

Chemical Analysis Report

NW-DIST-2017-06-20-02

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

Event Description: **Pens/Cant Run WBID489A 542 586 531**
Request ID: **RQ-2017-06-19-24**
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: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 12-JUL-2017 10:43



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: Rest Area Run below Beaver Dam Ck

Collection Date/Time: 06/19/2017 10:20

Field ID: G5NW0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907520	EPA 8321B	Sucralose**	0.34		ug/L	P327142	
	USGS O-2060-01	2,4-D	0.0019	I	ug/L	P327266	
		Diuron	8.0E-04	U	ug/L	P327266	
		Fenuron	0.0080	U	ug/L	P327266	MS, RPD
		Imidacloprid	0.015		ug/L	P327266	
		Bentazon	8.0E-04	U	ug/L	P327266	
		Linuron	0.0040	U	ug/L	P327266	
		Acetaminophen**	0.0080	U	ug/L	P327266	RPD
		MCP	0.0042	I	ug/L	P327266	
		Carbamazepine**	0.0035		ug/L	P327266	
		Triclopyr**	0.0040	U	ug/L	P327266	
		Primidone**	0.0040	U	ug/L	P327266	
		Fluridone**	4.0E-04	U	ug/L	P327266	

Ref. Method and Comment:
USGS O-2060-01: Results confirmed in re-extraction.

Sample Location: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907491	EPA 180.1 Rev. 2.0	Turbidity	3.8	A	NTU	P327195	
	EPA 300.0 Rev. 2.1	Chloride	5.8		mg Cl/L	P327406	
		Sulfate	0.76		mg SO4/L	P327409	
	SM 2120 B	Color (true)	120		PCU	P327146	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P327452	
	SM 2540 C-97	TDS	73		mg/L	P327490	
	SM 2540 D-97	TSS	3	I	mg/L	P327528	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P327456	
1907492	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P327288	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P327190	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P327302	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P327314	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P327458	
1907493	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P327173	

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: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907521	EPA 8321B	Sucralose**	0.18		ug/L	P327142	
	USGS O-2060-01	2,4-D	9.6E-04	I	ug/L	P327266	
		Diuron	8.0E-04	U	ug/L	P327266	
		Fenuron	0.0080	U	ug/L	P327266	MS, RPD

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907521	USGS O-2060-01	Imidacloprid	0.0058		ug/L	P327266	
		Bentazon	8.0E-04	U	ug/L	P327266	
		Linuron	0.0040	U	ug/L	P327266	
		Acetaminophen**	0.0080	U	ug/L	P327266	RPD
		MCPD	0.0020	U	ug/L	P327266	
		Carbamazepine**	4.0E-04	U	ug/L	P327266	
		Triclopyr**	0.0040	U	ug/L	P327266	
		Primidone**	0.0046	I	ug/L	P327266	
		Fluridone**	4.0E-04	U	ug/L	P327266	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P327195

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P327406

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P327409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P327288

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P327190

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P327302

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P327314

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327314

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327173

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

Reference Method: EPA 8321B
Batch ID: P327142

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P327146

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P327452

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

Reference Method: SM 2540 C-97
Batch ID: P327490

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327528

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P327458

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

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P327266

Component	Result	Code	Units
2,4-D	8.0E-04	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 300.0 Rev. 2.1
Batch ID: P327406

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327288

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: P327190

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327302

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327314

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327173

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

Reference Method: EPA 8321B
Batch ID: P327142

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	82.5		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P327452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P327458

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

Reference Method: USGS O-2060-01
Batch ID: P327266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.2		P	40 - 150
Acetaminophen	70.8		P	40 - 150
Bentazon	61.0		P	40 - 150
Carbamazepine	120		P	40 - 150
Diuron	117		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	98.0		P	40 - 150
Imidacloprid	96.0		P	40 - 160
Linuron	113		P	40 - 150
MCP	75.4		P	40 - 150
Primidone	109		P	40 - 150
Triclopyr	78.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Chloride	93.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907786	Chloride	99.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Sulfate	91.3		P	90 - 110
1907786	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327288

