

Chemical Analysis Report

NW-DIST-2017-12-01-02

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

Event Description: **ENR B WBID 843**
Request ID: **RQ-2017-11-27-14**
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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
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Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 20-DEC-2017 12:26



NON-CONFORMANCE REPORT INCLUDED

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: Cinco Bayou West of Cinco Bridge

Collection Date/Time: 11/29/2017 12:30

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1950084	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P336258	
	SM 2320 B-97	Total Alkalinity	82		mg CaCO3/L	P336325	
	SM 2540 D-97	TSS	3	IA	mg/L	P336789	
	SM 4500 F-C-97	Fluoride	0.72		mg F/L	P336329	
1950085	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P336806	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.20	I	mg N/L	P336644	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P336582	
	EPA 365.1 Rev. 2.0	Total-P	0.007	I	mg P/L	P336531	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P336547	
1950086	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P336220	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Sample Location: Cinco Bayou West of Cinco Bridge

Collection Date/Time: 11/29/2017 12:30

Field ID: G3NW0088

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1950102	EPA 8321B	Sucralose**	0.20		ug/L	P336172	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P336290	
		Diuron	8.0E-04	U	ug/L	P336290	
		Fenuron	0.0080	U	ug/L	P336290	
		Imidacloprid	0.0028	I	ug/L	P336290	
		Bentazon	8.0E-04	U	ug/L	P336290	
		Linuron	0.0040	U	ug/L	P336290	
		Acetaminophen**	0.0080	U	ug/L	P336290	
		MCP	0.0020	U	ug/L	P336290	
		Carbamazepine**	0.0018		ug/L	P336290	
		Triclopyr**	0.0040	U	ug/L	P336290	
		Primidone**	0.0040	U	ug/L	P336290	
		Fluridone**	4.0E-04	U	ug/L	P336290	

Non-Conformance Report

NCR ID: 6800

Event(s)

NW-DIST-2017-12-01-02
 NW-DIST-2017-12-01-02
 NW-DIST-2017-12-01-02
 NW-DIST-2017-12-01-02
 NW-DIST-2017-12-01-02

Job(s)

TLH-2017-12-01-51
 TLH-2017-12-01-57
 TLH-2017-12-01-58
 TLH-2017-12-01-59
 TLH-2017-12-01-60

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived one day late, by common carrier. Samples received within the acceptable temperature range.

Non-Conformance Report

NCR ID: 6800

Event(s)

Job(s)

Sample(s)

Test(s)

Resolution: Laboratory supervisors were notified by email. Samples will be qualified as appropriate.

Authorized by/Date: Kerry Tate 12/12/2017

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P336258

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P336806

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P336644

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P336582

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P336531

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P336220

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

Reference Method: EPA 8321B

Batch ID: P336172

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
 Batch ID: P336325

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

Reference Method: SM 2540 D-97
 Batch ID: P336789

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P336329

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P336547

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

Reference Method: USGS O-2060-01
 Batch ID: P336290

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	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336806

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: P336644

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P336582

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: P336531

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P336220

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

Reference Method: EPA 8321B
Batch ID: P336172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P336325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P336329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P336547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P336290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.6		P	40 - 150
Acetaminophen	104		P	30 - 150
Bentazon	58.7		P	30 - 150
Carbamazepine	109		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	113		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	104		P	40 - 150
MCP	87.8		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P336290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	109		P	40 - 150
Triclopyr	83.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949592	Ammonia-N	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950073	Kjeldahl Nitrogen	111	106	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P336582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950070	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P336531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949888	Total-P	94.3	92.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P336220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949889	O-Phosphate-P	104	101	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P336172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950024	Sucralose	78.0	81.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P336329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949156	Fluoride	94.4	95.7	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P336547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1949758	Organic Carbon	98.3	97.3	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P336290

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1950117	2,4-D	86.3	81.7	P/P	40 - 150
1950117	Acetaminophen	79.5	76.5	P/P	30 - 150
1950117	Bentazon	52.7	49.4	P/P	30 - 150
1950117	Carbamazepine	110	112	P/P	40 - 150
1950117	Diuron	95.5	101	P/P	40 - 150
1950117	Fenuron	104	109	P/P	40 - 150
1950117	Fluridone	96.4	103	P/P	40 - 150
1950117	Imidacloprid	141	141	P/P	40 - 160
1950117	Linuron	97.8	104	P/P	40 - 150
1950117	MCCP	68.3	67.7	P/P	40 - 150
1950117	Primidone	118	121	P/P	40 - 150
1950117	Triclopyr	66.1	64.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P336258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950002	Turbidity	0.404	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P336806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949592	Ammonia-N	3.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P336644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950073	Kjeldahl Nitrogen	4.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P336582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950070	NO2NO3-N	0.908	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P336531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949888	Total-P	1.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P336220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949889	O-Phosphate-P	3.41	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P336172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950024	Sucralose	3.59	Spike	P	0 - 30

