FINAL SITE INSPECTION REPORT ADDENDUM
FY 16 PHASE I REGIONAL SITE INSPECTIONS
PER- AND POLYFLUOROALKYL SUBSTANCES

105th AIRLIFT WING
NEW YORK AIR NATIONAL GUARD
STEWART AIR NATIONAL GUARD BASE
NEWBURGH, NY

Contract #: W9133L-14-D-0002

Delivery Order 0006

Modification 002

Wood Project #: 2-9133-0006

01 March 2019

THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS & ABBREVIATIONS

105th AW	105th Airlift Wing
ANG	Air National Guard
bgs	below ground surface
BB&E	BB&E, Incorporated
BRAC	Base Realignment and Closure
°C	degrees Celsius
DoD	Department of Defense
FSP	Field Sampling Plan
ft	feet/foot
FTA	Fire Training Area
HA	Health Advisory
HDPE	High Density Polyethylene
mL/min	Milliliters per minute
MS/MSD	Matrix spike/matrix spike duplicate
NTU	Nephelometric Turbidity Unit
NGB	National Guard Bureau
NYSDEC	New York State Department of Environmental Conservation
ORP	Oxidation Reduction Potential
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutane Sulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance and Quality Control
QC	Quality Control
RSL	Regional Screening Level
SANGB	Stewart Air National Guard Base
SHSP	Site Health and Safety Plan
SI	Site Inspection
SIWP	Site Inspection Work Plan
TOC	Top of Casing
µg/L	Micrograms per Liter
UCMR 3	Third Unregulated Contaminant Monitoring Rule
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
Vista	Vista Analytical Laboratories, Inc.

THIS PAGE INTENTIONALLY LEFT BLANK

1.0 INTRODUCTION

Wood Environment and Infrastructure Solutions, Inc. (Wood; formerly Amec Foster Wheeler Environment & Infrastructure, Inc.), was contracted by the National Guard Bureau (NGB) Operations Restoration Branch (A4OR) under Contract Number W9133L-14-D-0002, Delivery Order 0006, Modification 002, to conduct Phase I Regional Site Inspections (SIs) for Per and Polyfluorinated Substances (PFAS) at multiple Air National Guard (ANG) Installations. SI activities were initiated during fall 2017 (dry season) to evaluate the presence/absence of PFAS at both on- and off-Base locations. The findings and recommendations for the SI activities conducted during fall 2017 (dry season) are presented in the *Final Report FY 16 Phase I Regional Site Inspections, Per- and Polyfluoroalkyl Substances 105th Airlift Wing, New York Air National Guard, Stewart Air National Guard Base, Newburgh, New York* (Wood, 2018).

SI activities were continued in the spring 2018 (wet season) to evaluate seasonal variations for PFAS in groundwater hydraulically downgradient of the SANGB, and in surface water downstream of Recreation Pond, including Silver Stream and a tributary that discharges to Washington Lake. The surface water features are depicted on **Figure 2** of the Final SI Report (Wood, 2018). This SI Report Addendum describes the objectives, procedures, and activities that were completed at locations hydraulically downgradient of the 105th Airlift Wing (105th AW), New York Air National Guard, Stewart Air National Guard Base (SANGB), in the city of Newburgh, New York during the spring 2018 (wet season) sampling event and presents Wood's findings and recommendations.

The spring 2018 (wet season) sampling event was conducted in general accordance with the standards and practices prescribed by the New York State Department of Environmental Conservation (NYSDEC) and based on Title 6 of the New York Codes, Rules and Regulations (6 NYCRR).

1.1 Purpose and Scope

The spring (wet season) sampling event was conducted during May 2018, to supplement off-base groundwater and surface water sampling performed in the dry season (fall 2017) to evaluate the seasonal variations in PFAS concentrations. Sampling was performed at off-Base monitoring wells that were installed during the SI (**Figure 1**), and in surface water hydraulically downgradient

of the SANGB; surface water samples were collected downstream of Recreation Pond, and in Silver Stream and tributaries entering Washington Lake (**Figure 2**).

The spring 2018 sampling summary is presented in **Table 1**. The scope of the spring 2018 (wet season) sampling event included the following field activities:

- Collection of four groundwater samples and one duplicate sample from off-base monitoring wells.
- Collection of one surface water sample and one duplicate sample from the tributary leaving Recreation Pond.
- Collection of nine surface water samples from Silver Stream, including a tributary that discharges to Lake Washington.

Field activities were conducted in accordance with the Final SI Work Plan (SIWP), Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), and Site Health and Safety Plan (SHSP) (Amec Foster Wheeler, 2017). The scope of work is outlined in the following sections.

