

Chemical Analysis Report

NE-DIST-2018-10-25-01

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

Event Description: **LSJR NorthSalt Boat2**
Request ID: **RQ-2018-10-15-12**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 16-NOV-2018 16:14

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: 10/24/2018 09:30

Field ID: 20030077

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2035978	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P353683	
	SM 2320 B-97	Total Alkalinity	65		mg CaCO3/L	P353899	
	SM 2540 D-97	TSS	6	IA	mg/L	P354034	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P353904	
2035979	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P354091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P354057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P353965	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P354028	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P354153	
2035980	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P353690	

Ref. Method and Comment:

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

Sample Location: FISHING CR SE FORREST HS E PERRINE DR Collection Date/Time: 10/24/2018 10:00

Field ID: 20030081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2035972	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P353683	
	EPA 300.0 Rev. 2.1	Chloride	150		mg Cl/L	P354209	
		Sulfate	32		mg SO4/L	P353980	
	SM 2120 B	Color (true)	74	A	PCU	P353677	
	SM 2320 B-97	Total Alkalinity	73		mg CaCO3/L	P353899	
	SM 2540 C-97	TDS	362		mg/L	P354163	
	SM 2540 D-97	TSS	6	I	mg/L	P354032	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P353904	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P354091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P354057	
2035974	EPA 353.2 Rev. 2.0	NO2NO3-N	0.094		mg N/L	P353965	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P354017	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P354153	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.053		mg P/L	P353690	
	dissolved						
2036001	EPA 8321B	2,4-D	0.042		ug/L	P353651	
		Bentazon	0.0099		ug/L	P353651	
		MCP	0.013		ug/L	P353651	
		Triclopyr**	0.0040	U	ug/L	P353651	
		Imidacloprid	0.15		ug/L	P353651	
		Diuron	0.010		ug/L	P353651	
		Pyraclostrobin**	0.0020	U	ug/L	P353651	
		Primidone**	0.0056	I	ug/L	P353651	
		Linuron	0.0040	U	ug/L	P353651	
		Acetaminophen**	0.0080	U	ug/L	P353651	
		Fenuron	0.016	U	ug/L	P353651	
		Imazapyr**	0.33		ug/L	P353651	
		Carbamazepine**	9.1E-04	I	ug/L	P353651	
		Fluridone**	0.011		ug/L	P353651	
		Hydrocodone**	8.0E-04	U	ug/L	P353651	
		Naproxen**	0.0080	U	ug/L	P353651	
		Ibuprofen**	0.020	U	ug/L	P353651	
		Sucralose**	0.47		ug/L	P353656	
		Acesulfame K**	0.40	I	ug/L	P353656	

Ref. Method and Comment:

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

**Sample Location: FISHING CRK AT PUBLIC BOAT RAMP OFF
SEABOARD AVE**

Collection Date/Time: 10/24/2018 10:25

Field ID: 20030617

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2035973	EPA 180.1 Rev. 2.0	Turbidity	6.1		NTU	P353683	
	EPA 300.0 Rev. 2.1	Chloride	340		mg Cl/L	P353978	
		Sulfate	63		mg SO4/L	P353980	
	SM 2120 B	Color (true)	110		PCU	P353677	
	SM 2320 B-97	Total Alkalinity	71		mg CaCO3/L	P353899	
	SM 2540 C-97	TDS	730		mg/L	P354163	
	SM 2540 D-97	TSS	7	I	mg/L	P354032	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P353904	
2035975	EPA 350.1 Rev. 2.0	Ammonia-N	0.078		mg N/L	P354091	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P354057	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P353965	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P354017	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P354153	
2035977	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P353690	
2036002	EPA 8321B	2,4-D	0.024		ug/L	P353651	
		Bentazon	0.0087		ug/L	P353651	
		MCP	0.0034	I	ug/L	P353651	
		Triclopyr**	0.0040	U	ug/L	P353651	
		Imidacloprid	0.021		ug/L	P353651	
		Diuron	0.0075	I	ug/L	P353651	
		Pyraclostrobin**	0.0020	U	ug/L	P353651	
		Primidone**	0.0040	U	ug/L	P353651	
		Linuron	0.0040	U	ug/L	P353651	
		Acetaminophen**	0.0080	U	ug/L	P353651	
		Fenuron	0.016	U	ug/L	P353651	
		Imazapyr**	0.32		ug/L	P353651	
		Carbamazepine**	0.0012	I	ug/L	P353651	
		Fluridone**	0.0099		ug/L	P353651	
		Hydrocodone**	8.0E-04	U	ug/L	P353651	
		Naproxen**	0.0080	U	ug/L	P353651	
		Ibuprofen**	0.020	U	ug/L	P353651	
		Sucralose**	0.43		ug/L	P353656	
		Acesulfame K**	0.30	I	ug/L	P353656	

