

Chemical Analysis Report

NE-DIST-2018-12-11-01

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

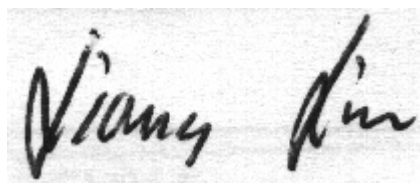
Event Description: **LSJR Coast**
Request ID: **RQ-2018-11-26-13**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Jacksonville, FL 32256-7577
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-DEC-2018 15:32

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: HOPKINS CR AT KINGS RD

Collection Date/Time: 12/10/2018 13:00

Field ID: 20030758

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047732	EPA 8321B	2,4-D	0.0027	I	ug/L	P355712	
		Bentazon	0.0035		ug/L	P355712	
		MCPP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0083		ug/L	P355712	
		Diuron	0.0057	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.046		ug/L	P355712	
		Carbamazepine**	0.0010	I	ug/L	P355712	
		Fluridone**	0.0050		ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.19		ug/L	P355853	
		Acesulfame K**	0.10	U	ug/L	P355853	

Sample Location: GREENFIELD CREEK @ END OF BUCCANEER Collection Date/Time: 12/10/2018 11:30

Field ID: G2NE1154

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047733	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	0.0018	I	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0039	I	ug/L	P355712	
		Diuron	0.0043	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.028		ug/L	P355712	
		Carbamazepine**	8.4E-04	I	ug/L	P355712	
		Fluridone**	0.0020		ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.19		ug/L	P355853	
		Acesulfame K**	0.10	U	ug/L	P355853	

Sample Location: SHERMAN CR AT BRIDGE

Collection Date/Time: 12/10/2018 12:15

Field ID: 27010002

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047734	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	0.0017	I	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0038	I	ug/L	P355712	
		Diuron	0.0035	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.026		ug/L	P355712	
		Carbamazepine**	8.0E-04	U	ug/L	P355712	
		Fluridone**	0.0018		ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.17		ug/L	P355853	
		Acesulfame K**	0.10	U	ug/L	P355853	

Sample Location: GREENFIELD CREEK AT WONDERWOOD

Collection Date/Time: 12/10/2018 11:45

Field ID: G2NE1137

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047735	EPA 8321B	2,4-D	0.0022	I	ug/L	P355712	
		Bentazon	0.0024	I	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0049	I	ug/L	P355712	
		Diuron	0.0053	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.037		ug/L	P355712	
		Carbamazepine**	8.1E-04	I	ug/L	P355712	
		Fluridone**	0.0029		ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.24		ug/L	P355853	
		Acesulfame K**	0.10	U	ug/L	P355853	

Sample Location: SISTERS CREEK @ HECKSCHER DR.

Collection Date/Time: 12/10/2018 10:35

Field ID: 20030491

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047707	EPA 180.1 Rev. 2.0	Turbidity	5.0	A	NTU	P355975	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P356130	
	SM 2540 D-97	TSS	4	I	mg/L	P356483	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P356133	
2047708	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P355972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P356092	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P356274	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P356179	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P356072	
2047709	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P356029	
2047736	EPA 200.7 Rev. 4.4	Iron	270	I	ug/L	P356053	
		Zinc	20	U	ug/L	P356053	
	EPA 200.8 Rev. 5.4	Arsenic	2.98		ug/L	P356053	
		Cadmium	0.080	U	ug/L	P356053	
		Chromium	1.6	U	ug/L	P356053	
		Copper	0.80	U	ug/L	P356053	
		Lead	0.50	U	ug/L	P356053	
		Nickel	0.80	U	ug/L	P356053	
		Silver	0.040	U	ug/L	P356053	

Ref. Method and Comment:

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: P355975

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356053

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356053

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 350.1 Rev. 2.0
Batch ID: P355972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355712

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355853

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P356130

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

Reference Method: SM 2540 D-97
Batch ID: P356483

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P356072

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: P356053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	97.3		P	85 - 115
Zinc	91.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356053

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	108		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	103		P	85 - 115
Copper	105		P	85 - 115
Lead	109		P	85 - 115
Nickel	105		P	85 - 115
Silver	107		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