2.0 FIELD PROGRAM METHODS

The following subsections summarize the spring 2018 off-base groundwater and surface water sampling. The field activities were conducted between 15 and 17 May 2018, in accordance with the SI Work Plan and the ANG Investigation Guidance (ANG, 2009).

2.1 Groundwater Sampling

A total of five groundwater samples, including one duplicate, were collected for chemical analysis of the six PFAS compounds on the Third Unregulated Contaminant Monitoring Rule (UCMR 3) list from the SANGB monitoring wells previously installed at off-base locations. Monitoring well specifications are summarized in **Table 3** of the SI Report (Wood, 2018). Collection was attempted from seven off-base monitoring wells; however, due to a severe storm at the time of sampling, which resulted in collapse of multiple trees that obstructed road access, no samples were collected from two wells (SLMW-21S and SLMW-20D). These wells will be sampled during spring 2019 as part of the supplemental scope of work for the base.

Prior to sampling, the wells were purged with a Proactive™ submersible Monsoon pump using the USEPA low-flow purging and sampling methodology. The submersible pump was evaluated for use in accordance with the tiered approach described in Standard Operating Procedures (SOP) AFW-01 Field Sampling Protocols to Avoid Cross-Contamination of PFAS. Results of the submersible pump equipment blank samples were below the action limits of 0.4 ug/L PFOA and 0.2 ug/L PFOS, in accordance with Wood's internal criteria defined in the QAPP.

The initial water level was recorded using an electronic oil-water interface probe prior to purging and sampling activities. The submersible pump was inserted into the monitoring well to the approximate mid-point of the saturated interval to prevent disturbances and re-suspension of sediment present in the bottom of the well. The pump discharge tubing was connected to a flow-through cell containing a multi-parameter sonde instrument to record water quality parameters. The pump rate during purging was between 100 and 300 milliliters per minute (mL/min) with a steady flow rate maintained, to minimize drawdown of the water level within the well. The following parameters were monitored during purging: temperature, pH, oxidation-reduction potential (ORP), dissolved oxygen, turbidity, temperature, and specific conductivity on approximately five-minute intervals. The water level was monitored during this same time interval.

The wells were considered stabilized after three consecutive readings as follows:

- +/-0.1 standard units (SU) for pH,
- +/-3% millisiemens (mS) for specific conductance (conductivity),
- +/-10 millivolts (mV) for ORP,
- +/-10% milligrams per Liter (mg/L) for dissolved oxygen, and
- +/-10% nephelometric turbidity units (NTU) for turbidity

Following collection, samples were immediately stored in a shipping cooler and cooled with ice to less than 4 degrees Celsius (°C). Groundwater sampling logs and water quality instrument calibration logs are presented in **Appendix A** and **Appendix B**, respectively.

2.2 Surface Water Sampling

A total of eleven surface water samples, including one duplicate, were collected for chemical analysis of the six PFAS compounds on the UCMR 3 list. Surface water samples were collected from a depth of 0.20 to 1.0 feet (ft) below the water surface using dedicated laboratory-supplied sample containers. Sampling was performed in a downstream to upstream manner to avoid sample contamination from suspension and transport of sediment. Following collection, samples were immediately stored in a shipping cooler and cooled with ice to less than 4 degrees °C.

Surface water sampling logs are included in **Appendix C**.

2.3 Decontamination

Field sampling equipment (e.g., water level indicators, pumps, and other downhole equipment) was decontaminated prior to initial use and between samples. Liquinox® soap diluted with certified PFAS-free water was used to wash sampling equipment with a clean high-density polyethylene (HDPE) brush used to remove debris and particulates. A second and third rinse of certified PFAS-free water was used to remove soapy water from the sampling equipment. Prior to use, a sample of the water was submitted to Vista Analytical Laboratories (Vista) for analysis of the six PFAS compounds on the UCMR 3 list. Sample results were reviewed and were verified that Wood's internal PFAS-free criteria were met.

2.4 Laboratory

Samples were submitted to Vista, in El Dorado Hills, California, for analysis of the six PFAS

compounds on the UCMR 3 list.

Select surface water samples were submitted to Test America Laboratory in Denver, Colorado, for analysis of total organic carbon.

Vista and Test America are accredited under the Department of Defense (DoD) Environmental Laboratory Accreditation Program and maintain a National Environmental Laboratory Accreditation Program certification.

2.5 Field Quality Assurance/Quality Control Sample Results

Quality Assurance and Quality Control (QA/QC) samples included two field duplicates, two matrix spike/matrix spike duplicates (MS/MSD), and one equipment rinsate sample. The equipment rinsate sample was collected by pumping laboratory supplied/certified PFAS-free water through the groundwater pump directly into laboratory supplied HDPE containers. All QA/QC samples were analyzed for the same PFAS parameters as the associated project samples. A QA/QC sample summary is presented as **Table 5**.

