

Chemical Analysis Report

NW-DIST-2017-05-25-01

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

Event Description: **ENR A & Perdido River WBID 1004D 462A 784 462B,C**
Request ID: **RQ-2017-05-22-28**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 19-JUN-2017 14:51



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: BIG LAGOON HWY 292 ICW BRIDGE ESC CO. Collection Date/Time: 05/24/2017 09:55

Field ID: G5NW0121

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901592	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P325845	
	SM 2320 B-97	Total Alkalinity	90		mg CaCO3/L	P325954	
	SM 2540 D-97	TSS	10	A	mg/L	P326350	
	SM 4500 F-C-97	Fluoride	0.88		mg F/L	P325958	
1901598	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P326127	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P325869	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326084	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P325876	MS
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P326193	
1901604	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325854	

Sample Location: BIG LAGOON STATE PARK SEAGRASS STATION Collection Date/Time: 05/24/2017 10:10

Field ID: G5NW0122

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901593	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P325845	
	SM 2320 B-97	Total Alkalinity	90		mg CaCO3/L	P325954	
	SM 2540 D-97	TSS	10		mg/L	P326350	
	SM 4500 F-C-97	Fluoride	0.89		mg F/L	P325958	
1901599	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P326127	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P325869	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P326084	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P325876	MS
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P326193	
1901605	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325854	

Sample Location: TEE LAKE CENTER Collection Date/Time: 05/24/2017 12:00

Field ID: G5NW0035

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901594	EPA 180.1 Rev. 2.0	Turbidity	4.2	A	NTU	P325846	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P325953	
	SM 2540 D-97	TSS	9	I	mg/L	P326349	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P325957	RPD
1901600	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P325919	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P325871	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P325964	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P325875	
	SM 5310 B-00	Organic Carbon	8.9		mg C/L	P326159	
1901606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325853	

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: PERDIDIO RIVER AT MOUTH Collection Date/Time: 05/24/2017 12:15

Field ID: G5NW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901595	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P325846	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P325953	
	SM 2540 D-97	TSS	7	I	mg/L	P326349	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P325957	RPD
1901601	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P325919	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37		mg N/L	P325871	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P325964	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P325875	
	SM 5310 B-00	Organic Carbon	5.3		mg C/L	P326159	
1901607	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325853	

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: PERDIDIO RIVER BELOW ALLIGATOR BAYOU **Collection Date/Time: 05/24/2017 12:40**

Field ID: G5NW0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901596	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P325846	
	SM 2320 B-97	Total Alkalinity	4.7		mg CaCO3/L	P326074	
	SM 2540 D-97	TSS	5	I	mg/L	P326349	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P326076	RPD
1901602	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P325919	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P325871	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P325964	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P325944	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P326159	
1901608	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325853	

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: PERDIDIO RIVER 250 METERS ABOVE
BLACKWATER (AL) CONFLUENCE** **Collection Date/Time: 05/24/2017 12:55**

Field ID: G5NW0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901597	EPA 180.1 Rev. 2.0	Turbidity	8.4		NTU	P325846	
	SM 2320 B-97	Total Alkalinity	1.2	I	mg CaCO3/L	P326074	
	SM 2540 D-97	TSS	5	I	mg/L	P326349	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P326076	RPD
1901603	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P325920	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P325940	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P325964	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P325944	
	SM 5310 B-00	Organic Carbon	7.9		mg C/L	P326159	
1901609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325853	

Field ID: G5NW0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: PERDIDIO RIVER 250 METERS ABOVE
 BLACKWATER (AL) CONFLUENCE

Collection Date/Time: 05/24/2017 12:55

Field ID: G5NW0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901624	EPA 8321B	Sucralose**	0.056		ug/L	P325805	
	USGS O-2060-01	2,4-D	0.0070		ug/L	P325789	
		Diuron	0.0033		ug/L	P325789	
		Fenuron	0.0040	U	ug/L	P325789	
		Imidacloprid	0.0094		ug/L	P325789	
		Bentazon	8.0E-04	U	ug/L	P325789	MS
		Linuron	0.0040	U	ug/L	P325789	
		Acetaminophen**	0.0080	U	ug/L	P325789	
		MCP	0.0020	U	ug/L	P325789	
		Carbamazepine**	4.8E-04	I	ug/L	P325789	
		Triclopyr**	0.0040	U	ug/L	P325789	
		Primidone**	0.0040	U	ug/L	P325789	
		Fluridone**	4.0E-04	U	ug/L	P325789	

Ref. Method and Comment:
 USGS O-2060-01: Indaziflam = 0.0038 ug/L.

