Chemical Analysis Report

NW-DIST-2016-04-26-03

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

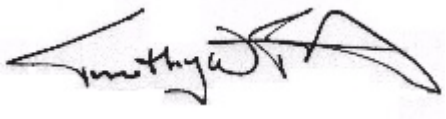
Event Description: **WBID 167 76 101 35A**
Request ID: **RQ-2016-04-25-28**
Customer: **NW-DIST**
Project ID: **SMP**

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

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 24-MAY-2016 16:53



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: Long Creek CR-2 **Collection Date/Time: 04/25/2016 11:00**

Field ID: G4NW0304 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792638	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P303005	
	EPA 300.0 Rev. 2.1	Chloride	4.6		mg Cl/L	P303320	
		Sulfate	0.69		mg SO4/L	P303323	
	SM 2120 B	Color (true)	44	A	PCU	P303013	
	SM 2320 B-97	Total Alkalinity	7.9		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	24	I	mg/L	P303444	
	SM 2540 D-97	TSS	4	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792651	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P303529	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P304037	
1792664	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.010		mg P/L	P302984	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: FIELDBLANK **Collection Date/Time: 04/25/2016 11:10**

Field ID: FIELDBLANK Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792639	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P303005	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P303320	
		Sulfate	0.20	U	mg SO4/L	P303323	
	SM 2120 B	Color (true)	2.5	U	PCU	P303013	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	15	U	mg/L	P303440	
	SM 2540 D-97	TSS	2	U	mg/L	P303307	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792652	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P304142	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P303529	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P304038	
1792665	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302984	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 05/12/2016.

Sample Location: Long Creek abv Campground Rd **Collection Date/Time: 04/25/2016 11:30**

Field ID: G4NW0303 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792640	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P303005	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P303387	

Field ID: G4NW0303 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792640	EPA 300.0 Rev. 2.1	Sulfate	1.0		mg SO4/L	P303388	
	SM 2120 B	Color (true)	51		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	10		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	36		mg/L	P303444	
	SM 2540 D-97	TSS	3	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792653	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.90		mg N/L	P303529	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P304038	
1792666	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P302984	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Ping Log Creek CR-2 **Collection Date/Time: 04/25/2016 12:00**

Field ID: G4NW0317 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792641	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P303005	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P303387	
		Sulfate	0.45	I	mg SO4/L	P303388	
	SM 2120 B	Color (true)	100		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	6.2		mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	25		mg/L	P303444	
	SM 2540 D-97	TSS	3	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792654	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P303529	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P304038	
1792667	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P302984	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Long Creek @ Long Rd **Collection Date/Time: 04/25/2016 13:30**

Field ID: G4NW0308DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792642	EPA 180.1 Rev. 2.0	Turbidity	3.9	A	NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P303387	
		Sulfate	0.58		mg SO4/L	P303388	
	SM 2120 B	Color (true)	51		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	2.2	I	mg CaCO3/L	P303266	
	SM 2540 C-97	TDS	21	I	mg/L	P303444	

Field ID: G4NW0308DUPLICATE Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792642	SM 2540 D-97	TSS	4	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303270	
1792655	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P304038	
1792668	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302984	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Beech Tree Creek unnamed rd **Collection Date/Time: 04/25/2016 13:45**

Field ID: G4NW0330 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792643	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	2.2		mg Cl/L	P303387	
		Sulfate	0.77		mg SO4/L	P303388	
	SM 2120 B	Color (true)	29		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	15	U	mg/L	P303444	
	SM 2540 D-97	TSS	9	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792656	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	3.0		mg C/L	P304038	
1792669	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P302985	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Pond Creek in McCloud Bay Lake Ella Rd **Collection Date/Time: 04/25/2016 14:15**

Field ID: G4NW0350 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792644	EPA 180.1 Rev. 2.0	Turbidity	5.3		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P303387	
		Sulfate	0.93		mg SO4/L	P303388	
	SM 2120 B	Color (true)	57		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	5.6		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	31		mg/L	P303444	
	SM 2540 D-97	TSS	8	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792657	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P303943	MS

Field ID: G4NW0350 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792657	EPA 353.2 Rev. 2.0	NO2NO3-N	0.35		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P304038	
1792670	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P302985	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Pond Creek in McCloud Bay at pipeline off Sunburst Drive **Collection Date/Time: 04/25/2016 14:40**

Field ID: G4NW0351 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792645	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P303387	
		Sulfate	1.2		mg SO4/L	P303388	
	SM 2120 B	Color (true)	52		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	4.1		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	23	I	mg/L	P303444	
	SM 2540 D-97	TSS	8	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792658	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P303699	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P304038	
1792671	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P302985	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: East Br Pine Log Cr blw Bear Bay Flats rd **Collection Date/Time: 04/25/2016 12:15**