2.6 Data Validation and Usability

Wood performed a data quality review of seventeen aqueous samples (including two field duplicates and one equipment blank) collected during field activities and submitted to Vista for analysis of PFAS.

The laboratory analytical data generated during the spring 2018 sampling event were reviewed by a qualified analytical chemist for conformance with the project Data Quality Objectives specified in the QAPP (Amec, 2017). Wood performed USEPA Stage 4 validation on 10 % of the field samples and USEPA Stage 2B validation on the remaining field samples associated with this sampling event. The Stage 4 validation includes review of the QC results in the laboratory's analytical report and reported on QC summary forms as well as recalculation checks and review of the instrument raw data outputs. The Stage 2B validation includes review of the QC results in the laboratory's analytical report and reported on QC summary forms with no review of the associated raw data. Data from equipment and field blanks did not undergo validation because results from these samples are only used to assess data usability for field samples. The validation was performed in general accordance with: (1) Wood Final QAPP (Amec 2017); (2) DoD Quality Systems Manual for Environmental Laboratories (DoD, 2017); and (3) USEPA Determination of

Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (USEPA, 2009).

Wood evaluated 101 data records from field samples during the validation. The PFAS results generated by Vista are useable with limitations as described in Sections 7.1.1 through 7.1.11 of the Data Validation Report included as **Appendix D**. Wood J qualified[1] 32 records (32%) as estimated values because of low MS recovery and/or analyte concentrations outside the instrument's calibration range. Laboratory analytical reports and chains of custody forms are provided in **Appendix E.**

[1] The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

3.0 SPRING 2018 (WET SEASON) SAMPLING

This SI field program for the spring 2018 (wet season) sampling event was designed to collect data to evaluate the presence/absence of PFAS compounds within groundwater and surface water at off-Base locations during the wet weather season. The scope of the spring 2018 sampling event was designed using recommendations presented in the PA prepared by BB&E Incorporated (BB&E) and based on NYSDEC's 28 March 2017 response to the Draft Final SIWP. The following sections describe the investigation approach that was used to fulfill the objectives of the SI. The work was conducted in accordance with the QAPP, SHSP, and FSP presented in the approved Work Plan (Amec Foster Wheeler, 2017).

3.1 Investigative Approach

Work Plan deviations and the investigative approach specific to off-Base sampling locations are discussed in the following sections.

3.1.1 Groundwater Sampling

Off-Base monitoring wells and groundwater sample locations are illustrated on Figure 1.

3.1.1.1 Site Deviation

Three deviations from the Work Plan occurred in performance of this sampling activity:

- Wood proposed collecting groundwater samples from wells SLMW-21S and SLMW-20D; however, the access road was obstructed by fallen trees during the spring 2018 sampling event and no samples were collected at these locations.
- One well volume only was purged from LWMW-01 due to the low-yielding nature of the formation, minimal water column, and to avoid dewatering of the well. Following purging of one well volume at LWMW-01, groundwater was allowed to recover overnight prior to sample collection.
- Turbidity in the groundwater samples LWMW-01, LWMW-02, and LWMW-03 was above 50 Nephelometric Turbidity Units (NTUs) at the time of sample collection; based on the elevated turbidity, Wood instructed Vista to centrifuge the samples prior to extraction.

3.1.1.2 Sampling

On 17 May 2018, one groundwater sample each was collected from LWMW-01, LWMW-02,

LWMW-03 and SSMW-01, and one duplicate sample was collected from SSMW-01. Prior to purging and sampling, synoptic groundwater levels were measured at each location and are summarized in **Table 2**.

3.1.2 Surface Water Sampling

Surface water sample locations downstream of Recreation Pond and in Silver Stream are illustrated on **Figure 2**.

3.1.2.1 Site Deviation

One deviation from the Work Plan occurred during the performance of this sampling activity.

- At each surface water sampling location, measurements of pH, temperature, electrical conductivity, turbidity, dissolved oxygen and redox potential were not collected.

3.1.2.2 Sampling

On 15 and 16 May 2018, one surface water sample was collected from the tributary leaving Recreation Pond (RPSW21) and nine surface water samples were collected downstream of Recreation Pond, and within Silver Stream and tributaries entering Lake Washington (LWSW01, LWSW02, RPTSW01, RPTSW02, RPTSW03, SSSW01, SSSW02, SSSW03, and SSSW04) using laboratory-supplied HDPE containers.

