

Chemical Analysis Report

NE-DIST-2019-03-15-02

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

Event Description: **SCI Deep 2245, Ryal 2302**
Request ID: **RQ-2019-03-18-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 08-APR-2019 17:16



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: RYALS SWAMP EAST BRANCH (MAIN) @ JTB Collection Date/Time: 03/14/2019 09:00

Field ID: 20030855

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070576	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P360518	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P361009	
		Sulfate	12		mg SO4/L	P361014	
	SM 2120 B	Color (true)	100		PCU	P360522	
	SM 2320 B-97	Total Alkalinity	134		mg CaCO3/L	P360980	RPD
	SM 2540 C-97	TDS	229		mg/L	P361034	
	SM 2540 D-97	TSS	6	I	mg/L	P361026	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P360993	
2070577	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P361065	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P360875	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P360783	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P360985	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P360898	
2070578	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.093		mg P/L	P360531	
2070585	EPA 8321B	2,4-D	0.0020	U	ug/L	P360490	
		Acesulfame K**	0.14	IJ	ug/L	P360627	MS
		AMPA**	0.10	U	ug/L	P360627	
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Endothall**	0.25	UJ	ug/L	P360627	MS
		Glufosinate**	0.10	U	ug/L	P360627	
		Glyphosate**	0.10	U	ug/L	P360627	
		Bentazon	0.0083		ug/L	P360490	
		Sucralose**	0.11		ug/L	P360627	
		Carbamazepine**	8.0E-04	U	ug/L	P360490	
		Diuron	0.044		ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	0.0095		ug/L	P360490	
		Imazapyr**	0.048		ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.0044	I	ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCPP	0.0020	U	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	
2070586	EPA 200.7 Rev. 4.4	Barium	20.2		ug/L	P360716	
		Calcium	58.1		mg/L	P360716	
		Iron	290		ug/L	P360716	
		Magnesium	4.29		mg/L	P360716	
		Potassium	1.1	I	mg/L	P360716	
		Sodium	14.3		mg/L	P360716	

Field ID: 20030855

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070586	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P360716	
		Aluminum	101		ug/L	P360716	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P360716	
		Arsenic	0.29		ug/L	P360716	
		Boron**	20.5		ug/L	P360716	
		Cadmium	0.020	U	ug/L	P360716	
		Chromium	0.40	U	ug/L	P360716	
		Copper	0.72	I	ug/L	P360716	
		Lead	0.21	I	ug/L	P360716	
		Nickel	0.50	U	ug/L	P360716	
		Selenium	0.20	U	ug/L	P360716	
		Silver	0.010	U	ug/L	P360716	
		Thallium	0.10	U	ug/L	P360716	
2070587	EPA 8270D	Acetochlor	0.26	U	ng/L	P360553	
		Alachlor	0.26	U	ng/L	P360553	
		Ametryn	0.61	U	ng/L	P360553	
		Atrazine	6.0		ng/L	P360553	
		Atrazine Desethyl	1.5	U	ng/L	P360553	
		Azinphos Methyl	5.1	U	ng/L	P360553	
		Bromacil	0.51	U	ng/L	P360553	
		Butylate	0.41	U	ng/L	P360553	RPD
		Chlorpyrifos Ethyl	0.26	U	ng/L	P360553	
		Chlorpyrifos Methyl	0.10	U	ng/L	P360553	
		Cyanazine	3.3	U	ng/L	P360553	
		Demeton	7.2	U	ng/L	P360553	
		Diazinon	0.13	U	ng/L	P360553	
		Dimethenamid**	0.10	U	ng/L	P360553	
		Disulfoton	0.51	U	ng/L	P360553	
		Dithiopyr**	0.15	I	ng/L	P360553	
		EPTC	1.3	U	ng/L	P360553	RPD
		Ethion	0.15	U	ng/L	P360553	
		Ethoprop	0.10	U	ng/L	P360553	
		Fenamiphos	0.51	U	ng/L	P360553	
		Fipronil	0.26	U	ng/L	P360553	
		Fipronil Desulfinyl**	0.20	I	ng/L	P360553	
		Fipronil Sulfide	0.15	U	ng/L	P360553	
		Fipronil Sulfone	0.28	I	ng/L	P360553	
		Fonofos	0.20	U	ng/L	P360553	
		Hexazinone	0.51	U	ng/L	P360553	
		Malathion	0.36	U	ng/L	P360553	
		Metalaxyl	0.31	U	ng/L	P360553	
		Metolachlor	1.2	I	ng/L	P360553	
		Metribuzin	0.77	U	ng/L	P360553	
		Mevinphos	0.51	U	ng/L	P360553	
		Molinate	0.31	U	ng/L	P360553	

