

Chemical Analysis Report

NE-DIST-2018-01-19-01

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

Event Description: **Davis_CM_2018**
Request ID: **RQ-2018-01-15-45**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 08-FEB-2018 15:55



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: Craig Cr @ Hendricks Ave

Collection Date/Time: 01/18/2018 10:30

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960705	EPA 180.1 Rev. 2.0	Turbidity	9.8		NTU	P338511	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P338685	
		Sulfate	46		mg SO4/L	P338687	
	SM 2120 B	Color (true)	65		PCU	P338514	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P338923	
	SM 2540 C-97	TDS	281		mg/L	P338982	
	SM 2540 D-97	TSS	6	I	mg/L	P338974	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P339356	
1960707	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P338852	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P338597	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P338713	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P338582	
	SM 5310 B-00	Organic Carbon	9.3		mg C/L	P338921	
1960709	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P338508	

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: Craig Cr @ Hendricks Ave

Collection Date/Time: 01/18/2018 10:30

Field ID: 20030793

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960731	EPA 8321B	Sucralose**	0.47		ug/L	P338457	
	USGS O-2060-01	2,4-D	0.012		ug/L	P338463	
		Diuron	0.0020	U	ug/L	P338463	
		Fenuron	0.017	I	ug/L	P338463	
		Imidacloprid	0.019		ug/L	P338463	
		Bentazon	0.026		ug/L	P338463	
		Linuron	0.0040	U	ug/L	P338463	
		Acetaminophen**	0.0080	U	ug/L	P338463	
		MCPD	0.012		ug/L	P338463	
		Carbamazepine**	6.2E-04	I	ug/L	P338463	
		Triclopyr**	0.0040	U	ug/L	P338463	
		Primidone**	0.0040	U	ug/L	P338463	
		Fluridone**	0.025		ug/L	P338463	

Sample Location: Moncrief Cr @ Moncrief Rd.

Collection Date/Time: 01/18/2018 09:30

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960706	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P338512	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P338685	
		Sulfate	42		mg SO4/L	P338687	
	SM 2120 B	Color (true)	17		PCU	P338514	
	SM 2320 B-97	Total Alkalinity	145		mg CaCO3/L	P338923	

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960706	SM 2540 C-97	TDS	232		mg/L	P338982	
	SM 2540 D-97	TSS	2	I	mg/L	P338974	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P339356	
1960708	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P338852	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P338597	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P338713	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P338877	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P338921	
1960710	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P338508	

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: Moncrief Cr @ Moncrief Rd.

Collection Date/Time: 01/18/2018 09:30

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1960732	EPA 8321B	Sucralose**	0.20		ug/L	P338457	
	USGS O-2060-01	2,4-D	0.016		ug/L	P338463	
		Diuron	0.037		ug/L	P338463	
		Fenuron	0.0080	U	ug/L	P338463	
		Imidacloprid	0.014		ug/L	P338463	
		Bentazon	0.0048		ug/L	P338463	
		Linuron	0.0040	U	ug/L	P338463	
		Acetaminophen**	0.058		ug/L	P338463	
		MCP	0.0020	U	ug/L	P338463	
		Carbamazepine**	5.2E-04	I	ug/L	P338463	
		Triclopyr**	0.0040	U	ug/L	P338463	
		Primidone**	0.0040	U	ug/L	P338463	
		Fluridone**	0.0071		ug/L	P338463	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P338511

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P338512

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P338685

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338685

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338687

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338852

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338597

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338713

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338582

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338877

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338508

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

Reference Method: EPA 8321B
Batch ID: P338457

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P338514

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P338923

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

Reference Method: SM 2540 C-97
Batch ID: P338982

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338974

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P338921

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

Reference Method: USGS O-2060-01
Batch ID: P338463

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	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Imidacloprid	0.0020	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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338685