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: P353683

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353978

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353980

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354209

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354057

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353965

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354017

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354028

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353690

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

Reference Method: EPA 8321B
Batch ID: P353651

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
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P353656

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

Reference Method: SM 2120 B
Batch ID: P353677

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P353899

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

Reference Method: SM 2540 C-97
Batch ID: P354163

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P354032

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354034

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P353904

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P354153

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353978

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353980

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354091

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354057

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354017

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354028

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353690

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P353651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.4		P	40 - 150
Acetaminophen	135		P	30 - 150
Bentazon	91.0		P	30 - 150
Carbamazepine	103		P	40 - 150
Diuron	99.3		P	40 - 150
Fenuron	137		P	40 - 150
Fluridone	115		P	40 - 150
Hydrocodone	104		P	40 - 150
Ibuprofen	96.2		P	40 - 150
Imazapyr	101		P	40 - 150
Imidacloprid	124		P	40 - 160
Linuron	83.5		P	40 - 150
MCPP	111		P	40 - 150
Naproxen	95.7		P	40 - 150
Primidone	124		P	40 - 150
Pyraclostrobin	77.2		P	40 - 150
Triclopyr	115		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	75.7		P	40 - 150
Sucralose	81.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P353677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P353899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P353904

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

Reference Method: SM 5310 B-00
Batch ID: P354153

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035872	Chloride	98.6		P	90 - 110
2036085	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035872	Sulfate	97.8		P	90 - 110
2036085	Sulfate	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036676	Chloride	97.3		P	90 - 110
2036681	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035889	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354057

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036029	Kjeldahl Nitrogen	104	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035974	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035975	Total-P	96.0	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036181	Total-P	97.7	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035892	O-Phosphate-P	97.2	97.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P353651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035844	2,4-D	126	127	P/P	40 - 150
2035844	Acetaminophen	103	107	P/P	30 - 150
2035844	Bentazon	43.9	41.0	P/P	30 - 150
2035844	Carbamazepine	60.8	63.2	P/P	40 - 150
2035844	Diuron	55.5	54.5	P/P	40 - 150
2035844	Fenuron	79.7	86.2	P/P	40 - 150
2035844	Fluridone	102	105	P/P	40 - 150
2035844	Hydrocodone	88.8	88.9	P/P	40 - 150
2035844	Ibuprofen	70.3	74.4	P/P	40 - 150
2035844	Imazapyr	80.0	87.4	P/P	40 - 150
2035844	Imidacloprid	142	145	P/P	40 - 160
2035844	Linuron	60.3	60.5	P/P	40 - 150
2035844	MCPP	134	138	P/P	40 - 150
2035844	Naproxen	81.4	82.1	P/P	40 - 150
2035844	Primidone	91.6	93.6	P/P	40 - 150
2035844	Pyraclostrobin	84.9	88.9	P/P	40 - 150
2035844	Triclopyr	136	130	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036071	Acesulfame K	59.3	63.4	P/P	40 - 150
2036071	Sucralose	67.0	73.3	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P353904

