

Chemical Analysis Report

NW-DIST-2018-12-11-01

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

Event Description: **Bayou Chico BMAP Source**
Request ID: **RQ-2018-11-12-26**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 308
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Colin Wright, Program Administrator

Date Certified: 27-DEC-2018 10:51

A handwritten signature in black ink, reading "Colin Wright", is displayed on a light gray rectangular background.

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: BAYOU CHICO AT W ST. BRIDGE

Collection Date/Time: 12/10/2018 14:20

Field ID: 33020JF1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047691	EPA 180.1 Rev. 2.0	Turbidity	4.9		NTU	P355974	
2047693	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P356260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P356090	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P356134	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P356175	
2047711	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	8.0E-04	U	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.046		ug/L	P355712	
		Diuron	0.0025	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0045	I	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.0087	I	ug/L	P355712	
		Carbamazepine**	0.0028	I	ug/L	P355712	
		Fluridone**	4.0E-04	U	ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.38		ug/L	P355853	
		Acesulfame K**	0.13	I	ug/L	P355853	

Sample Location: BAYOU CHICO AT NAVY BLVD BRIDGE

Collection Date/Time: 12/10/2018 13:55

Field ID: 3302JE20

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047692	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P355974	
2047694	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P355972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P356248	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.45		mg N/L	P356274	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P356179	
2047712	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	9.5E-04	I	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0098		ug/L	P355712	
		Diuron	0.0061	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.0071	I	ug/L	P355712	
		Carbamazepine**	0.0031	I	ug/L	P355712	
		Fluridone**	4.0E-04	U	ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.059	J	ug/L	P355853	SUR
		Acesulfame K**	0.10	U	ug/L	P355853	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Results confirmed in re-extraction.

Sample Location: JACKSON CREEK AT OLD CORRY ROAD

Collection Date/Time: 12/10/2018 11:45

Field ID: 33020221

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047695	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P355974	
2047697	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P356260	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P356090	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.3		mg N/L	P356134	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P356175	
2047713	EPA 8321B	2,4-D	0.0020	U	ug/L	P355712	
		Bentazon	0.0011	I	ug/L	P355712	
		MCP	0.0020	U	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.025		ug/L	P355712	
		Diuron	0.0023	I	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.019	I	ug/L	P355712	
		Imazapyr**	0.0040	U	ug/L	P355712	
		Carbamazepine**	0.022		ug/L	P355712	
		Fluridone**	4.0E-04	U	ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	1.2		ug/L	P355853	
		Acesulfame K**	0.10	U	ug/L	P355853	

**Sample Location: JONES CREEK UPSTREAM OF NEW
WARRINGTON RD**

Collection Date/Time: 12/10/2018 12:30

Field ID: 33020117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047696	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P355975	
2047698	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P356261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P356090	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.087		mg N/L	P356134	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P356176	
2047714	EPA 8321B	2,4-D	0.0020	I	ug/L	P355712	
		Bentazon	8.0E-04	U	ug/L	P355712	
		MCP	0.0021	I	ug/L	P355712	
		Triclopyr**	0.0040	U	ug/L	P355712	
		Imidacloprid	0.0061	I	ug/L	P355712	
		Diuron	0.0020	U	ug/L	P355712	
		Pyraclostrobin**	0.0020	U	ug/L	P355712	
		Primidone**	0.0040	U	ug/L	P355712	
		Linuron	0.0040	U	ug/L	P355712	
		Acetaminophen**	0.0080	U	ug/L	P355712	
		Fenuron	0.016	U	ug/L	P355712	
		Imazapyr**	0.0069	I	ug/L	P355712	
		Carbamazepine**	8.0E-04	U	ug/L	P355712	
		Fluridone**	4.0E-04	U	ug/L	P355712	
		Hydrocodone**	0.0020	U	ug/L	P355712	
		Naproxen**	0.0080	U	ug/L	P355712	
		Ibuprofen**	0.020	U	ug/L	P355712	
		Sucralose**	0.30		ug/L	P355853	
		Acesulfame K**	0.16	I	ug/L	P355853	