Reference Method: SM 2320 B-97
 Batch ID: P336325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949156	Total Alkalinity	0.483	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
 Batch ID: P336329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949156	Fluoride	0.953	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P336547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1949758	Organic Carbon	0.774	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P336290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950117	2,4-D	5.32	Spike	P	0 - 30
1950117	Acetaminophen	2.93	Spike	P	0 - 30
1950117	Bentazon	2.80	Spike	P	0 - 30
1950117	Carbamazepine	1.60	Spike	P	0 - 30
1950117	Diuron	5.30	Spike	P	0 - 30
1950117	Fenuron	4.15	Spike	P	0 - 30
1950117	Fluridone	4.52	Spike	P	0 - 30
1950117	Imidacloprid	0.0721	Spike	P	0 - 30
1950117	Linuron	5.99	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P336290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1950117	MCP	0.952	Spike	P	0 - 30
1950117	Primidone	2.27	Spike	P	0 - 30
1950117	Triclopyr	2.33	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: 1950102
Field Sample ID: G3NW0088

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	113	P	30 - 160
EPA 8321B	Diuron-d6	94.7	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	47.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	61.3	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	104	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	113	P	30 - 160
USGS O-2060-01	Diuron-d6	94.7	P	30 - 160
USGS O-2060-01	Primidone-d5	106	P	30 - 160
USGS O-2060-01	Sucralose-d6	47.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A80641
Included Lab Sample IDs: 1950086

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A80658
Included Lab Sample IDs: 1950084

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

Reference Method: SM 2320 B-97
Run ID: A80689
Included Lab Sample IDs: 1950084

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A80689
Included Lab Sample IDs: 1950084

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	97.6	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A80693
Included Lab Sample IDs: 1950102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.8	86.8	P/P	50 - 150
Bentazon	96.1	102	P/P	50 - 150
MCP	95.4	95.6	P/P	50 - 150
Triclopyr	91.6	92.4	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A80747
Included Lab Sample IDs: 1950102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	96.4	P/P	60 - 150

Reference Method: SM 5310 B-00
Run ID: A80752
Included Lab Sample IDs: 1950085

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A80760
Included Lab Sample IDs: 1950085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	99.0	99.0	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A80824
Included Lab Sample IDs: 1950102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	101	P/P	60 - 150
Carbamazepine	104	109	P/P	60 - 150
Diuron	102	98.6	P/P	60 - 150
Fenuron	101	102	P/P	60 - 150
Fluridone	105	113	P/P	60 - 160
Imidacloprid	97.1	98.0	P/P	60 - 150
Linuron	99.6	106	P/P	60 - 150
Primidone	103	101	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A80834

Included Lab Sample IDs: 1950085

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80842

Included Lab Sample IDs: 1950085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80917

Included Lab Sample IDs: 1950085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	94.0	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.404	
EPA 350.1 Rev. 2.0	Ammonia-N	104	104	108			3.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	111	106			4.61
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.908
EPA 365.1 Rev. 2.0	Total-P	101	94.3	92.8			1.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	104	101			3.41
EPA 8321B	Sucralose	114	78.0	81.0			3.59
SM 2320 B-97	Total Alkalinity	102				0.483	
SM 4500 F-C-97	Fluoride	93.9	94.4	95.7			0.953
SM 5310 B-00	Organic Carbon	98.8	98.3	97.3			0.774
USGS O-2060-01	2,4-D	85.6	86.3	81.7			5.32
	Acetaminophen	104	79.5	76.5			2.93
	Bentazon	58.7	52.7	49.4			2.80
	Carbamazepine	109	110	112			1.60
	Diuron	103	95.5	101			5.30
	Fenuron	109	104	109			4.15
	Fluridone	113	96.4	103			4.52
	Imidacloprid	108	141	141			0.0721
	Linuron	104	97.8	104			5.99
	MCPPP	87.8	68.3	67.7			0.952
	Primidone	109	118	121			2.27
	Triclopyr	83.1	66.1	64.6			2.33

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1950084
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1950085
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1950085
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1950085
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1950085
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1950086
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1950102
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1950084
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1950084
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1950084
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1950085
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1950102
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1950102

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	12/01/2017			12/01/2017 12:18	Tanya Welborn	1950084
EPA 350.1 Rev. 2.0	12/01/2017			12/11/2017	Sofia Elnemr	1950085
EPA 351.2 Rev. 2.0	12/01/2017	12/08/2017	Adrian Shelby	12/11/2017	Joseph Suarez	1950085
EPA 353.2 Rev. 2.0	12/01/2017			12/07/2017	Lauren Bottorf	1950085
EPA 365.1 Rev. 2.0	12/01/2017	12/06/2017	Sima Feizi	12/11/2017	Lipi Saha	1950085
EPA 365.1 Rev. 2.0 dissolved	12/01/2017			12/01/2017 15:04	Megan Treadwell	1950086
EPA 8321B	12/01/2017	12/06/2017	Juyoung Kim	12/07/2017	Juyoung Kim	1950102
SM 2320 B-97	12/01/2017			12/04/2017	Dale L. Simmons	1950084
SM 2540 D-97	12/01/2017			12/06/2017	Yijie Li	1950084
SM 4500 F-C-97	12/01/2017			12/04/2017	Dale L. Simmons	1950084
SM 5310 B-00	12/01/2017			12/07/2017	Ping Hua	1950085
USGS O-2060-01	12/01/2017	12/06/2017	Hoor Shaik	12/07/2017	Julie Michelle Frank	1950102
	12/01/2017	12/06/2017	Hoor Shaik	12/08/2017	Julie Michelle Frank	1950102