Field ID: 20030855

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070587	EPA 8270D	Norflurazon	0.51	U	ng/L	P360553	
		Oxadiazon**	1.4		ng/L	P360553	
		Parathion Ethyl	0.26	U	ng/L	P360553	
		Parathion Methyl	0.56	U	ng/L	P360553	
		Pendimethalin	1.0	U	ng/L	P360553	
		Phorate	0.26	U	ng/L	P360553	
		Prodiamine**	0.30	IJ	ng/L	P360553	LCS
		Prometon	0.92	U	ng/L	P360553	
		Prometryn	0.20	U	ng/L	P360553	
		Simazine	0.61	I	ng/L	P360553	
		Tebuconazole**	0.51	UJ	ng/L	P360553	RPD
		Terbufos	0.10	U	ng/L	P360553	
		Terbuthylazine	0.43	U	ng/L	P360553	

Ref. Method and Comment:

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

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

EPA 8270D: MS accuracies for atrazine, metalaxyl, oxidiazon, fipronil sulfide, fipronil sulfone, and fipronil not assessed due to high content of these parameters in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360518

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Component	Result	Code	Units
Barium	1.0	U	ug/L
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: P360716

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361009

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361014

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360531

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

Reference Method: EPA 8270D
Batch ID: P360553

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	5.0	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	7.0	U	ng/L
Diazinon	0.12	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.30	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P360553

Component	Result	Code	Units
Metolachlor	0.50	U	ng/L
Metribuzin	0.75	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P360490

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P360627

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P360522

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360980

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P361034

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361026

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360898

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	102		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	105		P	85 - 115
Sodium	101		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.9		P	85 - 115
Antimony	93.6		P	85 - 115
Arsenic	95.9		P	85 - 115
Boron	92.7		P	85 - 115
Cadmium	93.0		P	85 - 115
Chromium	89.2		P	85 - 115
Copper	97.2		P	85 - 115
Lead	91.1		P	85 - 115
Nickel	101		P	85 - 115
Selenium	93.5		P	85 - 115
Silver	98.9		P	85 - 115
Thallium	93.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361009

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361014

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	75.7	93.2	P/P	71 - 121
Alachlor	74.5	92.1	P/P	72 - 119
Ametryn	73.9	90.3	P/P	47 - 144
Atrazine	83.0	108	P/P	75 - 123
Atrazine Desethyl	84.0	101	P/P	45 - 133
Azinphos Methyl	104	125	P/P	66 - 165
Bromacil	72.8	95.9	P/P	43 - 123
Butylate	62.2	72.2	P/P	27 - 83.0
Chlorpyrifos Ethyl	86.3	98.7	P/P	70 - 117
Chlorpyrifos Methyl	85.5	100	P/P	71 - 120
Cyanazine	210	237	P/P	34 - 264
Demeton	69.6	73.1	P/P	41 - 122
Diazinon	79.1	99.9	P/P	70 - 127
Dimethenamid	72.6	88.1	P/P	60 - 130
Disulfoton	85.5	102	P/P	56 - 127
Dithiopyr	75.9	96.4	P/P	60 - 130
EPTC	63.7	73.5	P/P	24 - 84.0
Ethion	65.1	79.3	P/P	53 - 132
Ethoprop	87.0	95.9	P/P	57 - 117
Fenamiphos	81.5	97.6	P/P	55 - 136
Fipronil	70.5	91.3	P/P	64 - 126
Fipronil Desulfinyl	68.4	87.9	P/P	60 - 130
Fipronil Sulfide	73.9	86.1	P/P	57 - 120
Fipronil Sulfone	68.0	84.1	P/P	52 - 115
Fonofos	86.4	104	P/P	61 - 121
Hexazinone	83.5	104	P/P	62 - 131
Malathion	79.8	96.4	P/P	67 - 126
Metalaxyl	76.9	95.0	P/P	54 - 128
Metolachlor	75.2	92.0	P/P	71 - 118
Metribuzin	192	205	P/P	42 - 221
Mevinphos	75.0	96.7	P/P	45 - 114
Molinate	70.1	80.2	P/P	33 - 91.0
Norflurazon	78.1	97.0	P/P	60 - 123
Oxadiazon	77.0	95.8	P/P	60 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P360553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	81.1	94.8	P/P	73 - 111
Parathion Methyl	85.5	101	P/P	74 - 126
Pendimethalin	88.9	97.7	P/P	63 - 131
Phorate	80.3	93.8	P/P	54 - 115
Prodiamine	41.8	44.3	F/F	60 - 130
Prometon	66.2	81.2	P/P	61 - 120
Prometryn	68.4	84.7	P/P	62 - 126
Simazine	85.8	110	P/P	75 - 126
Tebuconazole	32.5	44.6	P/P	30 - 100
Terbufos	82.3	97.8	P/P	65 - 116
Terbuthylazine	81.9	98.8	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P360490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.9		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	129		P	30 - 150
Carbamazepine	111		P	40 - 150
Diuron	120		P	40 - 150
Fenuron	127		P	40 - 150
Fluridone	127		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	76.0		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	103		P	40 - 150
MCPP	82.2		P	40 - 150
Naproxen	87.3		P	40 - 150
Primidone	119		P	40 - 150
Pyraclostrobin	82.3		P	40 - 150
Triclopyr	53.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150
AMPA	98.7		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	57.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360522

