

Chemical Analysis Report

SW-DIST-2016-09-28-01

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

Event Description: **RUN 9**
Request ID: **RQ-2016-09-26-07**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 25-OCT-2016 10:33



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 group are included in this report: Nutrients.

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: Lake Hiawatha

Collection Date/Time: 09/27/2016 10:25

Field ID: G1SW0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835581	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P312080	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P312381	
		Sulfate	5.2		mg SO4/L	P312383	
	SM 2120 B	Color (true)	37		PCU	P312035	
	SM 2320 B-97	Total Alkalinity	5.4		mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	65		mg/L	P312770	
	SM 2540 D-97	TSS	2	I	mg/L	P312753	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P312354	
1835588	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P312692	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P312513	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P312547	
1835595	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P312074	

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: Lake Dead Lady

Collection Date/Time: 09/27/2016 11:00

Field ID: G1SW0021

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835582	EPA 180.1 Rev. 2.0	Turbidity	8.7	A	NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P312593	
		Sulfate	3.0		mg SO4/L	P312834	
	SM 2120 B	Color (true)	120		PCU	P312035	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	101		mg/L	P312770	
	SM 2540 D-97	TSS	16		mg/L	P312753	
	SM 4500 F-C-97	Fluoride	0.070	I	mg F/L	P312354	
1835589	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P312693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P312514	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P313264	
1835596	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P312074	

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: Lake Ann (Parker)

Collection Date/Time: 09/27/2016 11:40

Field ID: G1SW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835583	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P312593	
		Sulfate	4.9		mg SO4/L	P312834	

Field ID: G1SW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835583	SM 2120 B	Color (true)	29		PCU	P312035	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	84		mg/L	P312770	
	SM 2540 D-97	TSS	4	I	mg/L	P312753	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P312354	
1835590	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P312693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P312514	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P312648	
1835597	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P312074	

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: Anclote River (FW)

Collection Date/Time: 09/27/2016 12:25

Field ID: G5SW0110

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835584	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P312593	
		Sulfate	2.3		mg SO4/L	P312834	
	SM 2120 B	Color (true)	180		PCU	P312035	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P312272	
	SM 2540 C-97	TDS	99		mg/L	P312770	
	SM 2540 D-97	TSS	14		mg/L	P312753	
	SM 4500 F-C-97	Fluoride	0.062	I	mg F/L	P312170	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P312693	
1835591	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P312514	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P312648	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P312074	

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: Anclote River @ Starkey

Collection Date/Time: 09/27/2016 12:55

Field ID: G5SW0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835585	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P312384	
		Sulfate	2.0		mg SO4/L	P312382	
	SM 2120 B	Color (true)	190		PCU	P312035	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	82		mg/L	P312770	
	SM 2540 D-97	TSS	4	I	mg/L	P312753	

Field ID: G5SW0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835585	SM 4500 F-C-97	Fluoride	0.067	I	mg F/L	P312354	
1835592	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P312693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P312514	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P312648	
1835599	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P312074	

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: Lake Ann (Parker) Duplicate

Collection Date/Time: 09/27/2016 11:45

Field ID: DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835586	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P312593	
		Sulfate	4.9		mg SO4/L	P312834	
	SM 2120 B	Color (true)	29	A	PCU	P312035	
	SM 2320 B-97	Total Alkalinity	11		mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	83		mg/L	P312771	
	SM 2540 D-97	TSS	4	I	mg/L	P312754	
	SM 4500 F-C-97	Fluoride	0.083	I	mg F/L	P312354	
1835593	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P312693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P312514	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P312830	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P312648	
1835600	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P312074	

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: BLANK

Collection Date/Time: 09/27/2016 08:30

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835587	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P312081	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P312593	
		Sulfate	0.20	U	mg SO4/L	P312834	
	SM 2120 B	Color (true)	2.5	U	PCU	P312035	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P312352	
	SM 2540 C-97	TDS	15	U	mg/L	P312770	
	SM 2540 D-97	TSS	2	U	mg/L	P312753	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P312354	
1835594	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P312504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P312693	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P312514	

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1835594	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P312909	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P312648	
1835601	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P312074	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P312080

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P312081

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312381

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312382

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312383

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312384

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312593

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312834

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312834

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P312504

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312692

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312693

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312513

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312514

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312830

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312909

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312074

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P312035

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P312272

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

Reference Method: SM 2320 B-97
Batch ID: P312352

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

Reference Method: SM 2540 C-97
Batch ID: P312770

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P312771

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P312753

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P312754

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P312170

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P312354

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P312547

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

Reference Method: SM 5310 B-00
Batch ID: P312648

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

Reference Method: SM 5310 B-00
Batch ID: P313264

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312381

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312383

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312834

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P312504

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312692

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312513

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312514

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312830

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312074

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P312272

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

Reference Method: SM 2320 B-97
Batch ID: P312352

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

Reference Method: SM 4500 F-C-97
Batch ID: P312170

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

Reference Method: SM 4500 F-C-97
Batch ID: P312354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P312547