Field ID: G4NW0208 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792646	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	2.9		mg Cl/L	P303387	
		Sulfate	0.51		mg SO4/L	P303388	
	SM 2120 B	Color (true)	89		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	9.3		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	28		mg/L	P303444	
	SM 2540 D-97	TSS	3	I	mg/L	P303311	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792659	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P303943	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P303701	
	SM 5310 B-00	Organic Carbon	8.2		mg C/L	P304038	

Field ID: G4NW0208 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792672	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P302985	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Pond Creek @ SR 85 W of Paxton **Collection Date/Time: 04/25/2016 12:30**

Field ID: G4NW0061 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792647	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	4.4		mg Cl/L	P303387	
		Sulfate	1.2		mg SO4/L	P303388	
	SM 2120 B	Color (true)	61		PCU	P303013	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	29		mg/L	P303445	
	SM 2540 D-97	TSS	3	I	mg/L	P303312	RPD
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P303278	
1792660	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P303944	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P303701	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P304038	
1792673	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P302985	

Ref. Method and Comment:
SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 50 umhos/cm.

Sample Location: Pine Log Creek Long Rd **Collection Date/Time: 04/25/2016 13:00**

Field ID: G4NW0315 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792648	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.0		mg Cl/L	P303387	
		Sulfate	0.83		mg SO4/L	P303388	
	SM 2120 B	Color (true)	80	A	PCU	P303014	
	SM 2320 B-97	Total Alkalinity	4.3		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	32		mg/L	P303445	
	SM 2540 D-97	TSS	7	I	mg/L	P303312	RPD
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792661	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P303944	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P303701	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P304638	
1792674	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P302985	

Ref. Method and Comment:
SM 2540 C-97: The reported result is consistent with the laboratory conductivity, 26 umhos/cm.

Sample Location: Long Creek Long Rd **Collection Date/Time: 04/25/2016 13:20**

Field ID: G4NW0308 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792649	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P303387	
		Sulfate	0.58		mg SO4/L	P303388	
	SM 2120 B	Color (true)	52		PCU	P303014	
	SM 2320 B-97	Total Alkalinity	2.3	I	mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	17	I	mg/L	P303445	
	SM 2540 D-97	TSS	5	I	mg/L	P303312	RPD
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792662	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P303683	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P303944	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P303701	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P304038	
1792675	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P302985	

Sample Location: Pond Creek in McCloud Bay Hwy 393 **Collection Date/Time: 04/25/2016 15:00**

Field ID: G4NW0349 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1792650	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P303006	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P303387	
		Sulfate	1.2		mg SO4/L	P303388	
	SM 2120 B	Color (true)	53		PCU	P303014	
	SM 2320 B-97	Total Alkalinity	4.1		mg CaCO3/L	P303462	
	SM 2540 C-97	TDS	18	I	mg/L	P303445	
	SM 2540 D-97	TSS	8	I	mg/L	P303312	RPD
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P303278	
1792663	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P303684	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P303944	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P303530	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P303701	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P304038	
1792676	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P302985	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303005

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303006

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303006

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303387

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303388

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303683

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303684

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303944

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304142

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303529

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303530

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303699

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303701

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302985

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

Reference Method: SM 2120 B
Batch ID: P303013

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P303014

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P303266

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

Reference Method: SM 2320 B-97
Batch ID: P303462

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

Reference Method: SM 2540 C-97
Batch ID: P303440

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P303444

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P303445

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303307

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303311

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P303312

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P303278

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304037

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

Reference Method: SM 5310 B-00
Batch ID: P304038

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

Reference Method: SM 5310 B-00
Batch ID: P304638

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: P303320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303387

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: P303388

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303683

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303944

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304142

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303529

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303530

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303699

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.1		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302985

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

Reference Method: SM 2320 B-97
Batch ID: P303266

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

Reference Method: SM 2320 B-97
Batch ID: P303462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P303278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P304037

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Chloride	97.7		P	90 - 110
1792604	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Sulfate	94.2		P	90 - 110
1792604	Sulfate	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792755	Chloride	96.7	98.1	P/P	90 - 110
1792800	Chloride	95.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792755	Sulfate	94.3	95.4	P/P	90 - 110
1792800	Sulfate	92.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303683

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792651	Ammonia-N	98.4	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792657	Ammonia-N	99.5	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792628	Kjeldahl Nitrogen	89.7	102	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792660	Kjeldahl Nitrogen	103	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793321	Kjeldahl Nitrogen	83.0	82.3	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792549	NO2NO3-N	99.0	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792655	NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792651	Total-P	98.3	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792659	Total-P	96.9	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792664	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792672	O-Phosphate-P	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792546	Fluoride	97.0	97.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P303278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793381	Fluoride	97.9	98.6	P/P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P304037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792519	Organic Carbon	94.8	93.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1792759	Organic Carbon	95.9	93.8	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P304638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1793776	Organic Carbon	98.1	97.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Turbidity	1.69	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P303006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792642	Turbidity	3.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Chloride	0.459	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Sulfate	0.0185	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792755	Chloride	1.28	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P303388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792755	Sulfate	1.05	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792651	Ammonia-N	0.890	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P303684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792657	Ammonia-N	2.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792628	Kjeldahl Nitrogen	6.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792660	Kjeldahl Nitrogen	3.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793321	Kjeldahl Nitrogen	0.489	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792549	NO2NO3-N	2.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P303530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792655	NO2NO3-N	0.396	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303699