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P360980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070603	Barium	101	99.9	P/P	80 - 120
2070603	Calcium	102		P	80 - 120
2070603	Iron	105	107	P/P	80 - 120
2070603	Magnesium	100		P	80 - 120
2070603	Potassium	105	105	P/P	80 - 120
2070603	Sodium	101		P	80 - 120
2070603	Zinc	99.4	98.0	P/P	80 - 120
2070729	Barium	99.2		P	80 - 120
2070729	Calcium	102		P	80 - 120
2070729	Iron	105		P	80 - 120
2070729	Magnesium	102		P	80 - 120
2070729	Potassium	107		P	80 - 120
2070729	Sodium	102		P	80 - 120
2070729	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070603	Aluminum	92.1	91.9	P/P	80 - 120
2070603	Antimony	93.2	93.1	P/P	80 - 120
2070603	Arsenic	95.8	96.1	P/P	80 - 120
2070603	Boron	93.7	93.0	P/P	80 - 120
2070603	Cadmium	94.5	94.9	P/P	80 - 120
2070603	Chromium	89.1	88.9	P/P	80 - 120
2070603	Copper	97.1	95.8	P/P	80 - 120
2070603	Lead	92.6	92.6	P/P	80 - 120
2070603	Nickel	95.9	95.1	P/P	80 - 120
2070603	Selenium	92.7	92.5	P/P	80 - 120
2070603	Silver	99.3	100	P/P	80 - 120
2070603	Thallium	96.7	97.6	P/P	80 - 120
2070729	Aluminum	90.6		P	80 - 120
2070729	Antimony	93.0		P	80 - 120
2070729	Arsenic	97.3		P	80 - 120
2070729	Boron	94.1		P	80 - 120
2070729	Cadmium	93.8		P	80 - 120
2070729	Chromium	88.2		P	80 - 120
2070729	Copper	94.5		P	80 - 120
2070729	Lead	91.6		P	80 - 120
2070729	Nickel	94.6		P	80 - 120
2070729	Selenium	95.4		P	80 - 120
2070729	Silver	98.8		P	80 - 120
2070729	Thallium	95.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070482	Chloride	104		P	90 - 110
2070850	Chloride	105		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070482	Sulfate	105		P	90 - 110
2070850	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	94.8	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070484	NO2NO3-N	97.3	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070529	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070488	O-Phosphate-P	93.3	93.4	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068903	Acetochlor	75.7	89.8	P/P	63 - 129
2068903	Alachlor	75.1	88.3	P/P	65 - 127
2068903	Ametryn	90.6	110	P/P	40 - 164
2068903	Atrazine Desethyl	65.0	72.4	P/P	14 - 157
2068903	Azinphos Methyl	83.8	95.7	P/P	49 - 180
2068903	Bromacil	73.4	79.6	P/P	48 - 130
2068903	Butylate	39.4	27.8	P/P	10 - 94.0
2068903	Chlorpyrifos Ethyl	79.7	95.5	P/P	58 - 123
2068903	Chlorpyrifos Methyl	74.5	87.3	P/P	58 - 125
2068903	Cyanazine	111	129	P/P	24 - 253
2068903	Demeton	60.3	56.4	P/P	25 - 149
2068903	Diazinon	75.9	90.0	P/P	59 - 144
2068903	Dimethenamid	74.9	87.9	P/P	60 - 130
2068903	Disulfoton	71.4	84.1	P/P	54 - 132
2068903	Dithiopyr	75.0	88.6	P/P	60 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P360553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068903	EPTC	46.2	30.7	P/P	10 - 92.0
2068903	Ethion	80.6	101	P/P	30 - 148
2068903	Ethoprop	76.3	90.1	P/P	50 - 130
2068903	Fenamiphos	98.0	112	P/P	49 - 142
2068903	Fipronil Desulfinyl	79.3	81.3	P/P	60 - 130
2068903	Fonofos	74.9	90.5	P/P	55 - 129
2068903	Hexazinone	91.9	107	P/P	56 - 141
2068903	Malathion	79.7	93.0	P/P	56 - 135
2068903	Metolachlor	76.1	87.8	P/P	51 - 140
2068903	Metribuzin	175	207	P/P	45 - 254
2068903	Mevinphos	72.1	79.7	P/P	33 - 131
2068903	Molinate	56.0	55.9	P/P	14 - 98.0