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P312648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P313264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835581	Chloride	96.7		P	90 - 110
1835648	Chloride	95.3	96.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835585	Sulfate	95.1		P	90 - 110
1835978	Sulfate	96.5	95.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312383

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835581	Sulfate	93.7		P	90 - 110
1835648	Sulfate	93.5	94.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835585	Chloride	97.6		P	90 - 110
1835978	Chloride	100	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1836244	Chloride	96.6	99.2	P/P	90 - 110
1836245	Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1836244	Sulfate	93.5	93.3	P/P	90 - 110
1836245	Sulfate	94.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P312504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835590	Ammonia-N	100	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312692

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835474	Kjeldahl Nitrogen	102	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835593	Kjeldahl Nitrogen	90.5	96.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835469	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835589	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1834530	Total-P	104	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835607	Total-P	97.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835595	O-Phosphate-P	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P312170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835584	Fluoride	96.7	97.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P312354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835978	Fluoride	96.4	96.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P312547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1833096	Organic Carbon	113		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P312648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1835589	Organic Carbon	89.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P313264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1840080	Organic Carbon	102		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P312080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835461	Turbidity	3.47	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P312081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835582	Turbidity	0.114	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835648	Chloride	0.724	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835978	Sulfate	0.631	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312383

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835648	Sulfate	0.595	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P312384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835978	Chloride	2.32	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1836244	Chloride	1.55	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P312834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1836244	Sulfate	0.167	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P312504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835590	Ammonia-N	5.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312692

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835474	Kjeldahl Nitrogen	2.43	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P312693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835593	Kjeldahl Nitrogen	3.78	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835469	NO2NO3-N	1.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P312514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835589	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P312830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1834530	Total-P	4.74	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P312909

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835607	Total-P	3.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P312074

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835595	O-Phosphate-P	1.76	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P312035

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835586	Color (true)	2.50	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P312272

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1836077	Total Alkalinity	0.537	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P312352

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835978	Total Alkalinity	0.0310	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97

Batch ID: P312770

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835488	TDS	3.79	Sample	P	0 - 10

Reference Method: SM 2540 C-97

Batch ID: P312771

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835980	TDS	6.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97

Batch ID: P312170

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835584	Fluoride	0.484	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P312354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835978	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P312547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1833096	Organic Carbon	0.673	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P312648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1835589	Organic Carbon	0.736	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P313264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1840080	Organic Carbon	1.21	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 Calibration Verification

Reference Method: SM 2120 B
Run ID: A71886
Included Lab Sample IDs: 1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115
Color (true)	99.0	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A71901
Included Lab Sample IDs: 1835595, 1835596, 1835597, 1835598, 1835599, 1835600, 1835601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	101	99.5	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A71903

Included Lab Sample IDs: 1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587

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

Reference Method: SM 4500 F-C-97

Run ID: A71929

Included Lab Sample IDs: 1835584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71961

Included Lab Sample IDs: 1835584

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A71988

Included Lab Sample IDs: 1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.1	98.6	P/P	90 - 110
Chloride	97.5	98.8	P/P	90 - 110
Chloride	97.9	98.7	P/P	90 - 110
Chloride	98.7	97.9	P/P	90 - 110
Sulfate	98.8	98.9	P/P	90 - 110
Sulfate	99.4	99.1	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A71991

Included Lab Sample IDs: 1835581, 1835582, 1835583, 1835585, 1835586, 1835587

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

Reference Method: SM 4500 F-C-97

Run ID: A71991

Included Lab Sample IDs: 1835581, 1835582, 1835583, 1835585, 1835586, 1835587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A72029

Included Lab Sample IDs: 1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A72029

Included Lab Sample IDs: 1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A72032

Included Lab Sample IDs: 1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594

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

Reference Method: SM 5310 B-00

Run ID: A72041

Included Lab Sample IDs: 1835588

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	108	106	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A72070

Included Lab Sample IDs: 1835590, 1835591, 1835592, 1835593, 1835594

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A72131

Included Lab Sample IDs: 1835582, 1835583, 1835584, 1835586, 1835587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	98.5	98.6	P/P	90 - 110
Sulfate	98.6	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A72163

Included Lab Sample IDs: 1835588, 1835589, 1835590, 1835591, 1835592, 1835593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.6	P/P	90 - 110
Kjeldahl Nitrogen	97.0	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A72164

Included Lab Sample IDs: 1835594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	98.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A72178

Included Lab Sample IDs: 1835588, 1835590, 1835593, 1835594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	102	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A72179