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: P356179

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

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

Reference Method: EPA 8321B
Batch ID: P355712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.2		P	40 - 150
Acetaminophen	92.6		P	30 - 150
Bentazon	74.7		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P355712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	80.8		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	64.2		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	78.5		P	40 - 160
Linuron	76.1		P	40 - 150
MCPP	95.0		P	40 - 150
Naproxen	77.5		P	40 - 150
Primidone	86.2		P	40 - 150
Pyraclostrobin	52.3		P	40 - 150
Triclopyr	58.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
Sucralose	99.8		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P356130

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

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356072

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	107		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046770	Iron	102	103	P/P	70 - 130
2046770	Zinc	95.8	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356053

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046770	Arsenic	115	115	P/P	70 - 130
2046770	Cadmium	102	101	P/P	70 - 130
2046770	Chromium	93.4	92.8	P/P	70 - 130
2046770	Copper	97.5	97.4	P/P	70 - 130
2046770	Lead	104	105	P/P	70 - 130
2046770	Nickel	102	100	P/P	70 - 130
2046770	Silver	99.7	97.7	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046867	Ammonia-N	101	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	104	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046750	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047694	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047852	O-Phosphate-P	93.4	93.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P355712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	2,4-D	68.5	75.9	P/P	40 - 150
2046826	Acetaminophen	102	125	P/P	30 - 150
2046826	Bentazon	42.1	33.6	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	Carbamazepine	76.6	72.1	P/P	40 - 150
2046826	Diuron	62.0	62.4	P/P	40 - 150
2046826	Fenuron	92.2	104	P/P	40 - 150
2046826	Fluridone	104	108	P/P	40 - 150
2046826	Hydrocodone	100	103	P/P	40 - 150
2046826	Ibuprofen	54.4	61.9	P/P	40 - 150
2046826	Imazapyr	109	127	P/P	40 - 150
2046826	Imidacloprid	129	134	P/P	40 - 160
2046826	Linuron	59.3	61.2	P/P	40 - 150
2046826	MCPP	83.5	92.5	P/P	40 - 150
2046826	Naproxen	56.8	69.1	P/P	40 - 150
2046826	Primidone	96.9	91.6	P/P	40 - 150
2046826	Pyraclostrobin	51.2	59.3	P/P	40 - 150
2046826	Triclopyr	44.5	49.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	Acesulfame K	101	113	P/P	40 - 150
2046826	Sucralose	95.3	106	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047831	Fluoride	97.4	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P356072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047708	Organic Carbon	108	108	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047707	Turbidity	2.82	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P356053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046770	Iron	0.720	Spike	P	0 - 20
2046770	Zinc	4.77	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P356053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046770	Arsenic	0.157	Spike	P	0 - 20
2046770	Cadmium	0.798	Spike	P	0 - 20
2046770	Chromium	0.595	Spike	P	0 - 20
2046770	Copper	0.110	Spike	P	0 - 20
2046770	Lead	0.357	Spike	P	0 - 20
2046770	Nickel	1.13	Spike	P	0 - 20
2046770	Silver	2.03	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046867	Ammonia-N	4.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	4.95	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046750	NO2NO3-N	0.321	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047694	Total-P	0.632	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047852	O-Phosphate-P	0.269	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P355712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	2,4-D	7.32	Spike	P	0 - 30
2046826	Acetaminophen	15.5	Spike	P	0 - 30
2046826	Bentazon	13.6	Spike	P	0 - 30
2046826	Carbamazepine	4.42	Spike	P	0 - 30
2046826	Diuron	0.455	Spike	P	0 - 30
2046826	Fenuron	11.7	Spike	P	0 - 30
2046826	Fluridone	4.37	Spike	P	0 - 30
2046826	Hydrocodone	2.63	Spike	P	0 - 30
2046826	Ibuprofen	12.9	Spike	P	0 - 30
2046826	Imazapyr	7.43	Spike	P	0 - 30
2046826	Imidacloprid	3.24	Spike	P	0 - 30
2046826	Linuron	3.20	Spike	P	0 - 30
2046826	MCP	9.16	Spike	P	0 - 30
2046826	Naproxen	19.6	Spike	P	0 - 30
2046826	Primidone	5.64	Spike	P	0 - 30
2046826	Pyraclostrobin	14.6	Spike	P	0 - 30
2046826	Triclopyr	11.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	Acesulfame K	9.46	Spike	P	0 - 30
2046826	Sucralose	7.76	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P356130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047831	Total Alkalinity	0.158	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P356133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047831	Fluoride	0.940	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P356072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047708	Organic Carbon	0.505	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: 2047732
Field Sample ID: 20030758