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036282	Fluoride	99.5	100	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2035810	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P353683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036085	Turbidity	4.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035872	Chloride	1.52	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035872	Sulfate	1.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P354209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036676	Chloride	1.56	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035889	Ammonia-N	0.220	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036029	Kjeldahl Nitrogen	4.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035974	NO2NO3-N	0.334	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035975	Total-P	4.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036181	Total-P	1.39	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035892	O-Phosphate-P	0.366	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P353651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035844	2,4-D	0.300	Spike	P	0 - 30
2035844	Acetaminophen	3.99	Spike	P	0 - 30
2035844	Bentazon	6.77	Spike	P	0 - 30
2035844	Carbamazepine	3.94	Spike	P	0 - 30
2035844	Diuron	1.79	Spike	P	0 - 30
2035844	Fenuron	7.83	Spike	P	0 - 30
2035844	Fluridone	3.22	Spike	P	0 - 30
2035844	Hydrocodone	0.152	Spike	P	0 - 30
2035844	Ibuprofen	5.55	Spike	P	0 - 30
2035844	Imazapyr	7.21	Spike	P	0 - 30
2035844	Imidacloprid	1.64	Spike	P	0 - 30
2035844	Linuron	0.281	Spike	P	0 - 30
2035844	MCP	3.41	Spike	P	0 - 30
2035844	Naproxen	0.897	Spike	P	0 - 30
2035844	Primidone	2.08	Spike	P	0 - 30
2035844	Pyraclostrobin	4.58	Spike	P	0 - 30
2035844	Triclopyr	4.27	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P353656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036071	Acesulfame K	6.60	Spike	P	0 - 30
2036071	Sucralose	8.13	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P353677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035972	Color (true)	1.92	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P353899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036282	Total Alkalinity	0.276	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P354163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035913	TDS	2.83	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P353904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036282	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P354153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2035810	Organic Carbon	0.247	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: 2036001
Field Sample ID: 20030081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.9	P	30 - 160
EPA 8321B	Diuron-d6	57.3	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	99.9	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160

Lab Sample ID: 2036002
Field Sample ID: 20030617

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	65.3	P	30 - 160
EPA 8321B	Diuron-d6	54.8	P	30 - 160
EPA 8321B	Endothall-d6	94.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	87.3	P	30 - 160
EPA 8321B	Primidone-d5	59.4	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A87286

Included Lab Sample IDs: 2035972, 2035973

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87287

Included Lab Sample IDs: 2035976, 2035977, 2035980

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87288

Included Lab Sample IDs: 2035972, 2035973, 2035978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A87330

Included Lab Sample IDs: 2036001, 2036002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	76.1	70.4	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87368

Included Lab Sample IDs: 2035972, 2035973

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

Reference Method: EPA 8321B

Run ID: A87369

Included Lab Sample IDs: 2036001, 2036002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	63.9	61.8	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A87382

Included Lab Sample IDs: 2035972, 2035973, 2035978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110
Total Alkalinity	99.5	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A87382

Included Lab Sample IDs: 2035972, 2035973, 2035978

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87412

Included Lab Sample IDs: 2035974, 2035975, 2035979

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87437

Included Lab Sample IDs: 2035974, 2035975, 2035979

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

Reference Method: EPA 8321B

Run ID: A87443

Included Lab Sample IDs: 2036001

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	120	118	P/P	60 - 160
Carbamazepine	125	127	P/P	60 - 160
Diuron	139	130	P/P	60 - 150
Fenuron	107	95.2	P/P	60 - 150
Fluridone	126	123	P/P	60 - 160
Hydrocodone	132	130	P/P	60 - 150
Imazapyr	121	109	P/P	50 - 150
Imidacloprid	128	113	P/P	60 - 160
Linuron	125	121	P/P	60 - 150
Primidone	129	132	P/P	60 - 160
Pyraclostrobin	126	121	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87465

Included Lab Sample IDs: 2035974, 2035975, 2035979

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87488

Included Lab Sample IDs: 2035974, 2035975, 2035979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A87498