Included Lab Sample IDs: 1835589, 1835591, 1835592

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

Reference Method: SM 5310 B-00

Run ID: A72250

Included Lab Sample IDs: 1835589

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	96.8	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						3.47	
	Turbidity						0.114	
EPA 300.0 Rev. 2.1	Chloride	95.8	95.3	96.1	96.7			0.724
	Chloride	96.6	100	97.5	97.6			2.32
	Chloride	97.3	96.6	99.2	99.8			1.55
	Sulfate	94.8	96.5	95.9	95.1			0.631
	Sulfate	94.7	93.5	94.1	93.7			0.595
	Sulfate	95.7	93.5	93.3	94.6			0.167
EPA 350.1 Rev. 2.0	Ammonia-N	107	100	106				5.31
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	102	97.7				2.43
	Kjeldahl Nitrogen	98.0	90.5	96.7				3.78
EPA 353.2 Rev. 2.0	NO2NO3-N	102	105	104				1.44
	NO2NO3-N	101	102	100				0.990
EPA 365.1 Rev. 2.0	Total-P	103	104	96.8				4.74
	Total-P	99.4	97.7	101				3.48
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	101	103				1.76
SM 2120 B	Color (true)						2.50	
SM 2320 B-97	Total Alkalinity	103					0.537	
	Total Alkalinity	102					0.0310	
SM 2540 C-97	TDS						3.79	
	TDS						6.59	
SM 4500 F-C-97	Fluoride	96.3	96.7	97.2				0.484
	Fluoride	97.8	96.4	96.4				0.0
SM 5310 B-00	Organic Carbon	105	113					0.673

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 5310 B-00	Organic Carbon	98.4	89.7			0.736
	Organic Carbon	96.2	102			1.21

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1835595, 1835596, 1835597, 1835598, 1835599, 1835600, 1835601
SM 2120 B / E31780	True Color measured at 450 nm	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594

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	09/28/2016			09/28/2016 16:47	Sima Feizi	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
EPA 300.0 Rev. 2.1	09/28/2016			10/03/2016	Ping Hua	1835581
	09/28/2016			10/04/2016	Ping Hua	1835585
	09/28/2016			10/05/2016	Ping Hua	1835582, 1835583, 1835584, 1835586, 1835587
	09/28/2016			10/10/2016	Ping Hua	1835582, 1835583, 1835584, 1835586, 1835587
EPA 350.1 Rev. 2.0	09/28/2016			10/04/2016	Sofia Elnemr	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 351.2 Rev. 2.0	09/28/2016	10/07/2016	Adrian Shelby	10/11/2016	Christopher Armour	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 353.2 Rev. 2.0	09/28/2016			10/04/2016	Beverly Y. Sanders	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 365.1 Rev. 2.0	09/28/2016	10/11/2016	Vijayalakshmi Reddy	10/12/2016	Lipi Saha	1835588, 1835589, 1835590, 1835591, 1835592, 1835593, 1835594
EPA 365.1 Rev. 2.0 dissolved	09/28/2016			09/28/2016 16:49	Julia Storbeck	1835595
	09/28/2016			09/28/2016 17:02	Julia Storbeck	1835601
	09/28/2016			09/28/2016 17:07	Julia Storbeck	1835597
	09/28/2016			09/28/2016 17:08	Julia Storbeck	1835600
	09/28/2016			09/28/2016 17:53	Julia Storbeck	1835596, 1835598
	09/28/2016			09/28/2016 17:54	Julia Storbeck	1835599
SM 2120 B	09/28/2016			09/28/2016 22:11	Julie Michelle Frank	1835581
	09/28/2016			09/28/2016 22:12	Julie Michelle Frank	1835582
	09/28/2016			09/28/2016 22:13	Julie Michelle Frank	1835583
	09/28/2016			09/28/2016 22:16	Julie Michelle Frank	1835586, 1835587
	09/28/2016			09/28/2016 22:28	Julie Michelle Frank	1835584
	09/28/2016			09/28/2016 22:29	Julie Michelle Frank	1835585
SM 2320 B-97	09/28/2016			10/01/2016	Dale L. Simmons	1835584
	09/28/2016			10/03/2016	Dale L. Simmons	1835581, 1835582, 1835583, 1835585, 1835586, 1835587
SM 2540 C-97	09/28/2016			10/03/2016	Yijie Li	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 2540 D-97	09/28/2016			10/03/2016	Yijie Li	1835581, 1835582, 1835583, 1835584, 1835585, 1835586, 1835587
SM 4500 F-C-97	09/28/2016			09/29/2016	Dale L. Simmons	1835584
	09/28/2016			10/03/2016	Dale L. Simmons	1835581, 1835582, 1835583, 1835585, 1835586, 1835587
SM 5310 B-00	09/28/2016			10/05/2016	Julie Michelle Frank	1835588, 1835590, 1835591, 1835592, 1835593, 1835594
	09/28/2016			10/14/2016	Julie Michelle Frank	1835589