

Chemical Analysis Report

SE-DIST-2017-10-25-01

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

Event Description: **SMP-G1 Extra samples**

Request ID: **RQ-2017-09-25-55**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-NOV-2017 13:47



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: Metals, 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: Otter Creek @ 441

Collection Date/Time: 10/24/2017 11:15

Field ID: G1SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939747	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P334057	
	EPA 300.0 Rev. 2.1	Chloride	95		mg Cl/L	P334255	
		Sulfate	40		mg SO4/L	P334259	
	SM 2120 B	Color (true)	150		PCU	P334054	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P334144	
	SM 2540 C-97	TDS	322		mg/L	P334616	
	SM 2540 D-97	TSS	4	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P334146	MS
1939749	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P334471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P334631	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	25		mg C/L	P334512	
1939751	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P334050	
1939766	EPA 8321B	Sucralose**	0.028	I	ug/L	P334158	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335525	
		Diuron	8.0E-04	U	ug/L	P334159	
		Fenuron	0.0080	U	ug/L	P334159	
		Imidacloprid	8.3E-04	I	ug/L	P334159	MS
		Bentazon	8.0E-04	UQ	ug/L	P335525	
		Linuron	0.0040	U	ug/L	P334159	
		Acetaminophen**	0.012	I	ug/L	P334159	
		MCP	0.0020	UQ	ug/L	P335525	
		Carbamazepine**	4.0E-04	UQ	ug/L	P335525	
		Triclopyr**	0.0040	UQ	ug/L	P335525	
		Primidone**	0.0040	U	ug/L	P334159	
		Fluridone**	4.0E-04	U	ug/L	P334159	

Ref. Method and Comment:

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

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Sample Location: Popash Slough @ SR-70

Collection Date/Time: 10/24/2017 11:45

Field ID: G1SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939744	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P334057	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P334255	
		Sulfate	2.7		mg SO4/L	P334259	
	SM 2120 B	Color (true)	520		PCU	P334054	
	SM 2320 B-97	Total Alkalinity	38		mg CaCO3/L	P334144	
	SM 2540 C-97	TDS	162	A	mg/L	P334616	
	SM 2540 D-97	TSS	3	IA	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.065	I	mg F/L	P334146	MS
1939745	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P334471	

Field ID: G1SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939745	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P334630	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.59		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P334512	
1939746	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.48		mg P/L	P334050	

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: Taylor Creek @ SR-70

Collection Date/Time: 10/24/2017 12:15

Field ID: G1SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939753	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P334057	
	EPA 300.0 Rev. 2.1	Chloride	54		mg Cl/L	P334255	
		Sulfate	34		mg SO4/L	P334259	
	SM 2120 B	Color (true)	220		PCU	P334054	
	SM 2320 B-97	Total Alkalinity	167		mg CaCO3/L	P334145	
	SM 2540 C-97	TDS	387		mg/L	P334616	
	SM 2540 D-97	TSS	9	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P334147	
1939754	EPA 350.1 Rev. 2.0	Ammonia-N	0.96		mg N/L	P334567	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.5		mg N/L	P334631	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P334512	
1939755	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P334050	
1939768	EPA 8321B	Sucralose**	0.17		ug/L	P334158	
	USGS O-2060-01	2,4-D	0.025	Q	ug/L	P335525	
		Diuron	0.0023	I	ug/L	P334159	
		Fenuron	0.0080	U	ug/L	P334159	
		Imidacloprid	0.015		ug/L	P334159	MS
		Bentazon	0.087	Q	ug/L	P335525	
		Linuron	0.0040	U	ug/L	P334159	
		Acetaminophen**	0.0080	U	ug/L	P334159	
		MCP	0.0020	UQ	ug/L	P335525	
		Carbamazepine**	0.0014	IQ	ug/L	P335525	
		Triclopyr**	0.0040	UQ	ug/L	P335525	
		Primidone**	0.0040	U	ug/L	P334159	
		Fluridone**	4.0E-04	U	ug/L	P334159	
1939769	EPA 200.7 Rev. 4.4	Calcium	75.5		mg/L	P334131	
		Iron	1.62E+03		ug/L	P334131	
		Magnesium	6.51		mg/L	P334131	
		Potassium	4.4		mg/L	P334131	
		Sodium	35.7		mg/L	P334131	
		Zinc	5.0	U	ug/L	P334131	

