

Chemical Analysis Report

TLH-ROC-2018-01-10-02

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

Event Description: **A-b/t/m**
Request ID: **RQ-2018-01-08-21**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 29-JAN-2018 14:22



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: Mule Creek @ SR 12

Collection Date/Time: 01/10/2018 12:45

Field ID: G1TLHR0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958569	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P338121	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P338248	
	SM 2120 B	Color (true)	99		PCU	P338107	
	SM 2320 B-97	Total Alkalinity	0.85	I	mg CaCO3/L	P338673	
	SM 2540 C-97	TDS	16	I	mg/L	P338390	
	SM 2540 D-97	TSS	4	I	mg/L	P338549	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P338677	
1958570	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P338306	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P338329	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.59		mg N/L	P338177	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P338171	
	SM 5310 B-00	Organic Carbon	6.2		mg C/L	P338323	
1958571	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P338137	
1958575	EPA 8321B	Sucralose**	0.010	U	ug/L	P338238	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P337928	
		Diuron	0.0020	U	ug/L	P337928	
		Fenuron	0.0083	I	ug/L	P337928	
		Imidacloprid	0.0020	U	ug/L	P337928	MS
		Bentazon	8.0E-04	U	ug/L	P337928	
		Linuron	0.0040	U	ug/L	P337928	
		Acetaminophen**	0.0080	U	ug/L	P337928	
		MCP	0.0020	U	ug/L	P337928	
		Carbamazepine**	4.0E-04	U	ug/L	P337928	
		Triclopyr**	0.0040	U	ug/L	P337928	
		Primidone**	0.0040	U	ug/L	P337928	
		Fluridone**	0.0014	I	ug/L	P337928	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P338121

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P338248

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338171

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338137

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

Reference Method: EPA 8321B
Batch ID: P338238

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P338107

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P338673

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

Reference Method: SM 2540 C-97
Batch ID: P338390

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P338549

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P338677

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P338323

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

Reference Method: USGS O-2060-01
Batch ID: P337928

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
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	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: P338248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

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: P338329

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P338177

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P338171

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P338137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.2		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P338238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	86.4		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P338673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P338677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.6		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P338323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P337928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	40 - 150
Acetaminophen	85.8		P	30 - 150
Bentazon	96.7		P	30 - 150
Carbamazepine	102		P	40 - 150
Diuron	82.9		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	115		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	93.5		P	40 - 150
MCPP	95.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P337928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	95.0		P	40 - 150
Triclopyr	95.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P338248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958469	Chloride	107		P	90 - 110
1958470	Chloride	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P338306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	Ammonia-N	105	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P338329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958628	Kjeldahl Nitrogen	96.1	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P338177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958479	NO2NO3-N	101	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P338171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958559	Total-P	98.0	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P338137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958481	O-Phosphate-P	98.0	101	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P338238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958065	Sucralose	96.1	93.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P338677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959526	Fluoride	95.7	95.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P338323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958475	Organic Carbon	94.0	94.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P337928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957757	2,4-D	96.1	98.9	P/P	40 - 150
1957757	Acetaminophen	125	141	P/P	30 - 150
1957757	Bentazon	92.7	99.2	P/P	30 - 150
1957757	Carbamazepine	97.9	115	P/P	40 - 150
1957757	Diuron	84.2	98.0	P/P	40 - 150
1957757	Fenuron	73.5	85.2	P/P	40 - 150
1957757	Fluridone	80.9	95.1	P/P	40 - 150
1957757	Imidacloprid	164	194	F/F	40 - 160
1957757	Linuron	89.8	100	P/P	40 - 150
1957757	MCP	78.5	85.6	P/P	40 - 150
1957757	Primidone	79.2	90.5	P/P	40 - 150
1957757	Triclopyr	76.9	79.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958637	Turbidity	1.08	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958469	Chloride	0.313	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P338306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	Ammonia-N	1.66	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958628	Kjeldahl Nitrogen	3.11	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958479	NO2NO3-N	3.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958559	Total-P	4.36	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958481	O-Phosphate-P	2.08	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P338238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958065	Sucralose	2.51	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P338107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958557	Color (true)	1.75	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P338673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959526	Total Alkalinity	0.728	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P338390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958557	TDS	5.55	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P338677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1959526	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P338323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958475	Organic Carbon	0.338	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P337928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957757	2,4-D	2.87	Spike	P	0 - 30
1957757	Acetaminophen	12.4	Spike	P	0 - 30
1957757	Bentazon	6.73	Spike	P	0 - 30
1957757	Carbamazepine	15.8	Spike	P	0 - 30
1957757	Diuron	15.1	Spike	P	0 - 30
1957757	Fenuron	14.7	Spike	P	0 - 30
1957757	Fluridone	16.1	Spike	P	0 - 30
1957757	Imidacloprid	16.6	Spike	P	0 - 30
1957757	Linuron	11.1	Spike	P	0 - 30
1957757	MCPP	8.71	Spike	P	0 - 30
1957757	Primidone	13.3	Spike	P	0 - 30
1957757	Triclopyr	3.69	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: 1958575
Field Sample ID: G1TLHR0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	148	P	30 - 160
EPA 8321B	Diuron-d6	114	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160
USGS O-2060-01	2,4-D-d3	117	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	117	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	148	P	30 - 160
USGS O-2060-01	Diuron-d6	114	P	30 - 160
USGS O-2060-01	Primidone-d5	118	P	30 - 160
USGS O-2060-01	Sucralose-d6	101	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81397