2068903	Norflurazon	74.7	79.9	P/P	34 - 136
2068903	Parathion Ethyl	77.4	89.2	P/P	66 - 118
2068903	Parathion Methyl	78.8	93.3	P/P	64 - 136
2068903	Pendimethalin	93.5	112	P/P	59 - 144
2068903	Phorate	71.9	78.6	P/P	42 - 130
2068903	Prodiamine	94.8	98.9	P/P	60 - 130
2068903	Prometon	78.1	91.9	P/P	59 - 134
2068903	Prometryn	68.6	79.1	P/P	54 - 135
2068903	Simazine	86.0	95.9	P/P	53 - 156
2068903	Tebuconazole	52.6	59.1	P/P	30 - 100
2068903	Terbufos	73.3	87.4	P/P	57 - 131
2068903	Terbutylazine	78.1	91.7	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P360490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069849	2,4-D	94.4	96.9	P/P	40 - 150
2069849	Acetaminophen	103	90.8	P/P	30 - 150
2069849	Bentazon	78.8	75.9	P/P	30 - 150
2069849	Carbamazepine	102	92.4	P/P	40 - 150
2069849	Diuron	92.1	86.4	P/P	40 - 150
2069849	Fenuron	127	128	P/P	40 - 150
2069849	Fluridone	135	107	P/P	40 - 150
2069849	Hydrocodone	94.9	95.5	P/P	40 - 150
2069849	Ibuprofen	78.9	64.6	P/P	40 - 150
2069849	Imazapyr	65.2	55.8	P/P	40 - 150
2069849	Imidacloprid	183	169	F/F	40 - 150
2069849	Linuron	87.4	86.8	P/P	40 - 150
2069849	MCP	124	110	P/P	40 - 150
2069849	Naproxen	75.2	85.0	P/P	40 - 150
2069849	Primidone	114	102	P/P	40 - 150
2069849	Pyraclostrobin	79.7	67.5	P/P	40 - 150
2069849	Triclopyr	85.9	70.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070585	Acesulfame K	191	196	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070585	AMPA	92.5	90.7	P/P	40 - 150
2070585	Endothall	147	150	P/F	40 - 150
2070585	Glufosinate	65.9	65.0	P/P	40 - 150
2070585	Glyphosate	84.2	86.3	P/P	40 - 140
2070585	Sucralose	63.3	58.7	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070482	Fluoride	96.6	96.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070485	Organic Carbon	96.4	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070568	Turbidity	3.17	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070603	Barium	0.822	Spike	P	0 - 20
2070603	Calcium	0.514	Spike	P	0 - 20
2070603	Iron	1.64	Spike	P	0 - 20
2070603	Magnesium	0.204	Spike	P	0 - 20
2070603	Potassium	0.122	Spike	P	0 - 20
2070603	Sodium	0.926	Spike	P	0 - 20
2070603	Zinc	1.31	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070603	Aluminum	0.224	Spike	P	0 - 20
2070603	Antimony	0.0840	Spike	P	0 - 20
2070603	Arsenic	0.220	Spike	P	0 - 20
2070603	Boron	0.691	Spike	P	0 - 20
2070603	Cadmium	0.450	Spike	P	0 - 20
2070603	Chromium	0.286	Spike	P	0 - 20
2070603	Copper	1.06	Spike	P	0 - 20
2070603	Lead	0.0137	Spike	P	0 - 20
2070603	Nickel	0.913	Spike	P	0 - 20
2070603	Selenium	0.256	Spike	P	0 - 20
2070603	Silver	0.778	Spike	P	0 - 20
2070603	Thallium	0.950	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070482	Chloride	0.291	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070482	Sulfate	0.229	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P361065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Ammonia-N	0.565	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070569	Kjeldahl Nitrogen	6.55	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070484	NO2NO3-N	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070529	Total-P	0.206	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070488	O-Phosphate-P	0.107	Spike	P	0 - 20