Field ID: G1SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939769	EPA 200.8 Rev. 5.4	Arsenic	1.80		ug/L	P334131	
		Cadmium	0.020	U	ug/L	P334131	
		Chromium	0.85	I	ug/L	P334131	
		Copper	0.49	I	ug/L	P334131	
		Lead	0.23		ug/L	P335017	
		Nickel	0.87		ug/L	P334131	
		Silver	0.010	U	ug/L	P334131	

Ref. Method and Comment:

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

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Sample Location: Henry Creek @ 170

Collection Date/Time: 10/24/2017 12:45

Field ID: G1SE0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939748	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P334057	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P334255	
		Sulfate	22		mg SO4/L	P334259	
	SM 2120 B	Color (true)	540		PCU	P334054	
	SM 2320 B-97	Total Alkalinity	47		mg CaCO3/L	P334144	
	SM 2540 C-97	TDS	365		mg/L	P334616	
	SM 2540 D-97	TSS	8	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P334146	MS
1939750	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P334471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P335016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.65		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	42		mg C/L	P334512	
1939752	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.50		mg P/L	P334050	
1939767	EPA 8321B	Sucralose**	0.034	I	ug/L	P334158	
	USGS O-2060-01	2,4-D	0.0065	IQ	ug/L	P335525	
		Diuron	8.0E-04	U	ug/L	P334159	
		Fenuron	0.0080	U	ug/L	P334159	
		Imidacloprid	0.0043		ug/L	P334159	MS
		Bentazon	8.0E-04	UQ	ug/L	P335525	
		Linuron	0.0040	U	ug/L	P334159	
		Acetaminophen**	0.0080	U	ug/L	P334159	
		MCP	0.0020	UQ	ug/L	P335525	
		Carbamazepine**	4.0E-04	UQ	ug/L	P335525	
		Triclopyr**	0.0040	UQ	ug/L	P335525	
		Primidone**	0.0040	U	ug/L	P334159	
		Fluridone**	4.0E-04	U	ug/L	P334159	

Ref. Method and Comment:

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

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334057

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334131

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334131

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335017

Component	Result	Code	Units
Lead	0.050	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334471

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334630

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334050

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

Reference Method: EPA 8321B
Batch ID: P334158

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P334054

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P334144

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

Reference Method: SM 2320 B-97
Batch ID: P334145

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

Reference Method: SM 2540 C-97
Batch ID: P334616

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334656

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P334146

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P334512

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

Reference Method: USGS O-2060-01
Batch ID: P334159

Component	Result	Code	Units
Acetaminophen	0.0080	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
Primidone	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P335525

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	104		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	98.5		P	85 - 115
Sodium	99.9		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	106		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	104		P	85 - 115
Copper	102		P	85 - 115
Nickel	103		P	85 - 115
Silver	99.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	98.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	92.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334630

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

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: P334118

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	94.1		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P334158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.0		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P334144

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

Reference Method: SM 2320 B-97
Batch ID: P334145

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

Reference Method: SM 4500 F-C-97
Batch ID: P334146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P334512

