

Chemical Analysis Report

NW-DIST-2018-10-16-02

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

Event Description: **PENS/CANT RUN**
Request ID: **RQ-2018-10-15-24**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 01-NOV-2018 10:45

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: Carpenters Creek upstream of Ninth ave

Collection Date/Time: 10/15/2018 10:40

Field ID: G4NW0415

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2032946	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P353457	
	EPA 300.0 Rev. 2.1	Chloride	8.3		mg Cl/L	P353564	
		Sulfate	5.2		mg SO4/L	P353567	
	SM 2120 B	Color (true)	11		PCU	P353174	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P353553	
	SM 2540 C-97	TDS	51		mg/L	P353521	
	SM 2540 D-97	TSS	2	I	mg/L	P353448	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P353558	
2032947	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P353800	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P353487	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.1		mg N/L	P353219	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P353289	
	SM 5310 B-00	Organic Carbon	1.1		mg C/L	P353536	
2032948	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P353162	
2032952	EPA 8321B	2,4-D	0.029		ug/L	P353085	
		Bentazon	8.0E-04	U	ug/L	P353085	
		MCP	0.0099		ug/L	P353085	
		Triclopyr**	0.0040	U	ug/L	P353085	
		Imidacloprid	0.030		ug/L	P353085	
		Diuron	0.0020	U	ug/L	P353085	
		Pyraclostrobin**	0.0020	U	ug/L	P353085	
		Primidone**	0.0040	U	ug/L	P353085	
		Linuron	0.0040	U	ug/L	P353085	
		Acetaminophen**	0.0080	U	ug/L	P353085	
		Fenuron	0.016	U	ug/L	P353085	
		Imazapyr**	0.0047	I	ug/L	P353085	
		Carbamazepine**	0.0016	I	ug/L	P353085	
		Fluridone**	4.0E-04	U	ug/L	P353085	
		Hydrocodone**	8.0E-04	U	ug/L	P353085	
		Naproxen**	0.0080	U	ug/L	P353085	
		Ibuprofen**	0.020	U	ug/L	P353085	
		Sucralose**	0.25		ug/L	P353202	
		Acesulfame K**	0.10	U	ug/L	P353202	

Ref. Method and Comment:

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

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P353457

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353564

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353567

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353800

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353487

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353219

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353289

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353162

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

Reference Method: EPA 8321B
Batch ID: P353085

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P353085

Component	Result	Code	Units
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: P353202

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

Reference Method: SM 2120 B
Batch ID: P353174

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P353553

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

Reference Method: SM 2540 C-97
Batch ID: P353521

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P353448

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P353558

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P353536

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: P353564

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353567

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353800

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353219

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353289

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353162

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

Reference Method: EPA 8321B
Batch ID: P353085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.9		P	40 - 150
Acetaminophen	79.3		P	30 - 150
Bentazon	99.5		P	30 - 150
Carbamazepine	70.3		P	40 - 150
Diuron	64.8		P	40 - 150
Fenuron	87.2		P	40 - 150
Fluridone	89.3		P	40 - 150
Hydrocodone	80.9		P	40 - 150
Ibuprofen	57.7		P	40 - 150
Imazapyr	78.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P353085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imidacloprid	69.2		P	40 - 160
Linuron	63.2		P	40 - 150
MCPP	85.2		P	40 - 150
Naproxen	76.2		P	40 - 150
Primidone	80.1		P	40 - 150
Pyraclostrobin	60.5		P	40 - 150
Triclopyr	78.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
Sucralose	84.4		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P353174

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P353553

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

Reference Method: SM 4500 F-C-97
Batch ID: P353558

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P353536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033039	Chloride	98.9		P	90 - 110
2033041	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033039	Sulfate	94.4		P	90 - 110
2033041	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2032888	Ammonia-N	98.5	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2032947	Kjeldahl Nitrogen	99.9	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2032864	NO2NO3-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353289