Sample Location: PERDIDIO RIVER 400 METERS ABOVE MOUTH
 OF STYX RIVER

Collection Date/Time: 05/24/2017 13:10

Field ID: G5NW0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1901589	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P325847	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P326763	
		Sulfate	1.2		mg SO4/L	P326766	
	SM 2120 B	Color (true)	110		PCU	P325849	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P326074	
	SM 2540 C-97	TDS	24	I	mg/L	P326434	
	SM 2540 D-97	TSS	8	I	mg/L	P326348	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P326076	RPD
1901590	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P325919	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P325871	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P325964	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P325875	
	SM 5310 B-00	Organic Carbon	9.8		mg C/L	P326159	
1901591	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325853	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325845

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325846

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325847

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326763

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326766

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325919

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325920

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326127

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325869

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325871

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325940

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325964

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326084

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325875

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325876

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325944

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325853

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325854

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P325805

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P325849

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325953

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

Reference Method: SM 2320 B-97
Batch ID: P325954

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

Reference Method: SM 2320 B-97
Batch ID: P326074

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

Reference Method: SM 2540 C-97
Batch ID: P326434

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326348

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326349

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326350

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P325957

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325958

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326076

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326159

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

Reference Method: SM 5310 B-00
Batch ID: P326193

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

Reference Method: USGS O-2060-01
Batch ID: P325789

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	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: P326763

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326766

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326127

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325869

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325871

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325940

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325964

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326084

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325875

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: P325876

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325944

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.5		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P325805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	79.3		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P325953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P325954

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

Reference Method: SM 2320 B-97
Batch ID: P326074

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P325957

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.8		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P326076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P326159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.6		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P325789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	66.6		P	40 - 140
Acetaminophen	48.4		P	40 - 140
Bentazon	63.2		P	40 - 140
Carbamazepine	92.2		P	40 - 140
Diuron	89.0		P	40 - 140
Fenuron	88.8		P	40 - 140
Fluridone	85.0		P	40 - 140
Imidacloprid	77.0		P	40 - 160
Linuron	74.6		P	40 - 140
MCP	81.2		P	40 - 140
Primidone	78.6		P	40 - 140
Triclopyr	77.4		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901477	Chloride	108		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901589	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901477	Sulfate	101		P	90 - 110
1901589	Sulfate	93.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901531	Ammonia-N	96.1	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901603	Ammonia-N	97.8	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901230	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901231	Kjeldahl Nitrogen	98.1	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901602	Kjeldahl Nitrogen	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901701	Kjeldahl Nitrogen	97.0	94.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901590	NO2NO3-N	97.7	98.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901213	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901600	Total-P	108	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901232	Total-P	89.2	93.8	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901703	Total-P	93.3	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901489	O-Phosphate-P	93.4	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901604	O-Phosphate-P	96.0	96.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P325805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901732	Sucralose	94.3	75.7	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P325957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901426	Fluoride	94.3	98.5	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901339	Fluoride	94.4	96.4	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P326076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901838	Fluoride	93.0	97.7	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P326159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1901411	Organic Carbon	89.7	89.8	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1900849	Organic Carbon	97.8	96.4	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P325789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1900995	2,4-D	71.4	63.8	P/P	40 - 140
1900995	Acetaminophen	79.2	75.4	P/P	40 - 140
1900995	Bentazon	31.4	28.0	F/F	40 - 140
1900995	Carbamazepine	69.6	62.2	P/P	40 - 140
1900995	Diuron	57.8	52.0	P/P	40 - 140
1900995	Fenuron	49.4	67.6	P/P	40 - 140
1900995	Fluridone	75.0	65.6	P/P	40 - 140
1900995	Imidacloprid	120	111	P/P	40 - 160
1900995	Linuron	77.0	70.4	P/P	40 - 140
1900995	MCP	64.0	54.2	P/P	40 - 140
1900995	Primidone	64.2	62.4	P/P	40 - 140
1900995	Triclopyr	67.4	63.2	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901525	Turbidity	5.32	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901594	Turbidity	1.19	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901715	Turbidity	4.41	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901477	Chloride	0.330	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901477	Sulfate	0.151	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901531	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901603	Ammonia-N	0.218	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901230	Ammonia-N	0.236	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901231	Kjeldahl Nitrogen	1.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901602	Kjeldahl Nitrogen	1.96	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901701	Kjeldahl Nitrogen	1.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901590	NO2NO3-N	0.862	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901213	NO2NO3-N	0.766	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901600	Total-P	5.51	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901232	Total-P	4.77	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901703	Total-P	2.88	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901489	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901604	O-Phosphate-P	0.830	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P325805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901732	Sucralose	19.4	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P325849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901485	Color (true)	4.56	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P325953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901426	Total Alkalinity	0.344	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P325954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901339	Total Alkalinity	0.861	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901838	Total Alkalinity	0.505	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P326434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901697	TDS	0.255	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P326350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901592	TSS	3.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901426	Fluoride	3.38	Spike	F	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
 Batch ID: P325958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901339	Fluoride	1.00	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
 Batch ID: P326076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901838	Fluoride	3.98	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P326159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1901411	Organic Carbon	0.0273	Spike	P	0 - 20