4.0 STANDARDS

Effective 3 March 2017, NYSDEC added PFOA and PFOS to 6 NYCRR Part 597 list of hazardous substances, thereby making it a hazardous waste; however, no screening or clean-up criteria are included, and no promulgated standards currently exist for PFAS compounds.

In accordance with USEPA lifetime drinking water Health Advisory Levels (HALs) for Perfluorooctanesulfonic Acid (PFOS) (USEPA, 2016a) and Perfluorooctanoic Acid (PFOA) (USEPA, 2016b), a release is considered confirmed if the following concentrations are exceeded:

PFOS:

- 0.07 micrograms per liter (µg/L) in groundwater/surface water that is used as or contributes to a drinking water source (combined with PFOA value).

PFOA:

- 0.07 µg/L in groundwater/surface water (combined with PFOS value).

USEPA has also derived Regional Screening Level (RSL) values for Perfluorobutane Sulfonate (PFBS) in tap water, for which there is a Tier 2 toxicity value (USEPA, 2018). The ANG will also consider a release to be confirmed if the following concentration is exceeded:

PFBS:

- 400 µg/L in groundwater/surface water that is used as or contributes to a drinking water source.

The HAL and RSL guidance values are collectively referred to as screening criteria in this report.

5.0 SPRING 2018 (WET SEASON) SAMPLING RESULTS

5.1 Groundwater Results

Groundwater samples were collected for analysis from off-base monitoring wells LWMW-01, LWMW-02, LWMW-03, and SSMW-01 as described in **Section 3.1.1.2**.

Groundwater analytical results indicated that either five or six PFAS compounds on the UCMR 3 list were detected at concentrations above the laboratory detection limit in each of the groundwater samples. Individual results of PFOS, PFOA, and PFBS were detected at concentrations below the respective screening criteria. Additionally, the combined result of PFOS and PFOA was below the screening criteria.

PFOS was detected in wells LWMW-01, LWMW-02, LWMW-03, and SSMW-01 at concentrations ranging from 0.00519J µg/L at LWMW-02 to 0.0176 µg/L at LWMW-03. PFOS was not detected at these locations during the fall 2017 (dry season) sampling. PFOA was detected in wells LWMW-01, LWMW-02, LWMW-03, and SSMW-01 at concentrations ranging from 0.00502J µg/L at LWMW-02 to 0.0393 µg/L at LWMW-03, which were similar to fall 2017 results at these locations. PFBS was detected in wells LWMW-01, LWMW-02, LWMW-03, and SSMW-01 at concentrations ranging from 0.00326 µg/L at LWMW-02 to 0.00658 µg/L at LWMW-01. PFBS was not previously detected at LWMW-03, and PFBS results were similar to fall 2017 results at wells LWMW-02 and SSMW-01. Comparisons of analytical results to the fall 2017 sampling results and applicable screening criteria are presented in **Table 3** and illustrated on **Figure 1**. As was the case with the October 2017 (dry season) sampling event, none of the spring 2018 sample results exceed USEPA Drinking Water HA criteria.

5.2 Surface Water Results

Surface water samples were collected for analysis as described in **Section 3.1.2.2**. These samples were obtained from the tributary just downstream of the Recreation Pond outfall (“RP” sample designation), the tributary further downstream of the Recreation Pond discharge (“RPT” sample designation), Silver Stream (“SS” sample designation), into which the Pond tributary discharges, and a surface water diversion channel from Silver Stream to Lake Washington (“LW” sample designation).

Surface water analytical results indicate that five or six PFAS compounds on the UCMR 3 list

were detected at concentrations above the laboratory detection limit in each of the surface water samples. PFOS exceeded the 0.07 µg/L USEPA Drinking Water HA criteria in RPSW21, RPTSW01, RPTSW02, RPTSW03, SSSW02, SSSW03, SSSW04, and LWSW02. Detections of PFOA were below the 0.07 µg/L USEPA Drinking Water HA criteria. The combined result of PFOS and PFOA exceeded the 0.07 µg/L USEPA Drinking Water HA criteria in the surface water samples, with the exception of the upstream sample in Silver Stream (SSSW01) and the downstream sample in Lake Washington tributary (LWSW01). Results of PFBS were below the USEPA Regional Screening Level.

PFOS concentrations in May 2018 were lower than those observed during October 2017, and generally attenuate from upstream to downstream locations (similar to the fall 2017 surface water results), as indicated by concentrations of 0.322 µg/L in RPSW21 (upstream) and 0.108 µg/L in LWSW02 (downstream). PFOA concentrations ranged between 0.00347 µg/L in SSSW01 and 0.0512 µg/L in RPTSW01. In comparison, the October 2017 sample results for PFOA exceeded the 0.07 µg/L USEPA Drinking Water HA criteria at the most upstream locations RPSW21, RPTSW01, and RPTSW02, and showed higher detections in general at other sample locations.