Included Lab Sample IDs: 2035974, 2035975, 2035979

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

Reference Method: EPA 8321B

Run ID: A87533

Included Lab Sample IDs: 2036002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	71.4	66.6	P/P	60 - 160
Carbamazepine	106	109	P/P	60 - 160
Diuron	98.8	95.7	P/P	60 - 150
Fenuron	88.1	79.8	P/P	60 - 150
Fluridone	120	121	P/P	60 - 160
Hydrocodone	71.9	76.1	P/P	60 - 150
Imazapyr	90.3	103	P/P	50 - 150
Imidacloprid	87.9	86.1	P/P	60 - 150
Linuron	102	100	P/P	60 - 150
Primidone	74.0	71.3	P/P	60 - 150
Pyraclostrobin	92.8	92.6	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A87543

Included Lab Sample IDs: 2036001, 2036002

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.7	89.5	P/P	50 - 150
Bentazon	109	110	P/P	50 - 160
Ibuprofen	62.5	100	P/P	50 - 160
MCP	97.2	96.6	P/P	50 - 150
Naproxen	104	103	P/P	50 - 160
Triclopyr	112	106	P/P	50 - 160

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				4.38	
EPA 300.0 Rev. 2.1	Chloride	99.9	98.6	98.0	1.52	
	Chloride	99.3	97.3	102	1.56	
	Sulfate	98.5	97.8	100	1.49	
EPA 350.1 Rev. 2.0	Ammonia-N	104	103	104		0.220
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.3	104	97.0		4.13
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	103	102		0.334
EPA 365.1 Rev. 2.0	Total-P	104	96.0	102		4.45
	Total-P	99.6	97.7	99.2		1.39
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	97.2	97.7		0.366
EPA 8321B	2,4-D	84.4	127	126		0.300
	Acesulfame K	75.7	59.3	63.4		6.60
	Acetaminophen	135	103	107		3.99
	Bentazon	91.0	41.0	43.9		6.77
	Carbamazepine	103	60.8	63.2		3.94
	Diuron	99.3	55.5	54.5		1.79
	Fenuron	137	79.7	86.2		7.83
	Fluridone	115	102	105		3.22
	Hydrocodone	104	88.8	88.9		0.152
	Ibuprofen	96.2	70.3	74.4		5.55
	Imazapyr	101	80.0	87.4		7.21
	Imidacloprid	124	142	145		1.64
	Linuron	83.5	60.3	60.5		0.281
	MCPP	111	134	138		3.41
	Naproxen	95.7	81.4	82.1		0.897
	Primidone	124	91.6	93.6		2.08
	Pyraclostrobin	77.2	84.9	88.9		4.58
	Sucralose	81.2	67.0	73.3		8.13
	Triclopyr	115	136	130		4.27
SM 2120 B	Color (true)	101			1.92	
SM 2320 B-97	Total Alkalinity	103			0.276	
SM 2540 C-97	TDS				2.83	
SM 4500 F-C-97	Fluoride	101	99.5	100		0.470
SM 5310 B-00	Organic Carbon	101	101	101		0.247

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2035972, 2035973, 2035978
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2035972, 2035973
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2035972, 2035973
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2035974, 2035975, 2035979
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2035974, 2035975, 2035979
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2035974, 2035975, 2035979
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2035974, 2035975, 2035979
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2035976, 2035977, 2035980
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2036001, 2036002

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2120 B / E31780	True Color measured at 450 nm	2035972, 2035973
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2035972, 2035973, 2035978
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2035972, 2035973
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2035972, 2035973, 2035978
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2035972, 2035973, 2035978
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2035974, 2035975, 2035979