Reference Method: EPA 8270D
 Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068903	Acetochlor	17.1	Spike	P	0 - 30
2068903	Alachlor	16.2	Spike	P	0 - 30
2068903	Ametryn	19.5	Spike	P	0 - 30
2068903	Atrazine	12.9	Spike	P	0 - 30
2068903	Atrazine Desethyl	9.24	Spike	P	0 - 30
2068903	Azinphos Methyl	13.3	Spike	P	0 - 30
2068903	Bromacil	8.08	Spike	P	0 - 30
2068903	Butylate	34.5	Spike	F	0 - 30
2068903	Chlorpyrifos Ethyl	18.1	Spike	P	0 - 30
2068903	Chlorpyrifos Methyl	15.8	Spike	P	0 - 30
2068903	Cyanazine	15.0	Spike	P	0 - 30
2068903	Demeton	6.65	Spike	P	0 - 30
2068903	Diazinon	17.1	Spike	P	0 - 30
2068903	Dimethenamid	15.9	Spike	P	0 - 30
2068903	Disulfoton	16.4	Spike	P	0 - 30
2068903	Dithiopyr	10.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068903	EPTC	40.2	Spike	F	0 - 30
2068903	Ethion	22.8	Spike	P	0 - 30
2068903	Ethoprop	16.6	Spike	P	0 - 30
2068903	Fenamiphos	13.1	Spike	P	0 - 30
2068903	Fipronil	0.967	Spike	P	0 - 30
2068903	Fipronil Desulfinyl	1.81	Spike	P	0 - 30
2068903	Fipronil Sulfide	8.94	Spike	P	0 - 30
2068903	Fipronil Sulfone	12.5	Spike	P	0 - 30
2068903	Fonofos	18.9	Spike	P	0 - 30
2068903	Hexazinone	14.1	Spike	P	0 - 30
2068903	Malathion	15.4	Spike	P	0 - 30
2068903	Metaxyl	17.0	Spike	P	0 - 30
2068903	Metolachlor	14.3	Spike	P	0 - 30
2068903	Metribuzin	2.85	Spike	P	0 - 30
2068903	Mevinphos	10.0	Spike	P	0 - 30
2068903	Molinate	0.305	Spike	P	0 - 30
2068903	Norflurazon	6.64	Spike	P	0 - 30
2068903	Oxadiazon	7.73	Spike	P	0 - 30
2068903	Parathion Ethyl	14.1	Spike	P	0 - 30
2068903	Parathion Methyl	16.9	Spike	P	0 - 30
2068903	Pendimethalin	17.9	Spike	P	0 - 30
2068903	Phorate	8.87	Spike	P	0 - 30
2068903	Prodiamine	3.94	Spike	P	0 - 30
2068903	Prometon	16.3	Spike	P	0 - 30
2068903	Prometryn	14.3	Spike	P	0 - 30
2068903	Simazine	10.8	Spike	P	0 - 30
2068903	Tebuconazole	11.6	Spike	P	0 - 30
2068903	Terbufos	17.5	Spike	P	0 - 30
2068903	Terbutylazine	16.0	Spike	P	0 - 30
LFB	Acetochlor	20.6	LCS	P	0 - 30
LFB	Alachlor	21.2	LCS	P	0 - 30
LFB	Ametryn	20.0	LCS	P	0 - 30
LFB	Atrazine	26.1	LCS	P	0 - 30
LFB	Atrazine Desethyl	18.3	LCS	P	0 - 30
LFB	Azinphos Methyl	18.9	LCS	P	0 - 30
LFB	Bromacil	27.4	LCS	P	0 - 30
LFB	Butylate	14.9	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	13.3	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	16.0	LCS	P	0 - 30
LFB	Cyanazine	11.9	LCS	P	0 - 30
LFB	Demeton	4.90	LCS	P	0 - 30
LFB	Diazinon	23.3	LCS	P	0 - 30
LFB	Dimethenamid	19.3	LCS	P	0 - 30
LFB	Disulfoton	17.8	LCS	P	0 - 30
LFB	Dithiopyr	23.8	LCS	P	0 - 30
LFB	EPTC	14.3	LCS	P	0 - 30
LFB	Ethion	19.7	LCS	P	0 - 30
LFB	Ethoprop	9.74	LCS	P	0 - 30
LFB	Fenamiphos	18.0	LCS	P	0 - 30
LFB	Fipronil	25.7	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	24.8	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	15.3	LCS	P	0 - 30
LFB	Fipronil Sulfone	21.1	LCS	P	0 - 30
LFB	Fonofos	18.8	LCS	P	0 - 30
LFB	Hexazinone	21.4	LCS	P	0 - 30
LFB	Malathion	18.9	LCS	P	0 - 30
LFB	Metalaxyl	21.1	LCS	P	0 - 30
LFB	Metolachlor	20.0	LCS	P	0 - 30
LFB	Metribuzin	6.58	LCS	P	0 - 30
LFB	Mevinphos	25.4	LCS	P	0 - 30
LFB	Molinate	13.4	LCS	P	0 - 30
LFB	Norflurazon	21.5	LCS	P	0 - 30
LFB	Oxadiazon	21.8	LCS	P	0 - 30
LFB	Parathion Ethyl	15.6	LCS	P	0 - 30
LFB	Parathion Methyl	17.1	LCS	P	0 - 30
LFB	Pendimethalin	9.35	LCS	P	0 - 30
LFB	Phorate	15.5	LCS	P	0 - 30
LFB	Prodiamine	5.77	LCS	P	0 - 30
LFB	Prometon	20.4	LCS	P	0 - 30
LFB	Prometryn	21.4	LCS	P	0 - 30
LFB	Simazine	25.1	LCS	P	0 - 30
LFB	Tebuconazole	31.6	LCS	F	0 - 30
LFB	Terbufos	17.2	LCS	P	0 - 30
LFB	Terbuthylazine	18.7	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	2,4-D	2.59	Spike	P	0 - 30
2069849	Acetaminophen	12.8	Spike	P	0 - 30
2069849	Bentazon	3.26	Spike	P	0 - 30
2069849	Carbamazepine	9.88	Spike	P	0 - 30
2069849	Diuron	6.16	Spike	P	0 - 30
2069849	Fenuron	0.378	Spike	P	0 - 30
2069849	Fluridone	19.7	Spike	P	0 - 30
2069849	Hydrocodone	0.577	Spike	P	0 - 30
2069849	Ibuprofen	19.9	Spike	P	0 - 30
2069849	Imazapyr	10.1	Spike	P	0 - 30
2069849	Imidacloprid	6.91	Spike	P	0 - 30
2069849	Linuron	0.770	Spike	P	0 - 30
2069849	MCP	11.7	Spike	P	0 - 30
2069849	Naproxen	12.1	Spike	P	0 - 30
2069849	Primidone	11.2	Spike	P	0 - 30
2069849	Pyraclostrobin	16.7	Spike	P	0 - 30
2069849	Triclopyr	19.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P360627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070585	Acesulfame K	2.22	Spike	P	0 - 30
2070585	AMPA	1.95	Spike	P	0 - 30
2070585	Endothall	2.28	Spike	P	0 - 30
2070585	Glufosinate	1.42	Spike	P	0 - 30
2070585	Glyphosate	2.48	Spike	P	0 - 30
2070585	Sucralose	7.04	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P360522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070481	Color (true)	0.316	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070482	Total Alkalinity	3.01	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P361034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070407	TDS	4.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070482	Fluoride	0.514	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070485	Organic Carbon	3.17	Spike	P	0 - 20