At RPTSW01, there is a significant difference between the PFOS/PFOA concentrations in the dry season (October 2017 = 11.8/3.4 µg/L, respectively) and wet season (May 2018 = 0.4/0.05 µg/L, respectively). It is possible that the elevated October 2017 results are due to a potential new release of AFFF through the stormwater system discharge into Recreation Pond, however, the results do not appear to be attributable to surface water discharge from Recreation Pond because the upstream sample RPSW21, located just below the Recreation Pond outfall exhibits (relatively) low concentrations during the low flow period (PFOS/PFOA = 0.6/0.08 µg/L, respectively).

The elevated result at RPTSW01 may be a result of the nature of stream sampling during low flow conditions. At this location, there was very little or no flowing water during the October 2017 sampling event, and sample collection occurred from ponded water in the stream channel. The water in these areas would tend to be in extensive contact with sediment, and dissolved constituents would tend to concentrate (due to evaporation). Consequently, these water samples would be expected to exhibit higher concentrations than samples obtained from flowing water in the stream channel. The concentration of water in these pools would not be representative of instream (flowing water) concentrations that would be observed in downstream areas (as documented by the remaining sample results). Alternatively, the significant change in

PFOS/PFOA results at RPTSW01 may be due to the discharge of groundwater baseflow (undiluted) into the stream channel.

Finally, it is also possible that the elevated result is an artifact of sample collection caused by additional sediment in the sample due to collection from a standing water pond as opposed to flowing water.

To further evaluate the observed seasonal variability, additional dry weather surface water samples will be collected at the previously sampled locations (RPTSW01 and RPSW-21) during 2019 as part of the supplemental scope of work for the base.

Comparisons of analytical results to the fall 2017 sampling results and applicable screening criteria are presented in **Table 4** and illustrated on **Figure 2.**

6.0 CONCLUSIONS/RECOMMENDATIONS

The spring 2018 (wet season) groundwater sampling results confirmed that individual results of PFOS, PFOA, and PFBS, in addition to the combined results of PFOS and PFOA, were below the respective screening criteria in groundwater at each off-Base well sampled. PFOA and PFBS groundwater concentrations were relatively similar to the fall 2017 (dry season) results for PFOA and PFBS; however, results of PFOS varied seasonally and showed detections during the spring 2018 (wet season), where PFOS had not been detected during fall 2017 (dry season).

The results of the spring 2018 (wet season) surface water sampling confirm that PFAS contamination is present throughout the Silver Stream surface water network to the point where a tributary discharges to Washington Lake through a diversion. In general, results of PFOS and PFOA individually and combined were lower during the wet season sampling compared to the dry season sampling, with a significant difference shown between the PFOS/PFOA concentrations at RPTSW01 in the dry season compared to the wet season. Because of the variability of circumstances that may be contributing to the results and the limited number of data points (one sample form each season), it is premature to draw any conclusive findings at this time.

Based on the results of the spring 2018 (wet season) sampling, additional investigation at selected on-Base PRLs and off-Base is warranted, consistent with the recommendations presented in Section 10.0 of the Final SI Report (Wood, 2018).

TABLES

Table 1
Spring 2018 Sampling Summary
FY16 Phase I Site Inspections for PFAS
105th Airlift Wing, New York Air National Guard
Stewart Air National Guard Base, Newburgh, New York

Area of Inspection	Location Type	No. Wells		No. Samples		
		EW	MW	GW	SW	SD
Recreation Pond	Storm Water and Surface Water Discharge	0	0	0	1	0
Tributaries Entering Lake Washington	Contaminant Migration Pathway	0	0	0	9	0
Off-Base Groundwater	Contaminant Migration Pathway	0	4	4	0	0
TOTAL		0	4	4	10	0

Notes:

EW = Existing Well
MW = Monitoring Well
SD = Sediment
GW = Groundwater
SW= Surface Water

Table 2
Groundwater Elevation Data
May 17, 2018
FY16 Phase I Regional Site Inspections for Perfluorinated Compounds Addendum
105th Airlift Wing, New York Air National Guard
Stewart Air National Guard Base, New York

Location	Date	Top of Casing (ft, NAVD88)	Depth to Water (ft, bTOC)	Groundwater Elevation (ft, NAVD88)
LW-MW01	05/17/18	363.20	21.72	341.48
LW-MW02	05/17/18	332.06	8.17	323.89
LW-MW03	05/17/18	335.82	3.63	332.19
SS-MW01	05/17/18	342.57	7.45	335.12
SLMW-21S (WT)	05/17/18	346.53	NM	NA
SLMW-20D	05/17/18	342.41	NM	NA

