

Chemical Analysis Report

NW-DIST-2017-02-08-01

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

Event Description: **98 Whaler Run WBID 917A, 937, 701A**
Request ID: **RQ-2017-02-06-46**
Customer: **NW-DIST**
Project ID: **SMP**

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

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Certified by: Colin Wright, Program Administrator

Date Certified: 27-FEB-2017 12:20

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Mack Bayou

Collection Date/Time: 02/07/2017 11:55

Field ID: G4NW0399

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870553	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P319535	
	SM 2320 B-97	Total Alkalinity	41		mg CaCO3/L	P319869	
	SM 2540 D-97	TSS	11		mg/L	P319889	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P319874	
1870555	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P319776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P319643	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P319969	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P320178	MS
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P319573	
1870557	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P319533	

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: Destin Harbor

Collection Date/Time: 02/07/2017 13:30

Field ID: G4NW0398

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870554	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P319535	
	SM 2320 B-97	Total Alkalinity	39	A	mg CaCO3/L	P319869	
	SM 2540 D-97	TSS	10		mg/L	P319889	
	SM 4500 F-C-97	Fluoride	0.27		mg F/L	P319874	
1870556	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P319776	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P319643	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P319969	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P319553	
	SM 5310 B-00	Organic Carbon	5.7		mg C/L	P319573	
1870558	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P319533	

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: Destin Harbor

Collection Date/Time: 02/07/2017 13:30

Field ID: G4NW0398

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870631	EPA 8321B	Sucralose**	0.059		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0040	U	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	4.0E-04	U	ug/L	P319088	

Sample Location: East Bay River

Collection Date/Time: 02/07/2017 14:45

Field ID: G4NW0400

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1870632	EPA 8321B	Sucralose**	0.074		ug/L	P319242	
	USGS O-2060-01	Diuron	0.0040	U	ug/L	P319088	
		Fenuron	0.0080	U	ug/L	P319088	
		Imidacloprid	0.0040	U	ug/L	P319088	
		Linuron	0.0040	U	ug/L	P319088	
		Acetaminophen**	0.0040	U	ug/L	P319088	
		Carbamazepine**	4.0E-04	U	ug/L	P319088	
		Primidone**	0.0080	U	ug/L	P319088	
		Fluridone**	4.0E-04	U	ug/L	P319088	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319535

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319643

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319969

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319553

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320178

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319533

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319533

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

Reference Method: EPA 8321B
Batch ID: P319242

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P319869

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

Reference Method: SM 2540 D-97
Batch ID: P319889

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P319573

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

Reference Method: USGS O-2060-01
Batch ID: P319088

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319776

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	106		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319969

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319553

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	91.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P319242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	75.7		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P319869

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P319573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P319088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	119		P	40 - 140
Carbamazepine	120		P	40 - 140
Diuron	87.6		P	40 - 140
Fenuron	98.4		P	40 - 140
Fluridone	90.0		P	40 - 140
Imidacloprid	106		P	40 - 160
Linuron	88.8		P	40 - 140
Primidone	98.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P319776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870555	Ammonia-N	101	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P319643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870594	Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P319969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870367	NO2NO3-N	96.8	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P319553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870556	Total-P	96.8	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873360	Total-P	83.9	84.4	F/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870557	O-Phosphate-P	98.4	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P319242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870854	Sucralose	84.3	87.4	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870554	Fluoride	93.0	94.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P319573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870141	Organic Carbon	96.0	95.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P319088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1869371	Acetaminophen	85.6	89.2	P/P	40 - 140
1869371	Carbamazepine	93.2	93.6	P/P	40 - 140
1869371	Diuron	71.2	72.0	P/P	40 - 140
1869371	Fenuron	78.4	80.8	P/P	40 - 140
1869371	Fluridone	70.4	72.8	P/P	40 - 140
1869371	Imidacloprid	148	146	P/P	40 - 160
1869371	Linuron	75.6	88.0	P/P	40 - 140
1869371	Primidone	83.6	82.0	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870714	Turbidity	4.69	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P319776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870555	Ammonia-N	3.17	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P319643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870594	Kjeldahl Nitrogen	3.87	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P319969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870367	NO2NO3-N	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P319553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870556	Total-P	1.91	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873360	Total-P	0.578	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P319533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870557	O-Phosphate-P	1.81	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P319242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870854	Sucralose	3.61	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P319869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870554	Total Alkalinity	0.615	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P319874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870554	Fluoride	0.987	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P319573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870141	Organic Carbon	0.446	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P319088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1869371	Acetaminophen	4.12	Spike	P	0 - 30
1869371	Carbamazepine	0.428	Spike	P	0 - 30
1869371	Diuron	1.12	Spike	P	0 - 30
1869371	Fenuron	3.02	Spike	P	0 - 30
1869371	Fluridone	3.35	Spike	P	0 - 30
1869371	Imidacloprid	1.09	Spike	P	0 - 30
1869371	Linuron	15.2	Spike	P	0 - 30
1869371	Primidone	1.93	Spike	P	0 - 30