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	153	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.7	P	30 - 160
EPA 8321B	Diuron-d6	85.9	P	30 - 160
EPA 8321B	Endothall-d6	83.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	76.2	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	57.2	P	40 - 160

Lab Sample ID: 2047733
Field Sample ID: G2NE1154

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.7	P	30 - 160
EPA 8321B	Diuron-d6	77.7	P	30 - 160
EPA 8321B	Endothall-d6	86.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	58.4	P	30 - 160
EPA 8321B	Primidone-d5	82.8	P	30 - 160
EPA 8321B	Sucralose-d6	68.7	P	40 - 160

Lab Sample ID: 2047734
Field Sample ID: 27010002

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.5	P	30 - 160
EPA 8321B	Diuron-d6	73.0	P	30 - 160
EPA 8321B	Endothall-d6	92.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.0	P	30 - 160
EPA 8321B	Primidone-d5	97.8	P	30 - 160
EPA 8321B	Sucralose-d6	73.1	P	40 - 160

Lab Sample ID: 2047735
Field Sample ID: G2NE1137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.7	P	30 - 160
EPA 8321B	Diuron-d6	88.1	P	30 - 160
EPA 8321B	Endothall-d6	92.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.8	P	30 - 160
EPA 8321B	Primidone-d5	94.1	P	30 - 160
EPA 8321B	Sucralose-d6	76.9	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88285

Included Lab Sample IDs: 2047708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88286

Included Lab Sample IDs: 2047707

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

Reference Method: EPA 8321B

Run ID: A88298

Included Lab Sample IDs: 2047732, 2047733, 2047734, 2047735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	69.2	101	P/P	60 - 150
Acesulfame K	92.8	69.2	P/P	60 - 150

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88299

Included Lab Sample IDs: 2047709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88317

Included Lab Sample IDs: 2047708

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

Reference Method: EPA 8321B

Run ID: A88326

Included Lab Sample IDs: 2047732, 2047733, 2047734, 2047735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	105	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A88339

Included Lab Sample IDs: 2047707

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

Reference Method: SM 4500 F-C-97

Run ID: A88339

Included Lab Sample IDs: 2047707

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88373

Included Lab Sample IDs: 2047736

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

Reference Method: EPA 8321B

Run ID: A88378

Included Lab Sample IDs: 2047732, 2047733, 2047734, 2047735

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.5	85.5	P/P	50 - 150
Acetaminophen	127	94.0	P/P	60 - 160
Bentazon	87.3	75.6	P/P	50 - 160
Carbamazepine	110	105	P/P	60 - 160
Diuron	107	91.5	P/P	60 - 150
Fenuron	123	121	P/P	60 - 150
Fluridone	125	121	P/P	60 - 160
Hydrocodone	117	93.2	P/P	60 - 150
Ibuprofen	85.6	82.1	P/P	50 - 160
Imazapyr	108	90.9	P/P	50 - 150
Imidacloprid	89.3	92.7	P/P	60 - 160
Linuron	108	101	P/P	60 - 150
MCPP	86.0	80.4	P/P	50 - 150
Naproxen	79.8	77.7	P/P	50 - 160
Primidone	119	110	P/P	60 - 160
Pyraclostrobin	106	104	P/P	60 - 150
Triclopyr	85.8	84.0	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88381

Included Lab Sample IDs: 2047708

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88382

Included Lab Sample IDs: 2047708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88387

Included Lab Sample IDs: 2047736

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88421

Included Lab Sample IDs: 2047736

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88421

Included Lab Sample IDs: 2047736

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	106	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	102	101	P/P	90 - 110
Copper	105	104	P/P	90 - 110
Lead	107	105	P/P	90 - 110
Nickel	105	104	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88425