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907380	Ammonia-N	101	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907461	Kjeldahl Nitrogen	89.4	99.3	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907474	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907461	Total-P	96.8	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907383	O-Phosphate-P	95.7	95.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P327142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907192	Sucralose	70.5	55.0	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907606	Fluoride	98.9	101	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P327458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907492	Organic Carbon	92.2	94.1	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P327266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1907845	2,4-D	72.2	79.0	P/P	40 - 150
1907845	Acetaminophen	97.2	61.4	P/P	40 - 150
1907845	Bentazon	50.8	49.6	P/P	40 - 150
1907845	Carbamazepine	122	120	P/P	40 - 150
1907845	Diuron	106	101	P/P	40 - 150
1907845	Fenuron	188	101	F/P	40 - 150
1907845	Fluridone	68.0	80.2	P/P	40 - 150
1907845	Imidacloprid	134	128	P/P	40 - 160
1907845	Linuron	99.0	100	P/P	40 - 150
1907845	MCCP	64.8	62.0	P/P	40 - 150
1907845	Primidone	109	103	P/P	40 - 150
1907845	Triclopyr	65.4	63.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P327195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907491	Turbidity	13.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Sulfate	2.48	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P327288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907380	Ammonia-N	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P327190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907461	Kjeldahl Nitrogen	9.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P327302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907474	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P327314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907461	Total-P	1.20	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P327173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907383	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P327142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907192	Sucralose	24.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P327146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907364	Color (true)	1.66	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P327452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Total Alkalinity	3.25	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P327490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907364	TDS	5.06	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P327456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907606	Fluoride	1.49	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P327458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907492	Organic Carbon	1.28	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P327266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907845	2,4-D	3.94	Spike	P	0 - 30
1907845	Acetaminophen	45.1	Spike	F	0 - 30
1907845	Bentazon	2.39	Spike	P	0 - 30
1907845	Carbamazepine	1.82	Spike	P	0 - 30
1907845	Diuron	4.44	Spike	P	0 - 30
1907845	Fenuron	60.2	Spike	F	0 - 30
1907845	Fluridone	13.5	Spike	P	0 - 30
1907845	Imidacloprid	4.13	Spike	P	0 - 30
1907845	Linuron	1.20	Spike	P	0 - 30
1907845	MCPP	4.42	Spike	P	0 - 30
1907845	Primidone	5.67	Spike	P	0 - 30
1907845	Triclopyr	2.48	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: 1907520
Field Sample ID: G5NW0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	68.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	80.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	117	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	115	P	30 - 160
USGS O-2060-01	Diuron-d6	92.5	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 150

Lab Sample ID: 1907521
Field Sample ID: G5NW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	68.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	85.3	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1907521
Field Sample ID: G5NW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Acetaminophen-d4	122	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	114	P	30 - 160
USGS O-2060-01	Diuron-d6	85.4	P	30 - 160
USGS O-2060-01	Primidone-d5	105	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A77183
Included Lab Sample IDs: 1907491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.1	100	P/P	90 - 110
Sulfate	95.9	100	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A77207
Included Lab Sample IDs: 1907491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	96.9	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A77215
Included Lab Sample IDs: 1907493

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: A77223
Included Lab Sample IDs: 1907491

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A77259
Included Lab Sample IDs: 1907492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A77262
Included Lab Sample IDs: 1907492

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77292

Included Lab Sample IDs: 1907492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77305

Included Lab Sample IDs: 1907492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77329

Included Lab Sample IDs: 1907491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77329

Included Lab Sample IDs: 1907491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A77331

Included Lab Sample IDs: 1907492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	94.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A77371

Included Lab Sample IDs: 1907520, 1907521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.4	84.4	P/P	50 - 150
2,4-D	83.2	85.6	P/P	50 - 150
Acetaminophen	107	116	P/P	60 - 150
Acetaminophen	97.6	108	P/P	60 - 150
Bentazon	82.0	86.4	P/P	50 - 150
Bentazon	85.6	91.6	P/P	50 - 150
Carbamazepine	108	108	P/P	60 - 150
Carbamazepine	112	113	P/P	60 - 150
Diuron	104	110	P/P	60 - 150
Diuron	106	103	P/P	60 - 150
Fenuron	104	104	P/P	60 - 150
Fenuron	114	114	P/P	60 - 150
Fluridone	106	105	P/P	60 - 160
Fluridone	113	104	P/P	60 - 160
Imidacloprid	102	102	P/P	60 - 150
Imidacloprid	102	95.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A77371