* 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: 2070585
Field Sample ID: 20030855

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	74.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.6	P	30 - 160
EPA 8321B	Diuron-d6	61.7	P	30 - 160
EPA 8321B	Endothall-d6	137	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.3	P	30 - 160
EPA 8321B	Primidone-d5	70.9	P	30 - 160
EPA 8321B	Sucralose-d6	70.4	P	30 - 160

Lab Sample ID: 2070587
Field Sample ID: 20030855

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	74.9	P	68 - 130
EPA 8270D	Terbufos-d10	75.7	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A90043

Included Lab Sample IDs: 2070576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90044

Included Lab Sample IDs: 2070576

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90045

Included Lab Sample IDs: 2070578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.6	97.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90071

Included Lab Sample IDs: 2070576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	99.7	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90128

Included Lab Sample IDs: 2070577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90140

Included Lab Sample IDs: 2070586

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	99.5	101	P/P	90 - 110
Iron	100	101	P/P	90 - 110
Magnesium	99.6	100	P/P	90 - 110
Potassium	99.2	99.3	P/P	90 - 110
Sodium	101	100	P/P	90 - 110
Zinc	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90161

Included Lab Sample IDs: 2070585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	118	95.1	P/P	60 - 160
Glufosinate	94.5	92.6	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A90161
Included Lab Sample IDs: 2070585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	87.2	80.1	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90170
Included Lab Sample IDs: 2070586

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.9	97.6	P/P	90 - 110
Antimony	93.9	93.7	P/P	90 - 110
Arsenic	96.3	96.2	P/P	90 - 110
Boron	95.0	95.4	P/P	90 - 110
Cadmium	95.1	95.1	P/P	90 - 110
Chromium	95.4	93.8	P/P	90 - 110
Lead	94.2	93.6	P/P	90 - 110
Selenium	91.9	94.4	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90184
Included Lab Sample IDs: 2070577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90203
Included Lab Sample IDs: 2070585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	87.4	117	P/P	60 - 160
Endothall	112	107	P/P	60 - 160
Sucralose	68.0	97.6	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A90207
Included Lab Sample IDs: 2070586

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.3	93.4	P/P	90 - 110
Nickel	93.7	94.0	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A90218
Included Lab Sample IDs: 2070576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97
 Run ID: A90218
 Included Lab Sample IDs: 2070576

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

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A90221
 Included Lab Sample IDs: 2070577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	97.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A90224
 Included Lab Sample IDs: 2070586

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	94.0	94.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Run ID: A90239
 Included Lab Sample IDs: 2070577

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

Reference Method: EPA 8270D
 Run ID: A90253
 Included Lab Sample IDs: 2070587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	108		P	80 - 120
Ametryn	104		P	80 - 120
Atrazine	101		P	80 - 120
Atrazine Desethyl	92.9		P	80 - 120
Azinphos Methyl	100		P	80 - 120
Bromacil	103		P	80 - 120
Butylate	95.1		P	80 - 120
Chlorpyrifos Ethyl	102		P	80 - 120
Chlorpyrifos Methyl	98.2		P	80 - 120
Cyanazine	91.6		P	80 - 120
Demeton	96.8		P	80 - 120
Diazinon	99.2		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	95.5		P	80 - 120
Dithiopyr	104		P	80 - 120
EPTC	99.4		P	80 - 120
Ethion	98.8		P	80 - 120
Ethoprop	96.0		P	80 - 120
Fenamiphos	96.9		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	102		P	80 - 120
Fipronil Sulfide	95.7		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A90253

Included Lab Sample IDs: 2070587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fipronil Sulfone	94.8		P	80 - 120
Fonofos	95.3		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	96.5		P	80 - 120
Metalaxyl	106		P	80 - 120
Metolachlor	109		P	80 - 120
Metribuzin	87.2		P	80 - 120
Mevinphos	98.7		P	80 - 120
Molinate	97.5		P	80 - 120
Norflurazon	101		P	80 - 120
Oxadiazon	106		P	80 - 120
Parathion Ethyl	96.5		P	80 - 120
Parathion Methyl	96.7		P	80 - 120
Pendimethalin	99.4		P	80 - 120
Phorate	92.3		P	80 - 120
Prodiamine	104		P	80 - 120
Prometon	103		P	80 - 120
Prometryn	103		P	80 - 120
Simazine	97.9		P	80 - 120
Tebuconazole	98.0		P	80 - 120
Terbufos	95.3		P	80 - 120
Terbutylazine	99.5		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90256