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

Reference Method: USGS O-2060-01
Batch ID: P334159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	126		P	30 - 150
Diuron	105		P	40 - 150
Fenuron	56.8		P	40 - 150
Fluridone	109		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	108		P	40 - 150
Primidone	105		P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.9		P	40 - 150
Bentazon	87.8		P	30 - 150
Carbamazepine	108		P	40 - 150
MCPP	68.4		P	40 - 150
Triclopyr	69.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939742	Calcium	103		P	80 - 120
1939742	Iron	103		P	80 - 120
1939742	Magnesium	101		P	80 - 120
1939742	Potassium	97.7		P	80 - 120
1939742	Sodium	99.2		P	80 - 120
1939742	Zinc	98.2		P	80 - 120
1939923	Calcium	107	106	P/P	80 - 120
1939923	Iron	104	104	P/P	80 - 120
1939923	Magnesium	107	106	P/P	80 - 120
1939923	Potassium	106	106	P/P	80 - 120
1939923	Sodium	102		P	80 - 120
1939923	Zinc	102	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939742	Arsenic	107		P	80 - 120
1939742	Cadmium	106		P	80 - 120
1939742	Chromium	103		P	80 - 120
1939742	Copper	98.7		P	80 - 120
1939742	Nickel	102		P	80 - 120
1939742	Silver	100		P	80 - 120
1939923	Arsenic	105	104	P/P	80 - 120
1939923	Cadmium	106	105	P/P	80 - 120
1939923	Chromium	102	105	P/P	80 - 120
1939923	Copper	101	99.7	P/P	80 - 120
1939923	Nickel	102	105	P/P	80 - 120
1939923	Silver	99.1	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939777	Lead	97.4		P	80 - 120
1941704	Lead	96.3	96.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939780	Chloride	104	104	P/P	90 - 110
1939808	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939780	Sulfate	98.9	99.6	P/P	90 - 110
1939808	Sulfate	98.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939708	Ammonia-N	99.0	95.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939785	Ammonia-N	96.2	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939643	Kjeldahl Nitrogen	89.3	84.1	F/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939785	Kjeldahl Nitrogen	98.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942360	Kjeldahl Nitrogen	96.9	96.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939750	NO2NO3-N	94.8	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939740	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939648	O-Phosphate-P	92.7	99.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P334158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939692	Sucralose	64.6	64.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
 Batch ID: P334146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939705	Fluoride	104	106	P/F	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P334147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939884	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P334512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939645	Organic Carbon	94.8	94.9	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P334159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940015	Acetaminophen	139	120	P/P	30 - 150
1940015	Diuron	81.3	81.3	P/P	40 - 150
1940015	Fenuron	97.0	115	P/P	40 - 150
1940015	Fluridone	98.3	97.1	P/P	40 - 150
1940015	Imidacloprid	240	241	F/F	40 - 160
1940015	Linuron	115	113	P/P	40 - 150
1940015	Primidone	98.8	107	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939691	2,4-D	100	98.3	P/P	40 - 150
1939691	Bentazon	98.4	107	P/P	30 - 150
1939691	Carbamazepine	102	105	P/P	40 - 150
1939691	MCP	78.3	78.0	P/P	40 - 150
1939691	Triclopyr	79.9	81.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P334057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939704	Turbidity	2.33	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P334131

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P334131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939923	Calcium	0.409	Spike	P	0 - 20
1939923	Iron	0.116	Spike	P	0 - 20
1939923	Magnesium	0.668	Spike	P	0 - 20
1939923	Potassium	0.0319	Spike	P	0 - 20
1939923	Sodium	0.655	Spike	P	0 - 20
1939923	Zinc	0.689	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P334131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939923	Arsenic	0.982	Spike	P	0 - 20
1939923	Cadmium	0.691	Spike	P	0 - 20
1939923	Chromium	3.13	Spike	P	0 - 20
1939923	Copper	1.12	Spike	P	0 - 20
1939923	Nickel	2.42	Spike	P	0 - 20
1939923	Silver	1.83	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P335017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1941704	Lead	0.185	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939780	Chloride	0.489	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939780	Sulfate	0.667	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939708	Ammonia-N	1.98	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939785	Ammonia-N	1.17	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939643	Kjeldahl Nitrogen	3.62	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939785	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P335016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1942360	Kjeldahl Nitrogen	0.531	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939750	NO2NO3-N	0.384	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939740	Total-P	2.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939648	O-Phosphate-P	6.77	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P334158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939692	Sucralose	0.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P334054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939704	Color (true)	2.10	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P334144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939705	Total Alkalinity	0.460	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P334145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939884	Total Alkalinity	0.110	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P334616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939744	TDS	6.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P334146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939705	Fluoride	1.94	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939884	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P334512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939645	Organic Carbon	0.0826	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P334159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940015	Acetaminophen	14.0	Spike	P	0 - 30
1940015	Diuron	0.0246	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P334159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940015	Fenuron	17.2	Spike	P	0 - 30
1940015	Fluridone	1.21	Spike	P	0 - 30
1940015	Imidacloprid	0.166	Spike	P	0 - 30
1940015	Linuron	2.40	Spike	P	0 - 30
1940015	Primidone	7.93	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P335525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939691	2,4-D	1.89	Spike	P	0 - 30
1939691	Bentazon	7.80	Spike	P	0 - 30
1939691	Carbamazepine	3.33	Spike	P	0 - 30
1939691	MCP	0.482	Spike	P	0 - 30
1939691	Triclopyr	1.87	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: 1939766
Field Sample ID: G1SE0007