Included Lab Sample IDs: 1907520, 1907521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	105	96.0	P/P	60 - 150
Linuron	105	113	P/P	60 - 150
MCP	80.8	85.6	P/P	50 - 150
MCP	84.8	84.8	P/P	50 - 150
Primidone	105	96.4	P/P	60 - 150
Primidone	98.4	94.4	P/P	60 - 150
Triclopyr	78.8	86.4	P/P	50 - 150
Triclopyr	84.4	86.0	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A77393

Included Lab Sample IDs: 1907520, 1907521

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	68.8	85.0	P/P	60 - 160
Sucralose	85.0	76.2	P/P	60 - 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	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				13.3	
EPA 300.0 Rev. 2.1	Chloride	103	93.4 99.7		1.59	
	Sulfate	102	91.3 98.6		2.48	
EPA 350.1 Rev. 2.0	Ammonia-N	104	101 98.7			1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	89.4 99.3			9.15
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	103 103			0.0
EPA 365.1 Rev. 2.0	Total-P	101	96.8 98.0			1.20
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.7 95.7			0.0
EPA 8321B	Sucralose	82.5	70.5 55.0			24.7
SM 2120 B	Color (true)				1.66	
SM 2320 B-97	Total Alkalinity	104			3.25	
SM 2540 C-97	TDS				5.06	
SM 4500 F-C-97	Fluoride	97.1	98.9 101			1.49
SM 5310 B-00	Organic Carbon	93.8	92.2 94.1			1.28
USGS O-2060-01	2,4-D	67.2	72.2 79.0			3.94
	Acetaminophen	70.8	97.2 61.4			45.1
	Bentazon	61.0	50.8 49.6			2.39
	Carbamazepine	120	122 120			1.82
	Diuron	117	106 101			4.44
	Fenuron	114	188 101			60.2
	Fluridone	98.0	68.0 80.2			13.5
	Imidacloprid	96.0	134 128			4.13
	Linuron	113	99.0 100			1.20
	MCP	75.4	64.8 62.0			4.42

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
USGS O-2060-01	Primidone	109	109	103		5.67
	Triclopyr	78.4	65.4	63.8		2.48

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1907491
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1907491
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1907491
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1907492
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1907492
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1907492
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1907492
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1907493
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1907520, 1907521
SM 2120 B / E31780	True Color measured at 450 nm	1907491
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1907491
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1907491
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1907491
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1907491
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1907492
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1907520, 1907521
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1907520, 1907521

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	06/20/2017			06/20/2017 16:32	DeAsia Armster	1907491
EPA 300.0 Rev. 2.1	06/20/2017			06/22/2017	Julia Storbeck	1907491
EPA 350.1 Rev. 2.0	06/20/2017			06/21/2017	Sofia Elnemr	1907492
EPA 351.2 Rev. 2.0	06/20/2017	06/21/2017	Adrian Shelby	06/22/2017	Tanya Welborn	1907492
EPA 353.2 Rev. 2.0	06/20/2017			06/22/2017	Beverly Y. Sanders	1907492
EPA 365.1 Rev. 2.0	06/20/2017	06/22/2017	Adrian Shelby	06/23/2017	Lipi Saha	1907492
EPA 365.1 Rev. 2.0 dissolved	06/20/2017			06/20/2017 15:49	Anthony C. Onicha	1907493
EPA 8321B	06/20/2017	06/27/2017	Mohammad Ghaffari	06/27/2017	Mohammad Ghaffari	1907520, 1907521
SM 2120 B	06/20/2017			06/20/2017 15:18	Tanya Welborn	1907491
SM 2320 B-97	06/20/2017			06/24/2017	Dale L. Simmons	1907491
SM 2540 C-97	06/20/2017			06/21/2017	Yijie Li	1907491
SM 2540 D-97	06/20/2017			06/21/2017	Yijie Li	1907491
SM 4500 F-C-97	06/20/2017			06/24/2017	Dale L. Simmons	1907491
SM 5310 B-00	06/20/2017			06/24/2017	Sofia Elnemr	1907492
USGS O-2060-01	06/20/2017	06/22/2017	Hoor Shaik	06/26/2017	Juyoung Kim	1907520, 1907521