Notes:
ft = feet
bgs = below ground surface
bTOC = below top of casing
NAVD88 = North American Vertical Datum of 1988
NM = Not measured
NA = Not applicable

Table 3

Summary of Groundwater Analytical Testing Results

FY16 Phase I Regional Site Inspections for Perfluorinated Compounds Addendum

105th Airlift Wing, New York Air National Guard

Stewart Air National Guard Base, New York

Analyte:						Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	PFOS+PFOA	Perfluorobutanesulfonic acid (PFBS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanoic acid (PFNA)
Health Advisory:						0.07	0.07	0.07	NA	NA	NA	NA
EPA RSL Tapwater:						NA	NA	NA	400	NA	NA	NA
Area	**Location**	**Sample ID**	**Sample Date**	**Sample Depth (ft bTOC)**	**Sample Type**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LW	LWMW-01	STWRT-LW-MW01	17-May-18	23.0	N	0.00304 J	0.0351	0.03814	0.00658 J	0.00453 J	0.00634 J	0.0053 U
	LWMW-02	STWRT-LW-MW02_051718	17-May-18	13.9	N	0.00519 J	0.00502 J	0.01021	0.00326 J	0.00335 J	0.00315 J	0.0053 U
		STWRT-LW-MW02	30-Nov-17	15.6	N	0.00539 U	0.00588 J	NA	0.00312 J	0.00473 J	0.003 J	0.00334 J
	LWMW-03	STWRT-LW-MW03_051718	17-May-18	9.0	N	0.0176	0.0393	0.0569	0.00407 J	0.0437	0.0202	0.00829 J
		STWRT-LW-MW03	01-Dec-17	13.3	N	0.0053 U	0.0272	NA	0.0053 U	0.0246	0.0089	0.00481 J
RPT	SLMW-20D	STWRT-GW-SLMW20D	19-Jan-18	18.6	N	0.0107	0.0053 U	NA	0.0053 U	0.0053 U	0.0053 U	0.0053 U
SS	SSMW-01	STWRT-SS-MW01_051718	17-May-18	11.5	N	0.00766 J	0.0091	0.01676	0.00359 J	0.00356 J	0.00616 J	0.00496 U
		STWRT-GW-DUP-001-051718	17-May-18	11.5	FD	0.00567 J	0.00784 J	0.01351	0.00561 J	0.00366 J	0.00705 J	0.00517 U
		STWRT-SS-MW01	01-Dec-17	13.3	N	0.00553 U	0.00564 J	NA	0.00312 J	0.00275 J	0.00507 J	0.00553 U
		STWRT-GW-DUP-002-120117	01-Dec-17	13.3	FD	0.00403 J	0.00608 J	0.01011	0.00284 J	0.00543 U	0.00683 J	0.00543 U

Notes:

Light Blue Shaded = Exceeds Screening Level

ft = Feet

bTOC = Below top of casing

ID = Identification

N = Normal Field Sample

FD = Field Duplicate Sample

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported limit of detection (LOD).

NA = Not applicable

SS = Silver Stream

LW = Lake Washington

RPT = Recreation Pond Tributary

µg/L = micrograms per liter

PFAS analysis by Modified USEPA Method 537 using Liquid Chromatography and Tandem Mass Spectrometry

Health Advisory from USEPA Office of Water, 2016a and 2016b, Health Advisories (HAs) for drinking water.

[1]EPA Regional Screening Levels (May 2018) [https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2018]

PFOS+PFOA = Co-occurrence of PFOA and PFOS (PFOA + PFOS) in aqueous samples is reported using the following guidelines:

1. If both PFOA and PFOS are detected at or above the detection limit (DL), then the sum of PFOA+ PFOS is reported.
2. If either PFOA or PFOS is detected at or above the DL and the other is below the DL, then PFOA + PFOS is reported as "NA" representing Not Applicable.
3. If neither PFOA nor PFOS is detected at or above the DL, then PFOA + PFOS is reported as "ND" representing Not Detected.