Sample Location: PENSACOLA BAY AT SANDERS BEACH

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

Field ID: 33020J10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047699	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P355975	
2047700	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P356255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P356092	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P356274	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P356179	

Sample Location: BAYOU CHICO AT MANDALAY DRIVE

Collection Date/Time: 12/10/2018 10:40

Field ID: 33020JD4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047701	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P355975	
2047703	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P356255	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P356092	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P356274	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P356179	

Sample Location: JONES CREEK AT OLD CORRY ROAD

Collection Date/Time: 12/10/2018 11:10

Field ID: 33020118

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047702	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P355975	
2047704	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P356261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P356090	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P356135	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P356176	

Sample Location: JACKSON CREEK AT NEW WARRINGTON ROAD

Collection Date/Time: 12/10/2018 12:05

Field ID: 33020222

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2047705	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P355975	
2047706	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P356261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P356090	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.2		mg N/L	P356135	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P356176	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355974

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355975

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356260

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356261

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356090

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356134

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356135

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356175

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356176

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

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

Reference Method: EPA 8321B
Batch ID: P355712

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	4.0E-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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355712

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355853

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356261

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356090

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

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: P356134

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356175

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356176

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

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

Reference Method: EPA 8321B
Batch ID: P355712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.2		P	40 - 150
Acetaminophen	92.6		P	30 - 150
Bentazon	74.7		P	30 - 150
Carbamazepine	80.8		P	40 - 150
Diuron	81.8		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	64.2		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	78.5		P	40 - 160
Linuron	76.1		P	40 - 150
MCPP	95.0		P	40 - 150
Naproxen	77.5		P	40 - 150
Primidone	86.2		P	40 - 150
Pyraclostrobin	52.3		P	40 - 150
Triclopyr	58.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	118		P	40 - 150
Sucralose	99.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046867	Ammonia-N	101	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047700	Ammonia-N	97.1	99.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047653	Ammonia-N	97.4	97.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047698	Ammonia-N	97.1	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047706	Kjeldahl Nitrogen	98.1	90.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	104	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2048084	Kjeldahl Nitrogen	108	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356134

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047630	NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047704	NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P356274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046750	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P356175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047693	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P356176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047751	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P356179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2047694	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P355712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	2,4-D	68.5	75.9	P/P	40 - 150
2046826	Acetaminophen	102	125	P/P	30 - 150
2046826	Bentazon	42.1	33.6	P/P	30 - 150
2046826	Carbamazepine	76.6	72.1	P/P	40 - 150
2046826	Diuron	62.0	62.4	P/P	40 - 150
2046826	Fenuron	92.2	104	P/P	40 - 150
2046826	Fluridone	104	108	P/P	40 - 150
2046826	Hydrocodone	100	103	P/P	40 - 150
2046826	Ibuprofen	54.4	61.9	P/P	40 - 150
2046826	Imazapyr	109	127	P/P	40 - 150
2046826	Imidacloprid	129	134	P/P	40 - 160
2046826	Linuron	59.3	61.2	P/P	40 - 150
2046826	MCPD	83.5	92.5	P/P	40 - 150
2046826	Naproxen	56.8	69.1	P/P	40 - 150
2046826	Primidone	96.9	91.6	P/P	40 - 150
2046826	Pyraclostrobin	51.2	59.3	P/P	40 - 150
2046826	Triclopyr	44.5	49.9	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P355853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2046826	Acesulfame K	101	113	P/P	40 - 150
2046826	Sucralose	95.3	106	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047651	Turbidity	3.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047707	Turbidity	2.82	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046867	Ammonia-N	4.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047700	Ammonia-N	1.49	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047653	Ammonia-N	0.486	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047698	Ammonia-N	0.317	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047706	Kjeldahl Nitrogen	7.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047860	Kjeldahl Nitrogen	4.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2048084	Kjeldahl Nitrogen	9.00	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356134