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	126	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.1	P	30 - 160
EPA 8321B	Diuron-d6	68.7	P	30 - 160
EPA 8321B	Primidone-d5	82.9	P	30 - 160
EPA 8321B	Sucralose-d6	70.4	P	40 - 160
USGS O-2060-01	2,4-D-d3	67.7	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	126	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	67.1	P	30 - 160
USGS O-2060-01	Diuron-d6	68.7	P	30 - 160
USGS O-2060-01	Primidone-d5	82.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	70.4	P	40 - 160

Lab Sample ID: 1939767
Field Sample ID: G1SE0002

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	144	P	30 - 160
EPA 8321B	Carbamazepine-d10	54.9	P	30 - 160
EPA 8321B	Diuron-d6	63.5	P	30 - 160
EPA 8321B	Primidone-d5	74.8	P	30 - 160
EPA 8321B	Sucralose-d6	93.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	66.5	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	144	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1939767
Field Sample ID: G1SE0002

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	Carbamazepine-d10	54.9	P	30 - 160
USGS O-2060-01	Diuron-d6	63.5	P	30 - 160
USGS O-2060-01	Primidone-d5	74.8	P	30 - 160
USGS O-2060-01	Sucralose-d6	93.8	P	40 - 160

Lab Sample ID: 1939768
Field Sample ID: G1SE0011

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.1	P	30 - 160
EPA 8321B	Diuron-d6	63.5	P	30 - 160
EPA 8321B	Primidone-d5	83.9	P	30 - 160
EPA 8321B	Sucralose-d6	68.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	63.1	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	106	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	61.1	P	30 - 160
USGS O-2060-01	Diuron-d6	63.5	P	30 - 160
USGS O-2060-01	Primidone-d5	83.9	P	30 - 160
USGS O-2060-01	Sucralose-d6	68.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79806
Included Lab Sample IDs: 1939746, 1939751, 1939752, 1939755

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	92.1	90.7	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A79807
Included Lab Sample IDs: 1939744, 1939747, 1939748, 1939753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	85 - 115
Color (true)	98.3	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79808
Included Lab Sample IDs: 1939744, 1939747, 1939748, 1939753

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

Reference Method: SM 2320 B-97
Run ID: A79839
Included Lab Sample IDs: 1939744, 1939747, 1939748, 1939753

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

Reference Method: SM 2320 B-97

Run ID: A79839

Included Lab Sample IDs: 1939744, 1939747, 1939748, 1939753

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79839

Included Lab Sample IDs: 1939744, 1939747, 1939748, 1939753

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79857

Included Lab Sample IDs: 1939745, 1939749, 1939750, 1939754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.0	P/P	90 - 110
Total-P	99.0	99.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A79868

Included Lab Sample IDs: 1939769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	103	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Potassium	100	99.9	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	98.5	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79916

Included Lab Sample IDs: 1939745, 1939749, 1939750, 1939754

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

Reference Method: EPA 8321B

Run ID: A79945

Included Lab Sample IDs: 1939766, 1939767, 1939768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	97.1	98.8	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79954

Included Lab Sample IDs: 1939745, 1939749, 1939750

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79954

Included Lab Sample IDs: 1939745, 1939749, 1939750

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79972

Included Lab Sample IDs: 1939769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	105	109	P/P	90 - 110
Nickel	105	109	P/P	90 - 110
Silver	98.8	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79974

