

Chemical Analysis Report

NE-DIST-2018-09-25-01

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

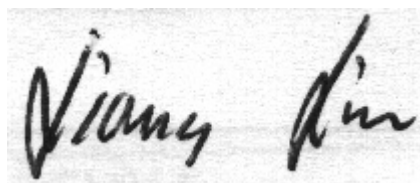
Event Description: **LSJR Downtown boat 2**
Request ID: **RQ-2018-09-17-12**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-OCT-2018 14:34

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: 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: Ortega R BR Roosevelt Blvd US 17

Collection Date/Time: 09/24/2018 09:40

Field ID: 20030077

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027949	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P352234	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P352644	
	SM 2540 D-97	TSS	10	I	mg/L	P352594	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P352649	
2027951	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P352622	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P352398	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P352267	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P352365	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P352349	
2027953	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.093		mg P/L	P352222	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Fishing CR SE Forrest HS E Perrine Dr

Collection Date/Time: 09/24/2018 10:20

Field ID: 20030081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027974	EPA 8321B	2,4-D	0.020		ug/L	P351946	
		Bentazon	0.0028	I	ug/L	P351946	
		MCP	0.0027	I	ug/L	P351946	
		Triclopyr**	0.0040	U	ug/L	P351946	
		Imidacloprid	0.040		ug/L	P351946	
		Diuron	0.0088		ug/L	P351946	
		Pyraclostrobin**	0.0020	U	ug/L	P351946	
		Primidone**	0.0040	U	ug/L	P351946	
		Linuron	0.0040	U	ug/L	P351946	
		Acetaminophen**	0.0080	U	ug/L	P351946	
		Fenuron	0.016	U	ug/L	P351946	
		Imazapyr**	0.63		ug/L	P351946	
		Carbamazepine**	8.9E-04	I	ug/L	P351946	
		Fluridone**	0.013		ug/L	P351946	
		Hydrocodone**	8.0E-04	U	ug/L	P351946	
		Naproxen**	0.0080	U	ug/L	P351946	
		Ibuprofen**	0.020	U	ug/L	P351946	
		Sucralose**	0.57		ug/L	P352201	
		Acesulfame K**	0.10	U	ug/L	P352201	

Sample Location: Fishing Crk at Public Boat Ramp Off Seaboard Ave **Collection Date/Time: 09/24/2018 10:45**

Field ID: 20030617

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027975	EPA 8321B	2,4-D	0.038		ug/L	P351946	
		Bentazon	0.0027	I	ug/L	P351946	
		MCP	0.0064	I	ug/L	P351946	
		Triclopyr**	0.0040	U	ug/L	P351946	
		Imidacloprid	0.015		ug/L	P351946	
		Diuron	0.012		ug/L	P351946	
		Pyraclostrobin**	0.0020	U	ug/L	P351946	
		Primidone**	0.0040	U	ug/L	P351946	
		Linuron	0.0040	U	ug/L	P351946	
		Acetaminophen**	0.0080	U	ug/L	P351946	
		Fenuron	0.016	U	ug/L	P351946	
		Imazapyr**	0.18		ug/L	P351946	
		Carbamazepine**	0.0010	I	ug/L	P351946	
		Fluridone**	0.010		ug/L	P351946	
		Hydrocodone**	8.0E-04	U	ug/L	P351946	
		Naproxen**	0.0080	U	ug/L	P351946	
		Ibuprofen**	0.020	U	ug/L	P351946	
		Sucralose**	0.49		ug/L	P352201	
		Acesulfame K**	0.10	U	ug/L	P352201	

Sample Location: Fishing CR SE Forrest HS E Perrine Fishing Dr Collection Date/Time: 09/24/2018 10:25

Field ID: 20030081DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027976	EPA 8321B	2,4-D	0.022		ug/L	P351946	
		Bentazon	0.0030	I	ug/L	P351946	
		MCP	0.0029	I	ug/L	P351946	
		Triclopyr**	0.0040	U	ug/L	P351946	
		Imidacloprid	0.044		ug/L	P351946	
		Diuron	0.0088		ug/L	P351946	
		Pyraclostrobin**	0.0020	U	ug/L	P351946	
		Primidone**	0.0040	U	ug/L	P351946	
		Linuron	0.0040	U	ug/L	P351946	
		Acetaminophen**	0.0080	U	ug/L	P351946	
		Fenuron	0.016	U	ug/L	P351946	
		Imazapyr**	0.68		ug/L	P351946	
		Carbamazepine**	9.7E-04	I	ug/L	P351946	
		Fluridone**	0.014		ug/L	P351946	
		Hydrocodone**	8.0E-04	U	ug/L	P351946	
		Naproxen**	0.0080	U	ug/L	P351946	
		Ibuprofen**	0.020	U	ug/L	P351946	
		Sucralose**	0.57		ug/L	P352201	
		Acesulfame K**	0.10	U	ug/L	P352201	