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792651	Total-P	0.429	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P303701

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792659	Total-P	2.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302984

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792664	O-Phosphate-P	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P302985

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792672	O-Phosphate-P	1.39	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303013

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792638	Color (true)	0.965	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P303014

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792648	Color (true)	0.624	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P303266

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Total Alkalinity	2.54	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P303462

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793381	Total Alkalinity	0.380	Sample	P	0 - 4.8

Quality Assurance Report
Precision

Reference Method: SM 2540 C-97
Batch ID: P303440

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792162	TDS	4.84	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P303444

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792604	TDS	4.93	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P303445

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792756	TDS	7.59	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P303312

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792756	TSS	11.3	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P303270

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792546	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P303278

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793381	Fluoride	0.509	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P304037

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792519	Organic Carbon	1.45	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P304038

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1792759	Organic Carbon	1.90	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P304638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1793776	Organic Carbon	0.662	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: EPA 365.1 Rev. 2.0 dissolved
Run ID: A69106
Included Lab Sample IDs: 1792664, 1792665, 1792666, 1792667, 1792668, 1792669, 1792670, 1792671, 1792672, 1792673, 1792674, 1792675, 1792676

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	102	P/P	90 - 110
O-Phosphate-P	102	100	P/P	90 - 110
O-Phosphate-P	99.2	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A69112
Included Lab Sample IDs: 1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650

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

Reference Method: SM 2120 B
Run ID: A69115
Included Lab Sample IDs: 1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	103	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69144
Included Lab Sample IDs: 1792638, 1792639

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	99.3	96.9	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69186
Included Lab Sample IDs: 1792638, 1792639, 1792640, 1792641, 1792642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A69186
Included Lab Sample IDs: 1792638, 1792639, 1792640, 1792641, 1792642

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

Reference Method: SM 4500 F-C-97
Run ID: A69187
Included Lab Sample IDs: 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A69217
Included Lab Sample IDs: 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.9	P/P	90 - 110
Chloride	99.6	100	P/P	90 - 110
Sulfate	98.3	99.6	P/P	90 - 110
Sulfate	99.6	97.3	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A69249
Included Lab Sample IDs: 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69271
Included Lab Sample IDs: 1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A69311
Included Lab Sample IDs: 1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	100	P/P	90 - 110
Ammonia-N	101	99.8	P/P	90 - 110
Ammonia-N	99.8	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69346
Included Lab Sample IDs: 1792653, 1792659

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69361
Included Lab Sample IDs: 1792651, 1792652, 1792654, 1792655, 1792656, 1792657, 1792658, 1792660, 1792661, 1792662, 1792663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110
Total-P	99.5	99.0	P/P	90 - 110
Total-P	99.8	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69421
Included Lab Sample IDs: 1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792662, 1792663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.2	96.2	P/P	90 - 110
Organic Carbon	95.7	95.7	P/P	90 - 110
Organic Carbon	96.2	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69428
Included Lab Sample IDs: 1792651, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.2	92.5	P/P	90 - 110
Kjeldahl Nitrogen	92.5	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69472
Included Lab Sample IDs: 1792652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	93.2	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69584
Included Lab Sample IDs: 1792661

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	98.2	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			Precision	
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.69	
	Turbidity					3.11	
EPA 300.0 Rev. 2.1	Chloride	98.9	97.7	97.8		0.459	
	Chloride	97.3	96.7	98.1	95.2		1.28
	Sulfate	95.6	94.2	94.1		0.0185	
	Sulfate	94.8	94.3	95.4	92.8		1.05
EPA 350.1 Rev. 2.0	Ammonia-N	99.1	98.4	99.4			0.890
	Ammonia-N	98.2	99.5	96.9			2.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	89.7	102			6.47
	Kjeldahl Nitrogen	101	103	98.4			3.70
	Kjeldahl Nitrogen	106	83.0	82.3			0.489
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.0	102			2.15
	NO2NO3-N	104	103				0.396
EPA 365.1 Rev. 2.0	Total-P	94.5	98.3	98.7			0.429
	Total-P	95.1	96.9	99.7			2.47
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	100	101			1.17
	O-Phosphate-P	101	100	102			1.39
SM 2120 B	Color (true)					0.965	
	Color (true)					0.624	
SM 2320 B-97	Total Alkalinity	100				2.54	
	Total Alkalinity	101				0.380	
SM 2540 C-97	TDS					4.84	
	TDS					4.93	
	TDS					7.59	
SM 2540 D-97	TSS					11.3	
SM 4500 F-C-97	Fluoride	98.1	97.0	97.0			0.0
	Fluoride	98.3	97.9	98.6			0.509
SM 5310 B-00	Organic Carbon	98.2	94.8	93.2			1.45
	Organic Carbon	97.3	95.9	93.8			1.90
	Organic Carbon	97.6	98.1	97.2			0.662