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047630	NO2NO3-N	0.420	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047704	NO2NO3-N	0.327	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046750	NO2NO3-N	0.321	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047693	Total-P	0.306	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047751	Total-P	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2047694	Total-P	0.632	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P355712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	2,4-D	7.32	Spike	P	0 - 30
2046826	Acetaminophen	15.5	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	Bentazon	13.6	Spike	P	0 - 30
2046826	Carbamazepine	4.42	Spike	P	0 - 30
2046826	Diuron	0.455	Spike	P	0 - 30
2046826	Fenuron	11.7	Spike	P	0 - 30
2046826	Fluridone	4.37	Spike	P	0 - 30
2046826	Hydrocodone	2.63	Spike	P	0 - 30
2046826	Ibuprofen	12.9	Spike	P	0 - 30
2046826	Imazapyr	7.43	Spike	P	0 - 30
2046826	Imidacloprid	3.24	Spike	P	0 - 30
2046826	Linuron	3.20	Spike	P	0 - 30
2046826	MCP	9.16	Spike	P	0 - 30
2046826	Naproxen	19.6	Spike	P	0 - 30
2046826	Primidone	5.64	Spike	P	0 - 30
2046826	Pyraclostrobin	14.6	Spike	P	0 - 30
2046826	Triclopyr	11.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2046826	Acesulfame K	9.46	Spike	P	0 - 30
2046826	Sucralose	7.76	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2047711
Field Sample ID: 33020JF1

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	118	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.9	P	30 - 160
EPA 8321B	Diuron-d6	70.2	P	30 - 160
EPA 8321B	Endothall-d6	120	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.1	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	82.6	P	40 - 160

Lab Sample ID: 2047712
Field Sample ID: 3302JE20

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	72.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	113	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.7	P	30 - 160
EPA 8321B	Diuron-d6	82.7	P	30 - 160
EPA 8321B	Endothall-d6	88.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	68.7	P	30 - 160
EPA 8321B	Primidone-d5	94.2	P	30 - 160
EPA 8321B	Sucralose-d6	13.0	F	40 - 160

Lab Sample ID: 2047713
Field Sample ID: 33020221

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	49.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.6	P	30 - 160
EPA 8321B	Diuron-d6	68.0	P	30 - 160
EPA 8321B	Endothall-d6	118	P	40 - 160
EPA 8321B	Ibuprofen-d3	57.9	P	30 - 160
EPA 8321B	Primidone-d5	87.5	P	30 - 160
EPA 8321B	Sucralose-d6	69.2	P	40 - 160

Lab Sample ID: 2047714
Field Sample ID: 33020117

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.7	P	30 - 160
EPA 8321B	Diuron-d6	61.3	P	30 - 160
EPA 8321B	Endothall-d6	122	P	40 - 160
EPA 8321B	Ibuprofen-d3	67.9	P	30 - 160
EPA 8321B	Primidone-d5	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88285

Included Lab Sample IDs: 2047694

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A88286

Included Lab Sample IDs: 2047691, 2047692, 2047695, 2047696, 2047699, 2047701, 2047702, 2047705

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

Reference Method: EPA 8321B

Run ID: A88298

Included Lab Sample IDs: 2047711, 2047712, 2047713, 2047714

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	113	92.8	P/P	60 - 150
Acesulfame K	92.8	69.2	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A88326

Included Lab Sample IDs: 2047711, 2047712, 2047713, 2047714

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	105	105	P/P	60 - 150
Sucralose	106	105	P/P	60 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88340

Included Lab Sample IDs: 2047693, 2047697, 2047698, 2047704, 2047706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88378

Included Lab Sample IDs: 2047711, 2047712, 2047713, 2047714

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.5	85.5	P/P	50 - 150
2,4-D	88.6	85.5	P/P	50 - 150
Acetaminophen	127	94.0	P/P	60 - 160
Acetaminophen	99.6	127	P/P	60 - 160
Bentazon	87.3	75.6	P/P	50 - 160
Bentazon	89.8	87.3	P/P	50 - 160
Carbamazepine	110	105	P/P	60 - 160
Carbamazepine	113	110	P/P	60 - 160
Diuron	107	91.5	P/P	60 - 150
Diuron	108	107	P/P	60 - 150
Fenuron	106	123	P/P	60 - 150
Fenuron	123	121	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A88378