Included Lab Sample IDs: 2047708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	100	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.82	
EPA 200.7 Rev. 4.4	Iron	97.3	102	103			0.720
	Zinc	91.8	95.8	101			4.77
EPA 200.8 Rev. 5.4	Arsenic	108	115	115			0.157
	Cadmium	105	102	101			0.798
	Chromium	103	93.4	92.8			0.595
	Copper	105	97.5	97.4			0.110
	Lead	109	104	105			0.357
	Nickel	105	102	100			1.13
	Silver	107	99.7	97.7			2.03
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	101	96.0			4.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	104	98.2			4.95
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	104	103			0.321
EPA 365.1 Rev. 2.0	Total-P	105	101	100			0.632
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	93.4	93.7			0.269
EPA 8321B	2,4-D	76.2	68.5	75.9			7.32
	Acesulfame K	118	101	113			9.46
	Acetaminophen	92.6	102	125			15.5
	Bentazon	74.7	42.1	33.6			13.6
	Carbamazepine	80.8	76.6	72.1			4.42
	Diuron	81.8	62.0	62.4			0.455
	Fenuron	112	92.2	104			11.7
	Fluridone	107	104	108			4.37
	Hydrocodone	102	100	103			2.63
	Ibuprofen	64.2	54.4	61.9			12.9
	Imazapyr	112	109	127			7.43
	Imidacloprid	78.5	129	134			3.24
	Linuron	76.1	59.3	61.2			3.20
	MCP	95.0	83.5	92.5			9.16
	Naproxen	77.5	56.8	69.1			19.6
	Primidone	86.2	96.9	91.6			5.64
	Pyraclostrobin	52.3	51.2	59.3			14.6
	Sucralose	99.8	95.3	106			7.76
	Triclopyr	58.3	44.5	49.9			11.4
SM 2320 B-97	Total Alkalinity	101				0.158	
SM 4500 F-C-97	Fluoride	101	97.4	98.8			0.940
SM 5310 B-00	Organic Carbon	107	108	108			0.505

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2047707
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2047736
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2047736
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2047708
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2047708
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2047708

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2047708
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2047709
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2047732, 2047733, 2047734, 2047735
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2047707
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2047707
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2047707
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2047708

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	12/11/2018			12/11/2018 16:59	Megan Treadwell	2047707
EPA 200.7 Rev. 4.4	12/11/2018	12/12/2018 16:20	Elliott D. Healy	12/14/2018 19:40	Martin Acosta	2047736
	12/11/2018	12/12/2018 16:20	Elliott D. Healy	12/17/2018 14:32	Martin Acosta	2047736
EPA 200.8 Rev. 5.4	12/11/2018	12/12/2018 16:20	Elliott D. Healy	12/19/2018 11:21	Allison Taylor	2047736
	12/11/2018	12/12/2018 16:20	Elliott D. Healy	12/19/2018 14:51	Allison Taylor	2047736
EPA 350.1 Rev. 2.0	12/11/2018			12/11/2018 13:45	Ping Hua	2047708
EPA 351.2 Rev. 2.0	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:37	Chelsea Hernandez	2047708
EPA 353.2 Rev. 2.0	12/11/2018			12/14/2018 11:42	Beverly Y. Sanders	2047708
EPA 365.1 Rev. 2.0	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:55	Beverly Y. Sanders	2047708
EPA 365.1 Rev. 2.0 dissolved	12/11/2018			12/11/2018 17:18	Jhamieka S. Greenwood	2047709
EPA 8321B	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 18:21	Rebecca Ware	2047732
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 18:35	Rebecca Ware	2047733
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 18:49	Rebecca Ware	2047734
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 19:16	Rebecca Ware	2047735
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 20:18	Mohammad Ghaffari	2047732
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 20:32	Mohammad Ghaffari	2047733
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 20:46	Mohammad Ghaffari	2047734
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 20:59	Mohammad Ghaffari	2047735
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 16:02	Juyoung Kim	2047732
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 16:36	Juyoung Kim	2047733
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 17:11	Juyoung Kim	2047734
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 17:46	Juyoung Kim	2047735
SM 2320 B-97	12/11/2018			12/13/2018 04:52	Lauren Bottorf	2047707
SM 2540 D-97	12/11/2018			12/13/2018 23:45	Yijie Li	2047707
SM 4500 F-C-97	12/11/2018			12/13/2018 04:11	Lauren Bottorf	2047707
SM 5310 B-00	12/11/2018			12/13/2018 03:35	Megan Treadwell	2047708