Reference Method: SM 5310 B-00
 Batch ID: P326193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1900849	Organic Carbon	1.25	Spike	P	0 - 20

Reference Method: USGS O-2060-01
 Batch ID: P325789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1900995	2,4-D	10.5	Spike	P	0 - 30
1900995	Acetaminophen	4.92	Spike	P	0 - 30
1900995	Bentazon	11.4	Spike	P	0 - 30
1900995	Carbamazepine	11.2	Spike	P	0 - 30
1900995	Diuron	10.6	Spike	P	0 - 30
1900995	Fenuron	23.4	Spike	P	0 - 30
1900995	Fluridone	13.4	Spike	P	0 - 30
1900995	Imidacloprid	7.63	Spike	P	0 - 30
1900995	Linuron	8.96	Spike	P	0 - 30
1900995	MCPP	16.6	Spike	P	0 - 30
1900995	Primidone	2.84	Spike	P	0 - 30
1900995	Triclopyr	6.43	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

Quality Assurance Report Surrogates

Lab Sample ID: 1901624
Field Sample ID: G5NW0014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	87.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	86.0	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	111	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	97.2	P	30 - 160
USGS O-2060-01	Diuron-d6	76.0	P	30 - 160
USGS O-2060-01	Primidone-d5	95.8	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76678
Included Lab Sample IDs: 1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	101	102	P/P	95 - 105
Turbidity	102	100	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A76679
Included Lab Sample IDs: 1901589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76680
Included Lab Sample IDs: 1901591, 1901604, 1901605, 1901606, 1901607, 1901608, 1901609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	101	P/P	90 - 110
O-Phosphate-P	99.0	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76718
Included Lab Sample IDs: 1901590, 1901600, 1901601, 1901602, 1901603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.8	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A76730
Included Lab Sample IDs: 1901592, 1901593, 1901594, 1901595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	102	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A76730

Included Lab Sample IDs: 1901592, 1901593, 1901594, 1901595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	94.3	95.2	P/P	90 - 110
Fluoride	95.7	94.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76743

Included Lab Sample IDs: 1901590, 1901600, 1901601, 1901602, 1901603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	97.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A76745

Included Lab Sample IDs: 1901624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	79.5	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A76790

Included Lab Sample IDs: 1901589, 1901596, 1901597

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

Reference Method: SM 4500 F-C-97

Run ID: A76790

Included Lab Sample IDs: 1901589, 1901596, 1901597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.2	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76795