Included Lab Sample IDs: 2047711, 2047712, 2047713, 2047714

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	113	125	P/P	60 - 160
Fluridone	125	121	P/P	60 - 160
Hydrocodone	117	93.2	P/P	60 - 150
Hydrocodone	99.6	117	P/P	60 - 150
Ibuprofen	85.6	82.1	P/P	50 - 160
Ibuprofen	87.2	85.6	P/P	50 - 160
Imazapyr	108	90.9	P/P	50 - 150
Imazapyr	117	108	P/P	50 - 150
Imidacloprid	85.2	89.3	P/P	60 - 160
Imidacloprid	89.3	92.7	P/P	60 - 160
Linuron	107	108	P/P	60 - 150
Linuron	108	101	P/P	60 - 150
MCP	86.0	80.4	P/P	50 - 150
MCP	89.9	86.0	P/P	50 - 150
Naproxen	79.8	77.7	P/P	50 - 160
Naproxen	85.6	79.8	P/P	50 - 160
Primidone	106	119	P/P	60 - 160
Primidone	119	110	P/P	60 - 160
Pyraclostrobin	106	104	P/P	60 - 150
Pyraclostrobin	99.2	106	P/P	60 - 150
Triclopyr	85.8	84.0	P/P	50 - 160
Triclopyr	93.5	85.8	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88381

Included Lab Sample IDs: 2047693, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88382

Included Lab Sample IDs: 2047694, 2047700, 2047703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88389

Included Lab Sample IDs: 2047700, 2047703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	101	P/P	90 - 110
Ammonia-N	99.9	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88391

Included Lab Sample IDs: 2047693, 2047697, 2047698, 2047704, 2047706

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88391

Included Lab Sample IDs: 2047693, 2047697, 2047698, 2047704, 2047706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	103	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110
Ammonia-N	103	100	P/P	90 - 110
Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88412

Included Lab Sample IDs: 2047694

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88425

Included Lab Sample IDs: 2047693, 2047694, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.2	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					3.28	
	Turbidity					2.82	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5	101	96.0			4.37
	Ammonia-N	99.3	97.1	99.9			1.49
	Ammonia-N	98.4	97.4	97.9			0.486
	Ammonia-N	101	97.1	97.6			0.317
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	98.1	90.0			7.15
	Kjeldahl Nitrogen	100	104	98.2			4.95
	Kjeldahl Nitrogen	103	108	97.7			9.00
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.0				0.420
	NO2NO3-N	100	102	102			0.327
	NO2NO3-N	102	104	103			0.321
EPA 365.1 Rev. 2.0	Total-P	100	103	103			0.306
	Total-P	99.3	104	104			0.426
	Total-P	105	101	100			0.632
EPA 8321B	2,4-D	76.2	68.5	75.9			7.32
	Acesulfame K	118	101	113			9.46
	Acetaminophen	92.6	102	125			15.5
	Bentazon	74.7	42.1	33.6			13.6
	Carbamazepine	80.8	76.6	72.1			4.42
	Diuron	81.8	62.0	62.4			0.455
	Fenuron	112	92.2	104			11.7
	Fluridone	107	104	108			4.37
	Hydrocodone	102	100	103			2.63
	Ibuprofen	64.2	54.4	61.9			12.9
	Imazapyr	112	109	127			7.43
	Imidacloprid	78.5	129	134			3.24
	Linuron	76.1	59.3	61.2			3.20
	MCP	95.0	83.5	92.5			9.16
	Naproxen	77.5	56.8	69.1			19.6
	Primidone	86.2	96.9	91.6			5.64
	Pyraclostrobin	52.3	51.2	59.3			14.6
	Sucralose	99.8	95.3	106			7.76
	Triclopyr	58.3	44.5	49.9			11.4