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338687

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338852

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338713

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: P338582

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: P338877

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338508

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

Reference Method: EPA 8321B
Batch ID: P338457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.4		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P338923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P338921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	79.4		P	40 - 150
Acetaminophen	97.1		P	30 - 150
Bentazon	80.1		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	89.8		P	40 - 150
Fenuron	122		P	40 - 150
Imidacloprid	112		P	40 - 160
Linuron	99.2		P	40 - 150
MCP	81.4		P	40 - 150
Primidone	115		P	40 - 150
Triclopyr	72.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960644	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960644	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960646	Ammonia-N	96.8	96.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960865	Kjeldahl Nitrogen	108	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960707	NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960708	Total-P	96.1	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961302	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960709	O-Phosphate-P	97.0	96.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P338457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960487	Sucralose	97.9	93.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P339356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960705	Fluoride	97.7	93.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P338921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960558	Organic Carbon	96.6	97.5	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960453	2,4-D	133	138	P/P	40 - 150
1960453	Acetaminophen	99.9	96.7	P/P	30 - 150
1960453	Bentazon	95.9	97.0	P/P	30 - 150
1960453	Carbamazepine	107	106	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P338463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960453	Diuron	94.8	95.5	P/P	40 - 150
1960453	Fenuron	113	109	P/P	40 - 150
1960453	Imidacloprid	120	118	P/P	40 - 160
1960453	Linuron	99.9	99.1	P/P	40 - 150
1960453	MCP	111	119	P/P	40 - 150
1960453	Primidone	114	112	P/P	40 - 150
1960453	Triclopyr	118	126	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960551	Turbidity	0.399	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960706	Turbidity	0.587	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960644	Chloride	0.549	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960644	Sulfate	0.696	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960646	Ammonia-N	0.0477	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338597

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960865	Kjeldahl Nitrogen	7.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960707	NO2NO3-N	0.602	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960708	Total-P	0.270	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961302	Total-P	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960709	O-Phosphate-P	0.519	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P338457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960487	Sucralose	4.82	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P338514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960551	Color (true)	7.86	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P338923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961439	Total Alkalinity	0.671	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
 Batch ID: P338982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960601	TDS	3.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P339356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960705	Fluoride	2.90	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P338921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960558	Organic Carbon	0.641	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P338463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1960453	2,4-D	3.61	Spike	P	0 - 30
1960453	Acetaminophen	3.31	Spike	P	0 - 30
1960453	Bentazon	1.19	Spike	P	0 - 30
1960453	Carbamazepine	0.659	Spike	P	0 - 30
1960453	Diuron	0.799	Spike	P	0 - 30
1960453	Fenuron	3.70	Spike	P	0 - 30
1960453	Imidacloprid	1.68	Spike	P	0 - 30
1960453	Linuron	0.804	Spike	P	0 - 30
1960453	MCP	7.48	Spike	P	0 - 30
1960453	Primidone	2.39	Spike	P	0 - 30
1960453	Triclopyr	5.98	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: 1960731
 Field Sample ID: 20030793

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.2	P	30 - 160
EPA 8321B	Diuron-d6	87.6	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160
USGS O-2060-01	2,4-D-d3	108	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	102	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1960731
Field Sample ID: 20030793

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Carbamazepine-d10	99.2	P	30 - 160
USGS O-2060-01	Diuron-d6	87.6	P	30 - 160
USGS O-2060-01	Primidone-d5	109	P	30 - 160
USGS O-2060-01	Sucralose-d6	107	P	40 - 160

Lab Sample ID: 1960732
Field Sample ID: 20030726

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	100	P	30 - 160
EPA 8321B	Primidone-d5	126	P	30 - 160
EPA 8321B	Sucralose-d6	94.7	P	40 - 160
USGS O-2060-01	2,4-D-d3	76.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	105	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	110	P	30 - 160
USGS O-2060-01	Diuron-d6	100	P	30 - 160
USGS O-2060-01	Primidone-d5	126	P	30 - 160
USGS O-2060-01	Sucralose-d6	94.7	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81557
Included Lab Sample IDs: 1960709, 1960710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	100	P/P	90 - 110
O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81558
Included Lab Sample IDs: 1960705, 1960706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A81559
Included Lab Sample IDs: 1960705, 1960706

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81589

Included Lab Sample IDs: 1960707

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81616

Included Lab Sample IDs: 1960705, 1960706

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81617

Included Lab Sample IDs: 1960707, 1960708

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81625

Included Lab Sample IDs: 1960707, 1960708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81665

Included Lab Sample IDs: 1960707, 1960708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	99.7	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A81671

Included Lab Sample IDs: 1960731, 1960732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.9	89.8	P/P	50 - 150
Acetaminophen	101	101	P/P	60 - 150
Bentazon	104	96.6	P/P	50 - 150
Carbamazepine	112	112	P/P	60 - 150
Diuron	111	114	P/P	60 - 150
Fenuron	105	109	P/P	60 - 150
Fluridone	113	122	P/P	60 - 160
Imidacloprid	107	107	P/P	60 - 150
Linuron	104	115	P/P	60 - 150
MCPP	95.7	94.8	P/P	50 - 150
Primidone	103	107	P/P	60 - 150
Triclopyr	99.5	84.0	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A81689