Table 4
Summary of Surface Water Analytical Testing Results
FY16 Phase I Regional Site Inspections for Perfluorinated Compounds Addendum
105th Airlift Wing, New York Air National Guard
Stewart Air National Guard Base, New York

					Analyte:	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	PFOS+PFOA	Perfluorobutanesulfonic acid (PFBS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanoic acid (PFNA)
					Health Advisory:	0.07	0.07	0.07	NA	NA	NA	NA
					EPA RSL Tapwater[1]:	NA	NA	NA	400	NA	NA	NA
Area	**Location**	**Sample ID**	**Sample Date**	**Sample Depth (ft.)**	**Sample Type**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LW	LWSW01	STWRT-LWSW01	18-Oct-17	0.0-0.0	N	0.181	0.034	0.215	0.0187	0.041	0.119	0.00525 J
		STWRT-LWSW01_051518	15-May-18	0.1-0.2	N	0.0291	0.00559 J	0.03469	0.00272 J	0.00581 J	0.0103	0.00539 U
	LWSW02	STWRT-LWSW02	18-Oct-17	0.0-0.0	N	0.104	0.02	0.124	0.00708 J	0.0194	0.0537	0.00402 J
		STWRT-LWSW02_051618	16-May-18	0.2-0.5	N	0.108	0.0224	0.1304	0.00894	0.0205	0.0493	0.0053 U
RP	RPSW21	STWRT-RPSW21_051618	16-May-18	0.2-0.5	N	0.322	0.0358	0.3578	0.0111	0.0273	0.0758	0.00984
		STWRT-SW-DUP-001-051618	16-May-18	0.2-0.5	FD	0.322	0.0331	0.3551	0.012	0.0249	0.0801	0.00921
RPT	RPTSW01	STWRT-RPTSW01	19-Oct-17	0.0-0.0	N	11.8	3.37	15.17	5.57	1.04	34.7	0.0315
		STWRT-RPTSW01_051518	15-May-18	0.5-1.0	N	0.439	0.0512	0.4902	0.0161	0.0428	0.119	0.0136
	RPTSW02	STWRT-RPTSW02	18-Oct-17	0.0-0.0	N	0.616	0.0763	0.6923	0.0367	0.0878	0.222	0.0165
		STWRT-RPTSW02_051518	15-May-18	0.5-1.0	N	0.383	0.0504	0.4334	0.0152	0.0424	0.119	0.0053 U
	RPTSW03	STWRT-RPTSW03	18-Oct-17	0.0-0.0	N	0.0506	0.0516	0.1022	0.0882	0.0363	0.061	0.00239 J
		STWRT-RPTSW03_051518	15-May-18	0.5-1.0	N	0.2	0.025	0.225	0.00909	0.0205	0.0675	0.00534 U
SS	SSSW01	STWRT-SSSW01	19-Oct-17	0.0-0.0	N	0.0244	0.00359 J	0.02799	0.00588 J	0.00267 J	0.0282	0.00534 U
		STWRT-SSSW01_051518	15-May-18	0.2-0.5	N	0.0163	0.00347 J	0.01977	0.00388 J	0.00271 J	0.0127	0.00543 U
	SSSW02	STWRT-SSSW02	19-Oct-17	0.0-0.0	N	0.281	0.0418	0.3228	0.0185	0.0428	0.0995	0.00861
		STWRT-SSSW02_051518	15-May-18	0.2-0.5	N	0.103	0.0157	0.1187	0.00716 J	0.0137	0.0458	0.00317 J
	SSSW03	STWRT-SSSW03	19-Oct-17	0.0-0.0	N	0.221	0.0413	0.2623	0.0194	0.0463	0.125	0.00757 J
		STWRT-SSSW03_051518	15-May-18	0.2-0.5	N	0.176	0.015	0.191	0.00752 J	0.0146	0.0454	0.00539 U
	SSSW04	STWRT-SSSW04	18-Oct-17	0.0-0.0	N	0.199	0.0362	0.2352	0.0213	0.0401	0.123	0.00596 J
		STWRT-SSSW04_051518	15-May-18	0.2-0.5	N	0.113	0.0172	0.1302	0.00708 J	0.0138	0.0429	0.00397 J

Notes:

Light Blue Shaded = Exceeds Screening Level

LW = Lake Washington

RP = Recreation Pond

RPT = Recreation Pond Tributary

SS = Silver Stream

N = Normal Field Sample

FD = Field Duplicate Sample

mg/kg = milligrams per kilogram

ft = Feet

ID = Identification

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported limit of detection (LOD)

NA = Not applicable

PFAS analysis by Modified USEPA Method 537 using Liquid Chromatography and Tandem Mass Spectrometry

[1]EPA Regional Screening Levels (May 2018) [https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2018]

Table 5

QA/QC Sample Summary

FY16 Phase I Regional Site Inspections for Perfluorinated Compounds

105th Airlift Wing, New York Air National Guard

Stewart Air National Guard Base, New York

QA/QC Sample	Sample ID	Sample Type	Matrix	Sample Date	Blank Association	Notes	Date COC Executed
STWRT-EB-007	STWRT-EB-007-ZA-051718	EB	WQ	5/17/2018	Groundwater (Off-base)	ProActive Monsoon Pump	5/18/2018
RPSW21	STWRT-SW-DUP-001-051618	FD	SW	5/16/2018	Groundwater (Off-base)	Recreation Pond	5/18/2018
SSMW-01	STWRT-GW-DUP-001-051718	FD	GW	5/17/2018	Surface Water	Silver Stream	5/18/2018
RPTSW01	STWRT-RPTSW01	MS/MSD	SW	5/15/2018	Surface Water	Recreation Pond Tributary	5/18/2018
LWMW-03	STWRT-LW-MW03	MS/MSD	GW	5/17/2018	Groundwater	Base Boundary Wells	5/18/2018