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1792664, 1792665, 1792666, 1792667, 1792668, 1792669, 1792670, 1792671, 1792672, 1792673, 1792674, 1792675, 1792676
SM 2120 B / E31780	True Color measured at 450 nm	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663

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	04/26/2016			04/26/2016 16:05	Blanca Fach	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
EPA 300.0 Rev. 2.1	04/26/2016			04/30/2016	Elisa J Lutz	1792638, 1792639
	04/26/2016			05/02/2016	Elisa J Lutz	1792640
	04/26/2016			05/03/2016	Elisa J Lutz	1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
EPA 350.1 Rev. 2.0	04/26/2016			05/05/2016	Diana M. Turner	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 351.2 Rev. 2.0	04/26/2016	05/10/2016	Sofia Elnemr	05/11/2016	Christopher Armour	1792651, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
	04/26/2016	05/12/2016	Christopher Armour	05/13/2016	Virginia P. Brown	1792652
EPA 353.2 Rev. 2.0	04/26/2016			05/04/2016	Peter D. Kaus	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 365.1 Rev. 2.0	04/26/2016	05/06/2016	Vijayalakshmi Reddy	05/09/2016	Lipi Saha	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792661, 1792662, 1792663
EPA 365.1 Rev. 2.0 dissolved	04/26/2016			04/26/2016 14:47	Julia Storbeck	1792664
	04/26/2016			04/26/2016 14:55	Julia Storbeck	1792672
	04/26/2016			04/26/2016 15:11	Julia Storbeck	1792668, 1792675
	04/26/2016			04/26/2016 15:12	Julia Storbeck	1792665
	04/26/2016			04/26/2016 15:33	Julia Storbeck	1792666
	04/26/2016			04/26/2016 15:34	Julia Storbeck	1792667
	04/26/2016			04/26/2016 15:35	Julia Storbeck	1792669
	04/26/2016			04/26/2016 15:36	Julia Storbeck	1792670
	04/26/2016			04/26/2016 15:37	Julia Storbeck	1792671
	04/26/2016			04/26/2016 15:38	Julia Storbeck	1792673
	04/26/2016			04/26/2016 15:39	Julia Storbeck	1792674, 1792676
SM 2120 B	04/26/2016			04/26/2016 16:31	Chrisoulla Rakowski	1792638
	04/26/2016			04/26/2016 16:32	Chrisoulla Rakowski	1792639, 1792640
	04/26/2016			04/26/2016 16:33	Chrisoulla Rakowski	1792641
	04/26/2016			04/26/2016 16:34	Chrisoulla Rakowski	1792642
	04/26/2016			04/26/2016 16:35	Chrisoulla Rakowski	1792643, 1792644
	04/26/2016			04/26/2016 16:36	Chrisoulla Rakowski	1792645
	04/26/2016			04/26/2016 16:37	Chrisoulla Rakowski	1792646

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B	04/26/2016			04/26/2016 16:38	Chrisoulla Rakowski	1792647
	04/26/2016			04/26/2016 16:42	Chrisoulla Rakowski	1792648, 1792649
	04/26/2016			04/26/2016 16:43	Chrisoulla Rakowski	1792650
SM 2320 B-97	04/26/2016			04/29/2016	Dale L. Simmons	1792638, 1792639, 1792640, 1792641, 1792642
	04/26/2016			05/03/2016	Dale L. Simmons	1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 2540 C-97	04/26/2016			04/27/2016	Yijie Li	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 2540 D-97	04/26/2016			04/27/2016	Yijie Li	1792638, 1792639, 1792640, 1792641, 1792642, 1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 4500 F-C-97	04/26/2016			04/29/2016	Dale L. Simmons	1792638, 1792639, 1792640, 1792641, 1792642
	04/26/2016			04/30/2016	Dale L. Simmons	1792643, 1792644, 1792645, 1792646, 1792647, 1792648, 1792649, 1792650
SM 5310 B-00	04/26/2016			05/11/2016	Diana M. Turner	1792651, 1792652, 1792653, 1792654, 1792655, 1792656, 1792657, 1792658, 1792659, 1792660, 1792662, 1792663
	04/26/2016			05/19/2016	Diana M. Turner	1792661