Sample Location: Field Blank

Collection Date/Time: 09/24/2018 09:50

Field ID: BLANK082418

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2027950	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P352234	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P352644	
	SM 2540 D-97	TSS	2	U	mg/L	P352594	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P352649	
2027952	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P352622	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P352398	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P352267	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P352365	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P352349	
2027954	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P352222	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352234

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352622

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352398

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352365

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352222

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

Reference Method: EPA 8321B
Batch ID: P351946

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	8.0E-04	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351946

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P352201

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: P352644

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

Reference Method: SM 2540 D-97
Batch ID: P352594

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P352649

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P352349

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352622

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352398

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352267

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352365

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: P352222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.4		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P351946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.7		P	40 - 150
Acetaminophen	103		P	30 - 150
Bentazon	98.6		P	30 - 150
Carbamazepine	80.1		P	40 - 150
Diuron	71.0		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	113		P	40 - 150
Ibuprofen	92.5		P	40 - 150
Imazapyr	78.9		P	40 - 150
Imidacloprid	98.4		P	40 - 160
Linuron	65.0		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	80.9		P	40 - 150
Primidone	98.3		P	40 - 150
Pyraclostrobin	75.9		P	40 - 150
Triclopyr	98.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P352201

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: P352201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.8		P	40 - 150
Sucralose	107		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P352644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P352649

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P352349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P352622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027684	Ammonia-N	99.1	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P352398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027910	Kjeldahl Nitrogen	107	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P352267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027918	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P352365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027985	Total-P	98.0	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P352222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027988	O-Phosphate-P	94.4	95.4	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P351946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027603	2,4-D	116	88.0	P/P	40 - 150
2027603	Acetaminophen	95.6	116	P/P	30 - 150
2027603	Bentazon	39.3	30.7	P/P	30 - 150
2027603	Carbamazepine	61.9	61.1	P/P	40 - 150
2027603	Diuron	49.5	51.7	P/P	40 - 150
2027603	Fenuron	81.6	94.9	P/P	40 - 150
2027603	Fluridone	94.0	104	P/P	40 - 150
2027603	Hydrocodone	107	126	P/P	40 - 150
2027603	Ibuprofen	77.9	64.4	P/P	40 - 150
2027603	Imazapyr	100	117	P/P	40 - 150
2027603	Imidacloprid	158	154	P/P	40 - 160
2027603	Linuron	50.4	56.0	P/P	40 - 150
2027603	MCPP	121	102	P/P	40 - 150
2027603	Naproxen	75.7	70.4	P/P	40 - 150
2027603	Primidone	91.3	104	P/P	40 - 150
2027603	Pyraclostrobin	79.0	92.1	P/P	40 - 150
2027603	Triclopyr	115	98.7	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P352201

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

Reference Method: EPA 8321B
Batch ID: P352201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2028139	Acesulfame K	78.4	74.1	P/P	40 - 150
2028139	Sucralose	105	103	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P352649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2027917	Fluoride	97.3	97.3	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P352234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027898	Turbidity	3.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P352622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027684	Ammonia-N	1.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P352398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027910	Kjeldahl Nitrogen	2.10	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P352267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027918	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P352365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027985	Total-P	4.45	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P352222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027988	O-Phosphate-P	1.05	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P351946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027603	2,4-D	27.2	Spike	P	0 - 30
2027603	Acetaminophen	19.3	Spike	P	0 - 30
2027603	Bentazon	24.4	Spike	P	0 - 30
2027603	Carbamazepine	1.39	Spike	P	0 - 30
2027603	Diuron	4.30	Spike	P	0 - 30
2027603	Fenuron	15.1	Spike	P	0 - 30
2027603	Fluridone	9.90	Spike	P	0 - 30
2027603	Hydrocodone	16.4	Spike	P	0 - 30
2027603	Ibuprofen	18.9	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P351946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027603	Imazapyr	12.9	Spike	P	0 - 30
2027603	Imidacloprid	2.70	Spike	P	0 - 30
2027603	Linuron	10.7	Spike	P	0 - 30
2027603	MCPP	17.1	Spike	P	0 - 30
2027603	Naproxen	7.16	Spike	P	0 - 30
2027603	Primidone	13.0	Spike	P	0 - 30
2027603	Pyraclostrobin	15.3	Spike	P	0 - 30
2027603	Triclopyr	14.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P352201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028139	Acesulfame K	5.58	Spike	P	0 - 30
2028139	Sucralose	1.19	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P352644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027917	Total Alkalinity	0.121	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P352649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027917	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P352349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2027590	Organic Carbon	0.320	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: 2027974
Field Sample ID: 20030081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	66.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.6	P	30 - 160
EPA 8321B	Diuron-d6	42.1	P	30 - 160
EPA 8321B	Endothall-d6	99.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	63.0	P	30 - 160
EPA 8321B	Primidone-d5	77.2	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	40 - 160