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033045	Total-P	105	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2032948	O-Phosphate-P	98.9	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P353085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033413	2,4-D	115	128	P/P	40 - 150
2033413	Acetaminophen	78.5	81.9	P/P	30 - 150
2033413	Carbamazepine	57.9	58.0	P/P	40 - 150
2033413	Diuron	55.6	51.8	P/P	40 - 150
2033413	Fenuron	72.7	71.5	P/P	40 - 150
2033413	Hydrocodone	75.9	74.2	P/P	40 - 150
2033413	Ibuprofen	73.2	55.1	P/P	40 - 150
2033413	Imidacloprid	128	126	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P353085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033413	Linuron	52.4	47.9	P/P	40 - 150
2033413	MCP	127	139	P/P	40 - 150
2033413	Naproxen	88.9	99.4	P/P	40 - 150
2033413	Primidone	75.1	74.2	P/P	40 - 150
2033413	Pyraclostrobin	69.1	71.3	P/P	40 - 150
2033413	Triclopyr	128	139	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033274	Acesulfame K	59.0	62.3	P/P	40 - 150
2033274	Sucralose	81.3	93.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P353558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033092	Fluoride	97.7	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P353536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2032810	Organic Carbon	93.9	94.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P353457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032898	Turbidity	10.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033039	Chloride	1.41	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033039	Sulfate	0.305	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032888	Ammonia-N	0.779	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032947	Kjeldahl Nitrogen	4.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032864	NO2NO3-N	0.615	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353289

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033045	Total-P	4.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032948	O-Phosphate-P	1.60	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P353085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033413	2,4-D	8.17	Spike	P	0 - 30
2033413	Acetaminophen	4.22	Spike	P	0 - 30
2033413	Carbamazepine	0.176	Spike	P	0 - 30
2033413	Diuron	5.94	Spike	P	0 - 30
2033413	Fenuron	1.78	Spike	P	0 - 30
2033413	Fluridone	2.62	Spike	P	0 - 30
2033413	Hydrocodone	2.32	Spike	P	0 - 30
2033413	Ibuprofen	28.3	Spike	P	0 - 30
2033413	Imazapyr	8.77	Spike	P	0 - 30
2033413	Imidacloprid	0.864	Spike	P	0 - 30
2033413	Linuron	9.10	Spike	P	0 - 30
2033413	MCP	8.51	Spike	P	0 - 30
2033413	Naproxen	11.2	Spike	P	0 - 30
2033413	Primidone	1.14	Spike	P	0 - 30
2033413	Pyraclostrobin	3.06	Spike	P	0 - 30
2033413	Triclopyr	8.06	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P353202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033274	Acesulfame K	5.51	Spike	P	0 - 30
2033274	Sucralose	11.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P353174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032893	Color (true)	0.309	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P353553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033092	Total Alkalinity	0.517	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P353521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032807	TDS	7.79	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P353558

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

Reference Method: SM 4500 F-C-97
Batch ID: P353558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033092	Fluoride	0.978	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P353536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2032810	Organic Carbon	0.471	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: 2032952

Field Sample ID: G4NW0415

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	120	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.8	P	30 - 160
EPA 8321B	Diuron-d6	82.3	P	30 - 160
EPA 8321B	Endothall-d6	75.4	P	40 - 160
EPA 8321B	Ibuprofen-d3	65.9	P	30 - 160
EPA 8321B	Primidone-d5	96.2	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87080

Included Lab Sample IDs: 2032948

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.5	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A87084

Included Lab Sample IDs: 2032946

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87095

Included Lab Sample IDs: 2032947

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

Reference Method: EPA 8321B

Run ID: A87135

Included Lab Sample IDs: 2032952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	119	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87172

Included Lab Sample IDs: 2032952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.0	84.7	P/P	50 - 150
Bentazon	142	139	P/P	50 - 160
Ibuprofen	84.1	91.8	P/P	50 - 160
MCP	91.2	86.5	P/P	50 - 150
Naproxen	97.4	106	P/P	50 - 160
Triclopyr	87.5	86.8	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A87174

Included Lab Sample IDs: 2032952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	81.9	82.4	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87180

Included Lab Sample IDs: 2032947

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A87184
Included Lab Sample IDs: 2032952

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	112	113	P/P	60 - 160
Carbamazepine	111	114	P/P	60 - 160
Diuron	103	113	P/P	60 - 150
Fenuron	104	110	P/P	60 - 150
Fluridone	114	117	P/P	60 - 160
Hydrocodone	109	104	P/P	60 - 150
Imazapyr	93.6	109	P/P	50 - 150
Imidacloprid	92.8	99.9	P/P	60 - 150
Linuron	114	113	P/P	60 - 150
Primidone	98.6	90.6	P/P	60 - 150
Pyraclostrobin	107	106	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A87199
Included Lab Sample IDs: 2032946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A87212
Included Lab Sample IDs: 2032946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	99.2	100	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A87236
Included Lab Sample IDs: 2032947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	96.4	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A87241
Included Lab Sample IDs: 2032946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A87241
Included Lab Sample IDs: 2032946