Included Lab Sample IDs: 1960705, 1960706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	97.2	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81692

Included Lab Sample IDs: 1960707, 1960708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81706

Included Lab Sample IDs: 1960708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81725

Included Lab Sample IDs: 1960731, 1960732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	98.8	P/P	60 - 150

Reference Method: SM 4500 F-C-97

Run ID: A81863

Included Lab Sample IDs: 1960705, 1960706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.5	P/P	90 - 110
Fluoride	99.5	99.1	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				0.399	
	Turbidity				0.587	
EPA 300.0 Rev. 2.1	Chloride	103	101		0.549	
	Sulfate	102	99.4		0.696	
EPA 350.1 Rev. 2.0	Ammonia-N	106	96.8	96.8		0.0477
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	108	99.5		7.54
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102			0.602
EPA 365.1 Rev. 2.0	Total-P	101	96.1	96.4		0.270
	Total-P	102	102	101		1.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.0	96.4		0.519

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Sucralose	97.4	97.9	93.1		4.82
SM 2120 B	Color (true)				7.86	
SM 2320 B-97	Total Alkalinity	99.5			0.671	
SM 2540 C-97	TDS				3.51	
SM 4500 F-C-97	Fluoride	96.0	97.7	93.6		2.90
SM 5310 B-00	Organic Carbon	96.6	96.6	97.5		0.641
USGS O-2060-01	2,4-D	79.4	138	133		3.61
	Acetaminophen	97.1	99.9	96.7		3.31
	Bentazon	80.1	97.0	95.9		1.19
	Carbamazepine	102	107	106		0.659
	Diuron	89.8	94.8	95.5		0.799
	Fenuron	122	113	109		3.70
	Imidacloprid	112	120	118		1.68
	Linuron	99.2	99.9	99.1		0.804
	MCPP	81.4	119	111		7.48
	Primidone	115	114	112		2.39
	Triclopyr	72.2	126	118		5.98

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1960705, 1960706
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1960705, 1960706
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1960705, 1960706
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1960707, 1960708
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1960707, 1960708
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1960707, 1960708
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1960707, 1960708
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1960709, 1960710
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1960731, 1960732
SM 2120 B / E31780	True Color measured at 450 nm	1960705, 1960706
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1960705, 1960706
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1960705, 1960706
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1960705, 1960706
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1960705, 1960706
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1960707, 1960708
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1960731, 1960732
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1960731, 1960732

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	01/19/2018			01/19/2018 16:30	DeAsia Armster	1960705, 1960706
EPA 300.0 Rev. 2.1	01/19/2018			01/24/2018	Julia Storbeck	1960705, 1960706
EPA 350.1 Rev. 2.0	01/19/2018			01/25/2018	Ping Hua	1960707, 1960708
EPA 351.2 Rev. 2.0	01/19/2018	01/23/2018	Adrian Shelby	01/24/2018	Joseph Suarez	1960707, 1960708
EPA 353.2 Rev. 2.0	01/19/2018			01/24/2018	Lauren Bottorf	1960707, 1960708
EPA 365.1 Rev. 2.0	01/19/2018	01/22/2018	Sima Feizi	01/23/2018	Beverly Y. Sanders	1960707
	01/19/2018	01/26/2018	Sima Feizi	01/29/2018	Lipi Saha	1960708
EPA 365.1 Rev. 2.0 dissolved	01/19/2018			01/19/2018 15:42	Megan Treadwell	1960709
	01/19/2018			01/19/2018 16:05	Megan Treadwell	1960710
EPA 8321B	01/19/2018	01/25/2018	Juyoung Kim	01/25/2018	Juyoung Kim	1960731, 1960732
SM 2120 B	01/19/2018			01/19/2018 16:30	Tanya Welborn	1960705
	01/19/2018			01/19/2018 16:31	Tanya Welborn	1960706
SM 2320 B-97	01/19/2018			01/27/2018	Lauren Bottorf	1960705, 1960706
SM 2540 C-97	01/19/2018			01/24/2018	Yijie Li	1960705, 1960706
SM 2540 D-97	01/19/2018			01/24/2018	Yijie Li	1960705, 1960706
SM 4500 F-C-97	01/19/2018			02/05/2018	Dale L. Simmons	1960705, 1960706
SM 5310 B-00	01/19/2018			01/27/2018	Megan Treadwell	1960707, 1960708
USGS O-2060-01	01/19/2018	01/23/2018	Hoor Shaik	01/24/2018	Julie Michelle Frank	1960731, 1960732