Lab Sample ID: 2027975
Field Sample ID: 20030617

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	86.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.4	P	30 - 160
EPA 8321B	Diuron-d6	45.6	P	30 - 160
EPA 8321B	Endothall-d6	102	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.0	P	30 - 160
EPA 8321B	Primidone-d5	69.2	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	40 - 160

Lab Sample ID: 2027976
Field Sample ID: 20030081DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	59.3	P	30 - 160
EPA 8321B	Diuron-d6	47.0	P	30 - 160
EPA 8321B	Endothall-d6	112	P	40 - 160
EPA 8321B	Ibuprofen-d3	60.2	P	30 - 160
EPA 8321B	Primidone-d5	77.8	P	30 - 160
EPA 8321B	Sucralose-d6	125	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A86711

Included Lab Sample IDs: 2027953, 2027954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	98.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86716

Included Lab Sample IDs: 2027949, 2027950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	104	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86724

Included Lab Sample IDs: 2027951, 2027952

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

Reference Method: SM 5310 B-00

Run ID: A86745

Included Lab Sample IDs: 2027951, 2027952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86772

Included Lab Sample IDs: 2027952

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86773

Included Lab Sample IDs: 2027951

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86779

Included Lab Sample IDs: 2027951, 2027952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	102	P/P	90 - 110
Kjeldahl Nitrogen	97.6	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A86795

Included Lab Sample IDs: 2027974, 2027975, 2027976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	96.8	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86795

Included Lab Sample IDs: 2027974, 2027975, 2027976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.8	110	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86798

Included Lab Sample IDs: 2027974, 2027975, 2027976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.6	69.9	P/P	60 - 160
Acesulfame K	84.5	81.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86818

Included Lab Sample IDs: 2027974, 2027975, 2027976

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.2	97.4	P/P	50 - 150
Acetaminophen	92.8	89.1	P/P	60 - 160
Bentazon	89.3	95.5	P/P	50 - 160
Carbamazepine	105	101	P/P	60 - 160
Diuron	97.9	96.3	P/P	60 - 150
Fenuron	113	106	P/P	60 - 150
Fluridone	124	129	P/P	60 - 160
Hydrocodone	91.0	109	P/P	60 - 150
Ibuprofen	81.4	86.9	P/P	50 - 160
Imazapyr	103	94.7	P/P	50 - 150
Imidacloprid	94.5	98.3	P/P	60 - 150
Linuron	97.5	94.0	P/P	60 - 150
MCPP	96.9	97.2	P/P	50 - 150
Naproxen	109	102	P/P	50 - 160
Primidone	90.4	97.5	P/P	60 - 150
Pyraclostrobin	123	113	P/P	60 - 150
Triclopyr	97.5	99.1	P/P	50 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86854

Included Lab Sample IDs: 2027951, 2027952

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

Reference Method: SM 2320 B-97

Run ID: A86860

Included Lab Sample IDs: 2027949, 2027950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110
Total Alkalinity	99.8	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A86860