Included Lab Sample IDs: 1939745, 1939749, 1939750, 1939754

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.4	P/P	90 - 110
Organic Carbon	98.0	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79995

Included Lab Sample IDs: 1939754

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80041

Included Lab Sample IDs: 1939769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	107	107	P/P	90 - 110
Cadmium	104	105	P/P	90 - 110
Copper	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80098

Included Lab Sample IDs: 1939745, 1939749, 1939754

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80216

Included Lab Sample IDs: 1939750

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A80218

Included Lab Sample IDs: 1939769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	93.1	95.3	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A80386

Included Lab Sample IDs: 1939766, 1939767, 1939768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	104	P/P	50 - 150
Bentazon	128	119	P/P	50 - 150
Carbamazepine	123	123	P/P	60 - 150
MCP	106	107	P/P	50 - 150
Triclopyr	102	101	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A80401

Included Lab Sample IDs: 1939766, 1939767, 1939768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	122	122	P/P	60 - 150
Diuron	115	113	P/P	60 - 150
Fenuron	115	115	P/P	60 - 150
Fluridone	125	125	P/P	60 - 160
Imidacloprid	113	108	P/P	60 - 150
Linuron	121	119	P/P	60 - 150
Primidone	108	114	P/P	60 - 150

* 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			Precision	
			LCS			SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.33	
EPA 200.7 Rev. 4.4	Calcium	106	103	107	106		0.409
	Iron	104	103	104	104		0.116
	Magnesium	107	101	107	106		0.668
	Potassium	98.5	97.7	106	106		0.0319
	Sodium	99.9	99.2	102			0.655
	Zinc	101	98.2	102	103		0.689
EPA 200.8 Rev. 5.4	Arsenic	106	107	105	104		0.982
	Cadmium	105	106	106	105		0.691
	Chromium	104	103	102	105		3.13
	Copper	102	98.7	101	99.7		1.12
	Lead	98.0	97.4	96.3	96.1		0.185
	Nickel	103	102	102	105		2.42
	Silver	99.5	100	99.1	101		1.83
EPA 300.0 Rev. 2.1	Chloride	104	104	104	103		0.489

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	
			LCS	SMP	MS	SMP	MS
EPA 300.0 Rev. 2.1	Sulfate	99.6	98.9	99.6	98.7		0.667
EPA 350.1 Rev. 2.0	Ammonia-N	92.9	99.0	95.9			1.98
	Ammonia-N	93.1	96.2	95.0			1.17
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7	89.3	84.1			3.62
	Kjeldahl Nitrogen	100	98.6	100			1.16
	Kjeldahl Nitrogen	101	96.9	96.2			0.531
EPA 353.2 Rev. 2.0	NO2NO3-N	104	94.8	95.3			0.384
EPA 365.1 Rev. 2.0	Total-P	103	104	107			2.87
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	94.1	92.7	99.2			6.77
EPA 8321B	Sucralose	85.0	64.6	64.6			0.0
SM 2120 B	Color (true)					2.10	
SM 2320 B-97	Total Alkalinity	102				0.460	
	Total Alkalinity	102				0.110	
SM 2540 C-97	TDS					6.77	
SM 4500 F-C-97	Fluoride	96.3	104	106			1.94
	Fluoride	97.3	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	96.6	94.8	94.9			0.0826
USGS O-2060-01	2,4-D	92.9	100	98.3			1.89
	Acetaminophen	126	139	120			14.0
	Bentazon	87.8	98.4	107			7.80
	Carbamazepine	108	102	105			3.33
	Diuron	105	81.3	81.3			0.0246
	Fenuron	56.8	97.0	115			17.2
	Fluridone	109	98.3	97.1			1.21
	Imidacloprid	108	240	241			0.166
	Linuron	108	115	113			2.40
	MCPP	68.4	78.3	78.0			0.482
	Primidone	105	98.8	107			7.93
	Triclopyr	69.3	79.9	81.5			1.87