* 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: 1870631
Field Sample ID: G4NW0398

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	88.5	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	99.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	90.6	P	40 - 160
USGS O-2060-01	Diuron-d6	61.0	P	40 - 150
USGS O-2060-01	Primidone-d5	78.6	P	40 - 150

Lab Sample ID: 1870632
Field Sample ID: G4NW0400

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	116	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	114	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	126	P	40 - 160
USGS O-2060-01	Diuron-d6	85.6	P	40 - 150
USGS O-2060-01	Primidone-d5	91.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74352
Included Lab Sample IDs: 1870557, 1870558

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A74352

Included Lab Sample IDs: 1870557, 1870558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.0	P/P	90 - 110
O-Phosphate-P	99.7	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A74353

Included Lab Sample IDs: 1870553, 1870554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	96.0	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A74366

Included Lab Sample IDs: 1870555, 1870556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	96.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A74390

Included Lab Sample IDs: 1870631, 1870632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	134	127	P/P	60 - 150
Carbamazepine	128	140	P/P	60 - 150
Diuron	118	118	P/P	60 - 150
Fenuron	115	116	P/P	60 - 150
Fluridone	107	108	P/P	60 - 150
Imidacloprid	93.6	101	P/P	60 - 150
Linuron	86.8	96.8	P/P	60 - 150
Primidone	104	94.4	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A74419

Included Lab Sample IDs: 1870631, 1870632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	113	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74434

Included Lab Sample IDs: 1870555, 1870556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74439

Included Lab Sample IDs: 1870556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A74447
Included Lab Sample IDs: 1870555, 1870556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.0	101	P/P	90 - 110
Ammonia-N	98.3	96.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A74479
Included Lab Sample IDs: 1870553, 1870554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A74479
Included Lab Sample IDs: 1870553, 1870554

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A74523
Included Lab Sample IDs: 1870555, 1870556

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74650
Included Lab Sample IDs: 1870555

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.8	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				4.69	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	101 95.0			3.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	101 106			3.87
EPA 353.2 Rev. 2.0	NO2NO3-N	104	96.8 98.3			1.54
EPA 365.1 Rev. 2.0	Total-P	101	96.8 98.6			1.91
	Total-P	91.2	83.9 84.4			0.578
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	98.4 100			1.81
EPA 8321B	Sucralose	75.7	84.3 87.4			3.61
SM 2320 B-97	Total Alkalinity	103			0.615	
SM 4500 F-C-97	Fluoride	98.6	93.0 94.2			0.987

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
SM 5310 B-00	Organic Carbon	96.2	96.0	95.4		0.446
USGS O-2060-01	Acetaminophen	119	85.6	89.2		4.12
	Carbamazepine	120	93.2	93.6		0.428
	Diuron	87.6	71.2	72.0		1.12
	Fenuron	98.4	78.4	80.8		3.02
	Fluridone	90.0	70.4	72.8		3.35
	Imidacloprid	106	148	146		1.09
	Linuron	88.8	75.6	88.0		15.2
	Primidone	98.4	83.6	82.0		1.93

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1870553, 1870554
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1870555, 1870556
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1870555, 1870556
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1870555, 1870556
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1870555, 1870556
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1870557, 1870558
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1870631, 1870632
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1870553, 1870554
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1870553, 1870554
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1870553, 1870554
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1870555, 1870556
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1870631, 1870632

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	02/08/2017			02/08/2017 16:31	Julie Michelle Frank	1870553, 1870554
EPA 350.1 Rev. 2.0	02/08/2017			02/10/2017	Sofia Elnemr	1870555, 1870556
EPA 351.2 Rev. 2.0	02/08/2017	02/10/2017	Adrian Shelby	02/13/2017	Joseph Suarez	1870555, 1870556
EPA 353.2 Rev. 2.0	02/08/2017			02/16/2017	Beverly Y. Sanders	1870555, 1870556
EPA 365.1 Rev. 2.0	02/08/2017	02/09/2017	Adrian Shelby	02/13/2017	Lipi Saha	1870556
	02/08/2017	02/21/2017	Adrian Shelby	02/22/2017	Lipi Saha	1870555
EPA 365.1 Rev. 2.0 dissolved	02/08/2017			02/08/2017 15:52	Julie Michelle Frank	1870557
	02/08/2017			02/08/2017 16:13	Julie Michelle Frank	1870558
EPA 8321B	02/08/2017	02/09/2017	Mohammad Ghaffari	02/10/2017	Mohammad Ghaffari	1870631, 1870632
SM 2320 B-97	02/08/2017			02/15/2017	Dale L. Simmons	1870553, 1870554
SM 2540 D-97	02/08/2017			02/10/2017	Sima Feizi	1870553, 1870554
SM 4500 F-C-97	02/08/2017			02/14/2017	Dale L. Simmons	1870553, 1870554
SM 5310 B-00	02/08/2017			02/08/2017	Julie Michelle Frank	1870555, 1870556
USGS O-2060-01	02/08/2017	02/09/2017	Hoor Shaik	02/10/2017	Juyoung Kim	1870631, 1870632