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2047691, 2047692, 2047695, 2047696, 2047699, 2047701, 2047702, 2047705
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2047693, 2047694, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2047693, 2047694, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2047693, 2047694, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2047693, 2047694, 2047697, 2047698, 2047700, 2047703, 2047704, 2047706
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2047711, 2047712, 2047713, 2047714

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	12/11/2018			12/11/2018 16:59	Megan Treadwell	2047691, 2047692, 2047695, 2047696, 2047699, 2047701, 2047702, 2047705
EPA 350.1 Rev. 2.0	12/11/2018			12/11/2018 13:46	Ping Hua	2047694
	12/11/2018			12/14/2018 10:32	Ping Hua	2047693
	12/11/2018			12/14/2018 10:50	Ping Hua	2047697
	12/11/2018			12/14/2018 11:05	Ping Hua	2047698
	12/11/2018			12/14/2018 11:26	Ping Hua	2047704
	12/11/2018			12/14/2018 11:28	Ping Hua	2047706
	12/11/2018			12/14/2018 11:37	Ping Hua	2047700
	12/11/2018			12/14/2018 11:47	Ping Hua	2047703
EPA 351.2 Rev. 2.0	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:14	Chelsea Hernandez	2047693
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:18	Chelsea Hernandez	2047697
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:20	Chelsea Hernandez	2047698
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:21	Chelsea Hernandez	2047704
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:23	Chelsea Hernandez	2047706
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:31	Chelsea Hernandez	2047700
	12/11/2018	12/13/2018 12:30	Adrian Shelby	12/17/2018 10:32	Chelsea Hernandez	2047703
	12/11/2018	12/17/2018 14:00	Adrian Shelby	12/18/2018 11:33	Chelsea Hernandez	2047694
EPA 353.2 Rev. 2.0	12/11/2018			12/12/2018 10:50	Beverly Y. Sanders	2047704
	12/11/2018			12/12/2018 11:57	Beverly Y. Sanders	2047693
	12/11/2018			12/12/2018 11:59	Beverly Y. Sanders	2047697
	12/11/2018			12/12/2018 12:00	Beverly Y. Sanders	2047698
	12/11/2018			12/12/2018 12:01	Beverly Y. Sanders	2047706
	12/11/2018			12/14/2018 11:38	Beverly Y. Sanders	2047694
	12/11/2018			12/14/2018 11:39	Beverly Y. Sanders	2047700
	12/11/2018			12/14/2018 11:41	Beverly Y. Sanders	2047703
EPA 365.1 Rev. 2.0	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:04	Beverly Y. Sanders	2047693
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:05	Beverly Y. Sanders	2047697
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:07	Beverly Y. Sanders	2047698
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:08	Beverly Y. Sanders	2047704
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:09	Beverly Y. Sanders	2047706
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:52	Beverly Y. Sanders	2047694
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:53	Beverly Y. Sanders	2047700
	12/11/2018	12/14/2018 12:10	Sima Feizi	12/18/2018 17:54	Beverly Y. Sanders	2047703
EPA 8321B	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 17:12	Rebecca Ware	2047711
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 17:26	Rebecca Ware	2047712
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 17:54	Rebecca Ware	2047713
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/11/2018 18:07	Rebecca Ware	2047714
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 19:09	Mohammad Ghaffari	2047711
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 19:23	Mohammad Ghaffari	2047712

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 19:37	Mohammad Ghaffari	2047713
	12/11/2018	12/11/2018 12:30	Rebecca Ware	12/12/2018 20:04	Mohammad Ghaffari	2047714
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 03:42	Juyoung Kim	2047711
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 04:17	Juyoung Kim	2047712
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 04:51	Juyoung Kim	2047713
	12/11/2018	12/12/2018 10:00	Hoor Shaik	12/14/2018 15:27	Juyoung Kim	2047714