tanya Welborn	1985903
	04/19/2018			04/19/2018 14:33	Tanya Welborn	1985904
	04/19/2018			04/19/2018 14:37	Tanya Welborn	1985905, 1985912
	04/19/2018			04/19/2018 14:38	Tanya Welborn	1985913
SM 2320 B-97	04/19/2018			05/01/2018 18:25	Dale L. Simmons	1985900
	04/19/2018			05/01/2018 18:35	Dale L. Simmons	1985903
	04/19/2018			05/01/2018 19:11	Dale L. Simmons	1985904
	04/19/2018			05/01/2018 20:11	Dale L. Simmons	1985905
	04/19/2018			05/01/2018 20:21	Dale L. Simmons	1985912
SM 2540 C-97	04/19/2018			05/01/2018 20:31	Dale L. Simmons	1985913
	04/19/2018			04/20/2018 18:00	William L. Brown IV	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 2540 D-97	04/19/2018			04/20/2018 18:00	William L. Brown IV	1985900, 1985903, 1985904, 1985905, 1985912, 1985913
SM 4500 F-C-97	04/19/2018			05/01/2018 18:25	Dale L. Simmons	1985900

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	04/19/2018			05/01/2018 18:35	Dale L. Simmons	1985903
	04/19/2018			05/01/2018 19:11	Dale L. Simmons	1985904
	04/19/2018			05/01/2018 20:11	Dale L. Simmons	1985905
	04/19/2018			05/01/2018 20:21	Dale L. Simmons	1985912
	04/19/2018			05/01/2018 20:31	Dale L. Simmons	1985913
SM 5310 B-00	04/19/2018			04/25/2018 15:17	Megan Treadwell	1985901
	04/19/2018			04/25/2018 15:32	Megan Treadwell	1985906
	04/19/2018			04/25/2018 16:14	Megan Treadwell	1985907
	04/19/2018			04/25/2018 16:31	Megan Treadwell	1985908
	04/19/2018			04/25/2018 16:46	Megan Treadwell	1985914
	04/19/2018			04/25/2018 17:00	Megan Treadwell	1985915