Included Lab Sample IDs: 1958569

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

Reference Method: SM 2120 B

Run ID: A81418

Included Lab Sample IDs: 1958569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A81425

Included Lab Sample IDs: 1958569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81428

Included Lab Sample IDs: 1958571

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81440

Included Lab Sample IDs: 1958570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81466

Included Lab Sample IDs: 1958570

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81474

Included Lab Sample IDs: 1958570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	108	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81480

Included Lab Sample IDs: 1958570

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.4	92.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A81482
Included Lab Sample IDs: 1958575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.4	87.4	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A81530
Included Lab Sample IDs: 1958575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	106	P/P	60 - 150
Carbamazepine	111	131	P/P	60 - 150
Diuron	107	108	P/P	60 - 150
Fenuron	103	108	P/P	60 - 150
Imidacloprid	98.7	97.2	P/P	60 - 150
Linuron	110	113	P/P	60 - 150
Primidone	101	99.8	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A81531
Included Lab Sample IDs: 1958575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.2	97.0	P/P	50 - 150
Bentazon	95.5	92.6	P/P	50 - 150
Fluridone	106	107	P/P	60 - 160
MCPP	86.6	88.0	P/P	50 - 150
Triclopyr	100	95.4	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81550
Included Lab Sample IDs: 1958570

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

Reference Method: SM 2320 B-97
Run ID: A81614
Included Lab Sample IDs: 1958569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	97.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A81614
Included Lab Sample IDs: 1958569

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.08	
EPA 300.0 Rev. 2.1	Chloride	108	107	107		0.313	
EPA 350.1 Rev. 2.0	Ammonia-N	106	105	102			1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	96.1	100			3.11
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	98.0			3.02
EPA 365.1 Rev. 2.0	Total-P	98.6	98.0	93.0			4.36
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2	98.0	101			2.08
EPA 8321B	Sucralose	86.4	96.1	93.6			2.51
SM 2120 B	Color (true)					1.75	
SM 2320 B-97	Total Alkalinity	98.8				0.728	
SM 2540 C-97	TDS					5.55	
SM 4500 F-C-97	Fluoride	94.6	95.7	95.7			0.0
SM 5310 B-00	Organic Carbon	94.4	94.0	94.4			0.338
USGS O-2060-01	2,4-D	103	96.1	98.9			2.87
	Acetaminophen	85.8	125	141			12.4
	Bentazon	96.7	92.7	99.2			6.73
	Carbamazepine	102	97.9	115			15.8
	Diuron	82.9	84.2	98.0			15.1
	Fenuron	112	73.5	85.2			14.7
	Fluridone	115	80.9	95.1			16.1
	Imidacloprid	102	164	194			16.6
	Linuron	93.5	89.8	100			11.1
	MCP	95.9	78.5	85.6			8.71
	Primidone	95.0	79.2	90.5			13.3
	Triclopyr	95.2	76.9	79.8			3.69

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1958569
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1958569
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1958570
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1958570
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1958570
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1958570
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1958571
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1958575
SM 2120 B / E31780	True Color measured at 450 nm	1958569
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1958569
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1958569
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1958569
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1958569
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1958570
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1958575
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1958575

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	01/10/2018			01/11/2018 14:38	DeAsia Armster	1958569
EPA 300.0 Rev. 2.1	01/10/2018			01/13/2018	Julia Storbeck	1958569
EPA 350.1 Rev. 2.0	01/10/2018			01/16/2018	Sofia Elnemr	1958570
EPA 351.2 Rev. 2.0	01/10/2018	01/17/2018	Adrian Shelby	01/19/2018	Joseph Suarez	1958570
EPA 353.2 Rev. 2.0	01/10/2018			01/12/2018	Lauren Bottorf	1958570
EPA 365.1 Rev. 2.0	01/10/2018	01/12/2018	Sima Feizi	01/16/2018	Lipi Saha	1958570
EPA 365.1 Rev. 2.0 dissolved	01/10/2018			01/11/2018 13:09	Megan Treadwell	1958571
EPA 8321B	01/10/2018	01/16/2018	Juyoung Kim	01/17/2018	Juyoung Kim	1958575
SM 2120 B	01/10/2018			01/11/2018 15:16	Tanya Welborn	1958569
SM 2320 B-97	01/10/2018			01/23/2018	Dale L. Simmons	1958569
SM 2540 C-97	01/10/2018			01/13/2018	Yijie Li	1958569
SM 2540 D-97	01/10/2018			01/13/2018	Yijie Li	1958569
SM 4500 F-C-97	01/10/2018			01/23/2018	Dale L. Simmons	1958569
SM 5310 B-00	01/10/2018			01/16/2018	Megan Treadwell	1958570
USGS O-2060-01	01/10/2018	01/10/2018	Hoor Shaik	01/12/2018	Julie Michelle Frank	1958575
	01/10/2018	01/10/2018	Hoor Shaik	01/17/2018	Julie Michelle Frank	1958575