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	10/25/2018			10/25/2018 17:19	Julia Storbeck	2035972, 2035973, 2035978
EPA 300.0 Rev. 2.1	10/25/2018			10/30/2018 18:21	Lipi Saha	2035972
	10/25/2018			10/30/2018 18:33	Lipi Saha	2035973
	10/25/2018			11/01/2018 17:58	Lipi Saha	2035972
EPA 350.1 Rev. 2.0	10/25/2018			11/01/2018 13:28	Ping Hua	2035974
	10/25/2018			11/01/2018 13:29	Ping Hua	2035975
	10/25/2018			11/01/2018 13:31	Ping Hua	2035979
EPA 351.2 Rev. 2.0	10/25/2018	11/01/2018 17:00	Adrian Shelby	11/02/2018 12:11	Virginia P. Brown	2035974
	10/25/2018	11/01/2018 17:00	Adrian Shelby	11/02/2018 12:13	Virginia P. Brown	2035975
	10/25/2018	11/01/2018 17:00	Adrian Shelby	11/02/2018 12:14	Virginia P. Brown	2035979
EPA 353.2 Rev. 2.0	10/25/2018			10/31/2018 10:52	Beverly Y. Sanders	2035974
	10/25/2018			10/31/2018 10:58	Beverly Y. Sanders	2035975
	10/25/2018			10/31/2018 10:59	Beverly Y. Sanders	2035979
EPA 365.1 Rev. 2.0	10/25/2018	10/31/2018 16:00	Adrian Shelby	11/01/2018 09:02	Beverly Y. Sanders	2035975
	10/25/2018	10/31/2018 16:00	Adrian Shelby	11/01/2018 09:16	Beverly Y. Sanders	2035974
	10/25/2018	10/31/2018 16:00	Adrian Shelby	11/01/2018 09:43	Beverly Y. Sanders	2035979
EPA 365.1 Rev. 2.0 dissolved	10/25/2018			10/25/2018 15:22	Lipi Saha	2035976
	10/25/2018			10/25/2018 15:23	Lipi Saha	2035977
	10/25/2018			10/25/2018 15:24	Lipi Saha	2035980
EPA 8321B	10/25/2018	10/26/2018 10:00	Hoor Shaik	10/28/2018 19:12	Juyoung Kim	2036001
	10/25/2018	10/26/2018 10:00	Hoor Shaik	11/02/2018 01:20	Juyoung Kim	2036002
	10/25/2018	10/26/2018 10:00	Hoor Shaik	11/04/2018 04:21	Juyoung Kim	2036001
	10/25/2018	10/26/2018 10:00	Hoor Shaik	11/04/2018 04:55	Juyoung Kim	2036002
	10/25/2018	10/26/2018 10:00	Rebecca Ware	10/27/2018 21:40	Mohammad Ghaffari	2036001
	10/25/2018	10/26/2018 10:00	Rebecca Ware	10/27/2018 21:54	Mohammad Ghaffari	2036002
	10/25/2018	10/26/2018 10:00	Rebecca Ware	10/29/2018 22:54	Rebecca Ware	2036001
	10/25/2018	10/26/2018 10:00	Rebecca Ware	10/29/2018 23:09	Rebecca Ware	2036002
SM 2120 B	10/25/2018			10/25/2018 15:40	Chelsea Hernandez	2035972
	10/25/2018			10/25/2018 15:41	Chelsea Hernandez	2035973
SM 2320 B-97	10/25/2018			10/29/2018 09:19	Dale L. Simmons	2035972
	10/25/2018			10/29/2018 13:14	Dale L. Simmons	2035973
	10/25/2018			10/29/2018 13:24	Dale L. Simmons	2035978
SM 2540 C-97	10/25/2018			10/26/2018 14:25	Yijie Li	2035972, 2035973
SM 2540 D-97	10/25/2018			10/26/2018 14:25	Yijie Li	2035972, 2035973, 2035978
SM 4500 F-C-97	10/25/2018			10/29/2018 09:19	Dale L. Simmons	2035972
	10/25/2018			10/29/2018 13:14	Dale L. Simmons	2035973
	10/25/2018			10/29/2018 13:24	Dale L. Simmons	2035978
SM 5310 B-00	10/25/2018			11/01/2018 11:20	Megan Treadwell	2035974
	10/25/2018			11/01/2018 11:32	Megan Treadwell	2035975
	10/25/2018			11/01/2018 11:45	Megan Treadwell	2035979