Included Lab Sample IDs: 1901590, 1901598, 1901599, 1901600, 1901601, 1901602

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110
Kjeldahl Nitrogen	104	109	P/P	90 - 110
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76797

Included Lab Sample IDs: 1901598, 1901599

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76803

Included Lab Sample IDs: 1901603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76804

Included Lab Sample IDs: 1901602, 1901603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76805

Included Lab Sample IDs: 1901590, 1901598, 1901599, 1901600, 1901601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.2	94.5	P/P	90 - 110
Total-P	94.5	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76815

Included Lab Sample IDs: 1901598, 1901599

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

Reference Method: SM 5310 B-00

Run ID: A76825

Included Lab Sample IDs: 1901590, 1901600, 1901601, 1901602, 1901603

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	94.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A76846

Included Lab Sample IDs: 1901598, 1901599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	99.6	P/P	90 - 110
Organic Carbon	99.6	96.8	P/P	90 - 110

Reference Method: USGS O-2060-01

Run ID: A76863

Included Lab Sample IDs: 1901624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.8	80.8	P/P	50 - 150
Acetaminophen	96.8	100	P/P	60 - 150
Bentazon	111	109	P/P	50 - 150
Carbamazepine	107	118	P/P	60 - 150
Diuron	97.6	99.6	P/P	60 - 150
Fenuron	110	114	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76863

Included Lab Sample IDs: 1901624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	108	114	P/P	60 - 160
Imidacloprid	93.2	95.6	P/P	60 - 150
Linuron	100	106	P/P	60 - 150
MCPP	95.2	92.4	P/P	50 - 150
Primidone	98.4	95.6	P/P	60 - 150
Triclopyr	94.8	87.6	P/P	50 - 150

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77072

Included Lab Sample IDs: 1901589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.0	93.9	P/P	90 - 110
Sulfate	94.2	99.8	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						5.32	
	Turbidity						1.19	
	Turbidity						4.41	
EPA 300.0 Rev. 2.1	Chloride	101		108	99.2		0.330	
	Sulfate	95.8		93.4	101		0.151	
EPA 350.1 Rev. 2.0	Ammonia-N	96.5		96.1	97.4			1.11
	Ammonia-N	96.1		97.8	97.5			0.218
	Ammonia-N	103		108	108			0.236
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		98.1	99.6			1.23
	Kjeldahl Nitrogen	104		104	101			1.96
	Kjeldahl Nitrogen	103		97.0	94.7			1.33
EPA 353.2 Rev. 2.0	NO2NO3-N	101		97.7	98.7			0.862
	NO2NO3-N	102		104	103			0.766
EPA 365.1 Rev. 2.0	Total-P	101		108	101			5.51
	Total-P	106		89.2	93.8			4.77
	Total-P	100		93.3	96.2			2.88
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.2		93.4	94.8			1.40
	O-Phosphate-P	99.5		96.0	96.8			0.830
EPA 8321B	Sucralose	79.3		94.3	75.7			19.4
SM 2120 B	Color (true)						4.56	
SM 2320 B-97	Total Alkalinity	103					0.344	
	Total Alkalinity	104					0.861	
	Total Alkalinity	104					0.505	
SM 2540 C-97	TDS						0.255	
SM 2540 D-97	TSS						3.92	
SM 4500 F-C-97	Fluoride	95.8		94.3	98.5			3.38

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-97	Fluoride	94.8	94.4	96.4		1.00
	Fluoride	94.7	93.0	97.7		3.98
SM 5310 B-00	Organic Carbon	92.6	89.7	89.8		0.0273
	Organic Carbon	97.2	97.8	96.4		1.25
USGS O-2060-01	2,4-D	66.6	71.4	63.8		10.5
	Acetaminophen	48.4	79.2	75.4		4.92
	Bentazon	63.2	31.4	28.0		11.4
	Carbamazepine	92.2	69.6	62.2		11.2
	Diuron	89.0	57.8	52.0		10.6
	Fenuron	88.8	49.4	67.6		23.4
	Fluridone	85.0	75.0	65.6		13.4
	Imidacloprid	77.0	120	111		7.63
	Linuron	74.6	77.0	70.4		8.96
	MCP	81.2	64.0	54.2		16.6
	Primidone	78.6	64.2	62.4		2.84
	Triclopyr	77.4	67.4	63.2		6.43