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87246

Included Lab Sample IDs: 2032947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87340

Included Lab Sample IDs: 2032947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.9	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					10.5	
EPA 300.0 Rev. 2.1	Chloride	103	98.9	102		1.41	
	Sulfate	103	94.4	101		0.305	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	98.5	99.7			0.779
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	99.9	95.4			4.03
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.5	99.5			0.615
EPA 365.1 Rev. 2.0	Total-P	99.0	105	99.5			4.80
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.9	100			1.60
EPA 8321B	2,4-D	83.9	115	128			8.17
	Acesulfame K	107	59.0	62.3			5.51
	Acetaminophen	79.3	78.5	81.9			4.22
	Bentazon	99.5					
	Carbamazepine	70.3	57.9	58.0			0.176
	Diuron	64.8	55.6	51.8			5.94
	Fenuron	87.2	72.7	71.5			1.78
	Fluridone	89.3					2.62
	Hydrocodone	80.9	75.9	74.2			2.32
	Ibuprofen	57.7	73.2	55.1			28.3
	Imazapyr	78.9					8.77
	Imidacloprid	69.2	128	126			0.864
	Linuron	63.2	52.4	47.9			9.10
	MCP	85.2	127	139			8.51
	Naproxen	76.2	88.9	99.4			11.2
	Primidone	80.1	75.1	74.2			1.14
	Pyraclostrobin	60.5	69.1	71.3			3.06
	Sucralose	84.4	81.3	93.2			11.7
	Triclopyr	78.2	128	139			8.06
SM 2120 B	Color (true)	102				0.309	
SM 2320 B-97	Total Alkalinity	101				0.517	
SM 2540 C-97	TDS					7.79	
SM 4500 F-C-97	Fluoride	99.4	97.7	98.9			0.978
SM 5310 B-00	Organic Carbon	93.8	93.9	94.8			0.471

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2032946
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2032946
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2032946
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2032947
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2032947
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2032947
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2032947
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2032948
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2032952
SM 2120 B / E31780	True Color measured at 450 nm	2032946
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2032946

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2032946
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2032946
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2032946
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2032947

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	10/15/2018			10/16/2018 13:41	Megan Treadwell	2032946
EPA 300.0 Rev. 2.1	10/15/2018			10/24/2018 00:04	Lipi Saha	2032946
EPA 350.1 Rev. 2.0	10/15/2018			10/26/2018 13:20	Ping Hua	2032947
EPA 351.2 Rev. 2.0	10/15/2018	10/23/2018 09:00	Adrian Shelby	10/24/2018 10:02	Joseph Suarez	2032947
EPA 353.2 Rev. 2.0	10/15/2018			10/17/2018 14:27	Lauren Bottorf	2032947
EPA 365.1 Rev. 2.0	10/15/2018	10/18/2018 12:55	Sima Feizi	10/19/2018 12:32	Beverly Y. Sanders	2032947
EPA 365.1 Rev. 2.0 dissolved	10/15/2018			10/16/2018 15:10	Virginia P. Brown	2032948
EPA 8321B	10/15/2018	10/18/2018 16:00	Rebecca Ware	10/19/2018 02:26	Rebecca Ware	2032952
	10/15/2018	10/18/2018 16:00	Rebecca Ware	10/19/2018 21:24	Mohammad Ghaffari	2032952
	10/15/2018	10/19/2018 10:00	Hoor Shaik	10/20/2018 12:22	Juyoung Kim	2032952
	10/15/2018	10/19/2018 10:00	Hoor Shaik	10/21/2018 07:24	Juyoung Kim	2032952
SM 2120 B	10/15/2018			10/16/2018 16:37	Chelsea Hernandez	2032946
SM 2320 B-97	10/15/2018			10/20/2018 08:30	Dale L. Simmons	2032946
SM 2540 C-97	10/15/2018			10/18/2018 15:21	Yijie Li	2032946
SM 2540 D-97	10/15/2018			10/18/2018 15:21	Yijie Li	2032946
SM 4500 F-C-97	10/15/2018			10/20/2018 08:30	Dale L. Simmons	2032946
SM 5310 B-00	10/15/2018			10/22/2018 20:16	Megan Treadwell	2032947