Included Lab Sample IDs: 2027949, 2027950

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	97.6	P/P	90 - 110
Fluoride	99.0	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					3.92	
EPA 350.1 Rev. 2.0	Ammonia-N	101	99.1	101			1.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	107	111			2.10
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.5	100			1.00
EPA 365.1 Rev. 2.0	Total-P	105	98.0	103			4.45
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.4	94.4	95.4			1.05
EPA 8321B	2,4-D	92.7	116	88.0			27.2
	Acesulfame K	76.8	78.4	74.1			5.58
	Acetaminophen	103	95.6	116			19.3
	Bentazon	98.6	39.3	30.7			24.4
	Carbamazepine	80.1	61.9	61.1			1.39
	Diuron	71.0	49.5	51.7			4.30
	Fenuron	105	81.6	94.9			15.1
	Fluridone	104	94.0	104			9.90
	Hydrocodone	113	107	126			16.4
	Ibuprofen	92.5	77.9	64.4			18.9
	Imazapyr	78.9	100	117			12.9
	Imidacloprid	98.4	158	154			2.70
	Linuron	65.0	50.4	56.0			10.7
	MCP	101	121	102			17.1
	Naproxen	80.9	75.7	70.4			7.16
	Primidone	98.3	91.3	104			13.0
	Pyraclostrobin	75.9	79.0	92.1			15.3
	Sucralose	107	105	103			1.19
	Triclopyr	98.1	115	98.7			14.8
SM 2320 B-97	Total Alkalinity	101				0.121	
SM 4500 F-C-97	Fluoride	97.1	97.3	97.3			0.0
SM 5310 B-00	Organic Carbon	94.5					0.320

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2027949, 2027950
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2027951, 2027952
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2027951, 2027952
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2027951, 2027952
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2027951, 2027952
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2027953, 2027954
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2027974, 2027975, 2027976
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2027949, 2027950
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2027949, 2027950
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2027949, 2027950
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2027951, 2027952

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	09/25/2018			09/25/2018 16:42	Megan Treadwell	2027949, 2027950
EPA 350.1 Rev. 2.0	09/25/2018			10/01/2018 11:43	Ping Hua	2027951
	09/25/2018			10/01/2018 11:44	Ping Hua	2027952
EPA 351.2 Rev. 2.0	09/25/2018	09/27/2018 15:15	Adrian Shelby	09/28/2018 12:25	Joseph Suarez	2027951
	09/25/2018	09/27/2018 15:15	Adrian Shelby	09/28/2018 12:29	Joseph Suarez	2027952
EPA 353.2 Rev. 2.0	09/25/2018			09/26/2018 09:38	Beverly Y. Sanders	2027952
	09/25/2018			09/26/2018 09:42	Beverly Y. Sanders	2027951
EPA 365.1 Rev. 2.0	09/25/2018	09/27/2018 11:30	Sima Feizi	09/28/2018 08:34	Beverly Y. Sanders	2027951
	09/25/2018	09/27/2018 11:30	Sima Feizi	09/28/2018 10:46	Beverly Y. Sanders	2027952
EPA 365.1 Rev. 2.0 dissolved	09/25/2018			09/25/2018 16:38	Julia Storbeck	2027953
	09/25/2018			09/25/2018 16:44	Julia Storbeck	2027954
EPA 8321B	09/25/2018	09/26/2018 09:00	Hoor Shaik	09/29/2018 11:22	Juyoung Kim	2027974
	09/25/2018	09/26/2018 09:00	Hoor Shaik	09/29/2018 11:56	Juyoung Kim	2027975
	09/25/2018	09/26/2018 09:00	Hoor Shaik	09/29/2018 12:31	Juyoung Kim	2027976
	09/25/2018	09/26/2018 09:00	Hoor Shaik	10/01/2018 17:36	Juyoung Kim	2027974
	09/25/2018	09/26/2018 09:00	Hoor Shaik	10/01/2018 18:11	Juyoung Kim	2027975
	09/25/2018	09/26/2018 09:00	Hoor Shaik	10/01/2018 18:45	Juyoung Kim	2027976
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/28/2018 15:46	Mohammad Ghaffari	2027974
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/28/2018 16:00	Mohammad Ghaffari	2027975
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/28/2018 16:30	Mohammad Ghaffari	2027976
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/29/2018 17:13	Mohammad Ghaffari	2027974
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/29/2018 17:28	Mohammad Ghaffari	2027975
	09/25/2018	09/28/2018 08:30	Mohammad Ghaffari	09/29/2018 17:57	Mohammad Ghaffari	2027976
SM 2320 B-97	09/25/2018			10/02/2018 12:41	Dale L. Simmons	2027950
	09/25/2018			10/02/2018 16:18	Dale L. Simmons	2027949
SM 2540 D-97	09/25/2018			09/28/2018 15:48	Yijie Li	2027949, 2027950
SM 4500 F-C-97	09/25/2018			10/02/2018 12:41	Dale L. Simmons	2027950
	09/25/2018			10/02/2018 16:18	Dale L. Simmons	2027949
SM 5310 B-00	09/25/2018			09/27/2018 03:24	Megan Treadwell	2027951
	09/25/2018			09/27/2018 03:37	Megan Treadwell	2027952