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1901589
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1901589
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1901590, 1901598, 1901599, 1901600, 1901601, 1901602, 1901603
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1901590, 1901598, 1901599, 1901600, 1901601, 1901602, 1901603
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1901590, 1901598, 1901599, 1901600, 1901601, 1901602, 1901603
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1901590, 1901598, 1901599, 1901600, 1901601, 1901602, 1901603
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1901591, 1901604, 1901605, 1901606, 1901607, 1901608, 1901609
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1901624
SM 2120 B / E31780	True Color measured at 450 nm	1901589
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1901589
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1901590, 1901598, 1901599, 1901600, 1901601, 1901602, 1901603
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1901624
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1901624

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	05/25/2017			05/25/2017 14:44	Sima Feizi	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
EPA 300.0 Rev. 2.1	05/25/2017			06/12/2017	Julia Storbeck	1901589
EPA 350.1 Rev. 2.0	05/25/2017			05/26/2017	Julia Storbeck	1901590, 1901600, 1901601, 1901602, 1901603
	05/25/2017			06/01/2017	Julie Michelle Frank	1901598, 1901599
EPA 351.2 Rev. 2.0	05/25/2017	05/26/2017	Adrian Shelby	06/01/2017	Joseph Suarez	1901590, 1901598, 1901599, 1901600, 1901601, 1901602
	05/25/2017	05/30/2017	Adrian Shelby	06/01/2017	Joseph Suarez	1901603
EPA 353.2 Rev. 2.0	05/25/2017			05/30/2017	Beverly Y. Sanders	1901590, 1901600, 1901601, 1901602, 1901603
	05/25/2017			06/01/2017	Beverly Y. Sanders	1901598, 1901599
EPA 365.1 Rev. 2.0	05/25/2017	05/26/2017	Adrian Shelby	05/31/2017	Lipi Saha	1901590, 1901598, 1901599, 1901600, 1901601
	05/25/2017	05/30/2017	Adrian Shelby	06/01/2017	Lipi Saha	1901602, 1901603
EPA 365.1 Rev. 2.0 dissolved	05/25/2017			05/25/2017 14:51	Anthony C. Onicha	1901604
	05/25/2017			05/25/2017 15:11	Anthony C. Onicha	1901591
	05/25/2017			05/25/2017 15:12	Anthony C. Onicha	1901605
	05/25/2017			05/25/2017 15:13	Anthony C. Onicha	1901606, 1901607
	05/25/2017			05/25/2017 15:14	Anthony C. Onicha	1901608
	05/25/2017			05/25/2017 15:15	Anthony C. Onicha	1901609
EPA 8321B	05/25/2017	05/27/2017	Mohammad Ghaffari	05/28/2017	Mohammad Ghaffari	1901624
SM 2120 B	05/25/2017			05/25/2017 15:00	Tanya Welborn	1901589
SM 2320 B-97	05/25/2017			05/27/2017	Dale L. Simmons	1901592, 1901593, 1901594, 1901595
	05/25/2017			05/30/2017	Dale L. Simmons	1901589, 1901596, 1901597
SM 2540 C-97	05/25/2017			05/30/2017	Sima Feizi	1901589
SM 2540 D-97	05/25/2017			05/30/2017	Sima Feizi	1901589, 1901592, 1901593, 1901594, 1901595, 1901596, 1901597
SM 4500 F-C-97	05/25/2017			05/27/2017	Dale L. Simmons	1901592, 1901593, 1901594, 1901595
	05/25/2017			05/30/2017	Dale L. Simmons	1901589, 1901596, 1901597
SM 5310 B-00	05/25/2017			06/02/2017	Julie Michelle Frank	1901590, 1901600, 1901601, 1901602, 1901603
	05/25/2017			06/03/2017	Julie Michelle Frank	1901598, 1901599
USGS O-2060-01	05/25/2017	05/30/2017	Hoor Shaik	05/31/2017	Juyoung Kim	1901624