Included Lab Sample IDs: 2070577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2070585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	98.8	P/P	50 - 150
Acetaminophen	122	111	P/P	60 - 160
Bentazon	89.8	87.5	P/P	50 - 160
Carbamazepine	100	109	P/P	60 - 150
Diuron	114	108	P/P	60 - 150
Fenuron	113	110	P/P	60 - 150
Fluridone	66.0	104	P/P	60 - 160
Hydrocodone	121	115	P/P	60 - 150
Ibuprofen	92.7	109	P/P	50 - 160
Imazapyr	100	97.6	P/P	50 - 150
Imidacloprid	105	113	P/P	60 - 150
Linuron	99.7	94.0	P/P	60 - 150
MCPP	91.5	87.7	P/P	50 - 150
Naproxen	106	89.5	P/P	50 - 160
Primidone	138	92.5	P/P	60 - 150
Pyraclostrobin	82.5	118	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2070585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Triclopyr	96.1	95.4	P/P	50 - 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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.17	
EPA 200.7 Rev. 4.4	Barium	101		101	99.9	99.2			0.822
	Calcium	102		102	102				0.514
	Iron	106		105	107	105			1.64
	Magnesium	102		100	102				0.204
	Potassium	105		105	105	107			0.122
	Sodium	101		101	102				0.926
	Zinc	99.6		99.4	98.0	101			1.31
EPA 200.8 Rev. 5.4	Aluminum	91.9		92.1	91.9	90.6			0.224
	Antimony	93.6		93.2	93.1	93.0			0.0840
	Arsenic	95.9		95.8	96.1	97.3			0.220
	Boron	92.7		93.7	93.0	94.1			0.691
	Cadmium	93.0		94.5	94.9	93.8			0.450
	Chromium	89.2		89.1	88.9	88.2			0.286
	Copper	97.2		97.1	95.8	94.5			1.06
	Lead	91.1		92.6	92.6	91.6			0.0137
	Nickel	101		95.9	95.1	94.6			0.913
	Selenium	93.5		92.7	92.5	95.4			0.256
	Silver	98.9		99.3	100	98.8			0.778
	Thallium	93.4		96.7	97.6	95.0			0.950
EPA 300.0 Rev. 2.1	Chloride	107		104	105			0.291	
	Sulfate	108		105	107			0.229	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0		100	101				0.565
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		94.8	106				6.55
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		97.3	98.8				1.43
EPA 365.1 Rev. 2.0	Total-P	98.5		101	101				0.206
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5		93.3	93.4				0.107
EPA 8270D	Acetochlor	75.7	93.2	75.7	89.8		20.6		17.1
	Alachlor	74.5	92.1	75.1	88.3		21.2		16.2
	Ametryn	73.9	90.3	90.6	110		20.0		19.5
	Atrazine	83.0	108				26.1		12.9
	Atrazine Desethyl	84.0	101	65.0	72.4		18.3		9.24
	Azinphos Methyl	104	125	83.8	95.7		18.9		13.3
	Bromacil	72.8	95.9	73.4	79.6		27.4		8.08
	Butylate	62.2	72.2	39.4	27.8		14.9		34.5
	Chlorpyrifos Ethyl	86.3	98.7	79.7	95.5		13.3		18.1
	Chlorpyrifos Methyl	85.5	100	74.5	87.3		16.0		15.8
	Cyanazine	210	237	111	129		11.9		15.0
	Demeton	69.6	73.1	60.3	56.4		4.90		6.65
	Diazinon	79.1	99.9	75.9	90.0		23.3		17.1
	Dimethenamid	72.6	88.1	74.9	87.9		19.3		15.9
	Disulfoton	85.5	102	71.4	84.1		17.8		16.4
	Dithiopyr	75.9	96.4	75.0	88.6		23.8		10.4
	EPTC	63.7	73.5	46.2	30.7		14.3		40.2
	Ethion	65.1	79.3	80.6	101		19.7		22.8
	Ethoprop	87.0	95.9	76.3	90.1		9.74		16.6
	Fenamiphos	81.5	97.6	98.0	112		18.0		13.1
	Fipronil	70.5	91.3				25.7		0.967
	Fipronil Desulfinyl	68.4	87.9	79.3	81.3		24.8		1.81
	Fipronil Sulfide	73.9	86.1				15.3		8.94
	Fipronil Sulfone	68.0	84.1				21.1		12.5
	Fonofos	86.4	104	74.9	90.5		18.8		18.9
	Hexazinone	83.5	104	91.9	107		21.4		14.1
	Malathion	79.8	96.4	79.7	93.0		18.9		15.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8270D	Metalaxyl	76.9	95.0			21.1		17.0
	Metolachlor	75.2	92.0	76.1	87.8	20.0		14.3
	Metribuzin	192	205	175	207	6.58		2.85
	Mevinphos	75.0	96.7	72.1	79.7	25.4		10.0
	Molinate	70.1	80.2	56.0	55.9	13.4		0.305
	Norflurazon	78.1	97.0	74.7	79.9	21.5		6.64
	Oxadiazon	77.0	95.8			21.8		7.73
	Parathion Ethyl	81.1	94.8	77.4	89.2	15.6		14.1
	Parathion Methyl	85.5	101	78.8	93.3	17.1		16.9
	Pendimethalin	88.9	97.7	93.5	112	9.35		17.9
	Phorate	80.3	93.8	71.9	78.6	15.5		8.87
	Prodiamine	41.8	44.3	94.8	98.9	5.77		3.94
	Prometon	66.2	81.2	78.1	91.9	20.4		16.3
	Prometryn	68.4	84.7	68.6	79.1	21.4		14.3
	Simazine	85.8	110	86.0	95.9	25.1		10.8
	Tebuconazole	32.5	44.6	52.6	59.1	31.6		11.6
	Terbufos	82.3	97.8	73.3	87.4	17.2		17.5
	Terbuthylazine	81.9	98.8	78.1	91.7	18.7		16.0
EPA 8321B	2,4-D	75.9		94.4	96.9			2.59
	Acesulfame K	98.1		191	196			2.22
	Acetaminophen	111		103	90.8			12.8
	AMPA	98.7		92.5	90.7			1.95
	Bentazon	129		78.8	75.9			3.26
	Carbamazepine	111		102	92.4			9.88
	Diuron	120		92.1	86.4			6.16
	Endothall	112		147	150			2.28
	Fenuron	127		127	128			0.378
	Fluridone	127		135	107			19.7
	Glufosinate	104		65.9	65.0			1.42
	Glyphosate	108		84.2	86.3			2.48
	Hydrocodone	98.2		94.9	95.5			0.577
	Ibuprofen	76.0		78.9	64.6			19.9
	Imazapyr	99.5		65.2	55.8			10.1
	Imidacloprid	102		183	169			6.91
	Linuron	103		87.4	86.8			0.770
	MCPP	82.2		124	110			11.7
	Naproxen	87.3		75.2	85.0			12.1
	Primidone	119		114	102			11.2
SM 2120 B	Color (true)	102					0.316	
	Total Alkalinity	101					3.01	
SM 2540 C-97	TDS						4.06	
SM 4500 F-C-97	Fluoride	98.2		96.6	96.0			0.514
SM 5310 B-00	Organic Carbon	100		96.4	100			3.17