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1939744, 1939747, 1939748, 1939753
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1939769
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1939769
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1939744, 1939747, 1939748, 1939753
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1939744, 1939747, 1939748, 1939753
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1939745, 1939749, 1939750, 1939754
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1939745, 1939749, 1939750, 1939754
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1939745, 1939749, 1939750, 1939754
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1939745, 1939749, 1939750, 1939754
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1939746, 1939751, 1939752, 1939755
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1939766, 1939767, 1939768
SM 2120 B / E31780	True Color measured at 450 nm	1939744, 1939747, 1939748, 1939753

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1939744, 1939747, 1939748, 1939753
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1939744, 1939747, 1939748, 1939753
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1939744, 1939747, 1939748, 1939753
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1939744, 1939747, 1939748, 1939753
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1939745, 1939749, 1939750, 1939754
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1939766, 1939767, 1939768
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1939766, 1939767, 1939768

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	10/25/2017			10/25/2017 16:57	DeAsia Armster	1939744, 1939747, 1939748, 1939753
EPA 200.7 Rev. 4.4	10/25/2017	10/26/2017	Elliott D. Healy	10/27/2017	Betina Topolski	1939769
EPA 200.8 Rev. 5.4	10/25/2017	10/26/2017	Elliott D. Healy	11/01/2017	Nadine Brooks	1939769
	10/25/2017	10/26/2017	Elliott D. Healy	11/03/2017	Nadine Brooks	1939769
	10/25/2017	11/09/2017	Elliott D. Healy	11/13/2017	Nadine Brooks	1939769
EPA 300.0 Rev. 2.1	10/25/2017			10/27/2017	Irina Carbone	1939744, 1939747, 1939748, 1939753
EPA 350.1 Rev. 2.0	10/25/2017			10/31/2017	Sofia Elnemr	1939745, 1939749, 1939750
	10/25/2017			11/01/2017	Sofia Elnemr	1939754
EPA 351.2 Rev. 2.0	10/25/2017	11/03/2017	Adrian Shelby	11/06/2017	Joseph Suarez	1939745, 1939749, 1939754
	10/25/2017	11/09/2017	Adrian Shelby	11/13/2017	Joseph Suarez	1939750
EPA 353.2 Rev. 2.0	10/25/2017			10/31/2017	Beverly Y. Sanders	1939745, 1939749, 1939750, 1939754
EPA 365.1 Rev. 2.0	10/25/2017	10/26/2017	Sima Feizi	10/27/2017	Lipi Saha	1939745, 1939749, 1939750, 1939754
EPA 365.1 Rev. 2.0 dissolved	10/25/2017			10/25/2017 15:26	Megan Treadwell	1939751
	10/25/2017			10/25/2017 15:27	Megan Treadwell	1939746, 1939755
	10/25/2017			10/25/2017 15:28	Megan Treadwell	1939752
EPA 8321B	10/25/2017	10/30/2017	Juyoung Kim	10/30/2017	Juyoung Kim	1939766, 1939767, 1939768
SM 2120 B	10/25/2017			10/25/2017 15:58	Tanya Welborn	1939747
	10/25/2017			10/25/2017 16:30	Tanya Welborn	1939744, 1939748
	10/25/2017			10/25/2017 16:31	Tanya Welborn	1939753
SM 2320 B-97	10/25/2017			10/26/2017	Dale L. Simmons	1939744, 1939747, 1939748, 1939753
SM 2540 C-97	10/25/2017			10/27/2017	Yijie Li	1939744, 1939747, 1939748, 1939753
SM 2540 D-97	10/25/2017			10/27/2017	Yijie Li	1939744, 1939747, 1939748, 1939753
SM 4500 F-C-97	10/25/2017			10/26/2017	Dale L. Simmons	1939744, 1939747, 1939748, 1939753
SM 5310 B-00	10/25/2017			11/01/2017	Ping Hua	1939745, 1939749, 1939750, 1939754
USGS O-2060-01	10/25/2017	10/30/2017	Hoor Shaik	11/02/2017	Julie Michelle Frank	1939766, 1939767, 1939768
	10/25/2017	11/16/2017	Hoor Shaik	11/19/2017	Julie Michelle Frank	1939766, 1939767, 1939768