Reference Method Descriptions

Method / DoH Cert #
EPA 180.1 Rev. 2.0 /
E31780

Description
Turbidity in aqueous matrices

Associated Samples
2070576

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2070586
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2070586
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2070576
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2070576
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2070577
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2070577
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2070577
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2070577
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2070578
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2070587
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2070585
SM 2120 B / E31780	True Color measured at 450 nm	2070576
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2070576
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2070576
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2070576
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2070576
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2070577

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	03/15/2019			03/15/2019 15:25	Adrian Shelby	2070576
EPA 200.7 Rev. 4.4	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/20/2019 21:43	Vijayalakshmi Reddy	2070586
EPA 200.8 Rev. 5.4	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 02:14	Robert K Palmer	2070586
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/22/2019 19:04	Robert K Palmer	2070586
	03/15/2019	03/19/2019 18:00	Elliott D. Healy	03/25/2019 18:48	Robert K Palmer	2070586
EPA 300.0 Rev. 2.1	03/15/2019			03/22/2019 13:48	Lipi Saha	2070576
EPA 350.1 Rev. 2.0	03/15/2019			03/26/2019 13:38	Julia Storbeck	2070577
EPA 351.2 Rev. 2.0	03/15/2019	03/21/2019 16:30	Adrian Shelby	03/22/2019 14:37	Joseph Suarez	2070577
EPA 353.2 Rev. 2.0	03/15/2019			03/20/2019 13:15	Lauren Lees	2070577
EPA 365.1 Rev. 2.0	03/15/2019	03/25/2019 14:50	Adrian Shelby	03/26/2019 11:46	Beverly Y. Sanders	2070577
EPA 365.1 Rev. 2.0 dissolved	03/15/2019			03/15/2019 16:05	Jhamieka S. Greenwood	2070578
EPA 8270D	03/15/2019	03/18/2019 09:08	Dinesh Mishra	03/20/2019 20:58	Vandana T. Nagar	2070587
EPA 8321B	03/15/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 14:02	Juyoung Kim	2070585
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/20/2019 13:01	Juyoung Kim	2070585
	03/15/2019	03/20/2019 12:00	Hoor Shaik	03/21/2019 01:23	Juyoung Kim	2070585
SM 2120 B	03/15/2019			03/15/2019 16:30	Blanca Fach	2070576
SM 2320 B-97	03/15/2019			03/25/2019 10:45	Dale L. Simmons	2070576
SM 2540 C-97	03/15/2019			03/20/2019 15:26	Yijie Li	2070576
SM 2540 D-97	03/15/2019			03/20/2019 15:26	Yijie Li	2070576
SM 4500 F-C-97	03/15/2019			03/25/2019 10:45	Dale L. Simmons	2070576
SM 5310 B-00	03/15/2019			03/21/2019 21:34	Julia Storbeck	2070577