Notes:

QA/QC = Quality Assurance/Quality Control

EB = Equipment Blank

FD = Field Duplicate

WQ = Water Quality

GW = Groundwater

SW = Surface Water

MS/MSD = Matrix Spike/ Matrix Spike Duplicate

FIGURES

OFF-BASE GROUNDWATER SAMPLE RESULTS

Stewart Air National Guard Base
Newburgh, New York

GROUNDWATER				
Location	Analyte	01-Dec-17	17-May-18	
		Result (ug/L)	Depth (ft bTOC)	Result (ug/L)
LMMW-01	PFOS	NS	23.0	**0.00304 J**
	PFOA	NS	23.0	**0.0351**
	PFBS	NS	23.0	**0.00658 J**
	PFHpA	NS	23.0	**0.00453 J**
	PFHxS	NS	23.0	**0.00634 J**
	PFNA	NS	23.0	<0.0053
	PFOS+PFOA	NS	23.0	**0.03814**

GROUNDWATER					
Location	Analyte	19-Jan-18		17-May-18	
		Depth (ft bTOC)	Result (ug/L)	Result (ug/L)	
SLMW-20D	PFOS	18.6	**0.0107**	NS	
	PFOA	18.6	<0.0053	NS	
	PFBS	18.6	<0.0053	NS	
	PFHpA	18.6	<0.0053	NS	
	PFHxS	18.6	<0.0053	NS	
	PFNA	18.6	<0.0053	NS	
	PFOS+PFOA	18.6	**0.0107**	NS	

GROUNDWATER					
Location	Analyte	30-Nov-17		17-May-18	
		Depth (ft bTOC)	Result (ug/L)	Depth (ft bTOC)	Result (ug/L)
LWMW-02	PFOS	15.6	<0.00539	13.9	**0.00519 J**
	PFOA	15.6	**0.00588 J**	13.9	**0.00502 J**
	PFBS	15.6	**0.00312 J**	13.9	**0.00326 J**
	PFHpA	15.6	**0.00473 J**	13.9	**0.00335 J**
	PFHxS	15.6	**0.003 J**	13.9	**0.00315 J**
	PFNA	15.6	**0.00334 J**	13.9	<0.0053
	PFOS+PFOA	15.6	NA	13.9	**0.01021**

GROUNDWATER					
Location	Analyte	01-Dec-17		17-May-18	
		Depth (ft bTOC)	Result (ug/L)	Depth (ft bTOC)	Result (ug/L)
SSMW-01	PFOS	13.3	<0.00553	11.5	**0.00766 J**
	PFOA	13.3	**0.00608 J***	11.5	**0.0091**
	PFBS	13.3	**0.00312 J**	11.5	**0.00561 J***
	PFHpA	13.3	**0.00275 J**	11.5	**0.00359 J**
	PFHxS	13.3	**0.00683 J***	11.5	**0.00705 J***
	PFNA	13.3	<0.00553	11.5	<0.00517*
	PFOS+PFOA	13.3	NA	11.5	**0.01676**

GROUNDWATER					
Location	Analyte	30-Nov-17		17-May-18	
		Depth (ft bTOC)	Result (ug/L)	Depth (ft bTOC)	Result (ug/L)
LWMW-03	PFOS	13.3	<0.0053	9.0	**0.0176**
	PFOA	13.3	**0.0272**	9.0	**0.0393**
	PFBS	13.3	<0.0053	9.0	**0.00407 J**
	PFHpA	13.3	**0.0246**	9.0	**0.0437**
	PFHxS	13.3	**0.0089**	9.0	**0.0202**
	PFNA	13.3	**0.00481 J**	9.0	**0.00829 J**
	PFOS+PFOA	13.3	NA	9.0	**0.0569**

Legend

- Monitoring Well
- Existing Monitoring
- Surface Water Flow
- Installation Area

Notes & Sources

Screening Criteria	
Analyte	Groundwater/Surface Water (µg/L)
PFOA	0.07
PFOS	0.07
PFOA+PFOS	0.07
PFBS	400

Notes:
AFFF - Aqueous film forming foam
PRL - Potential release location
PFAS - Perfluoroalkyl substances
PFOS - Perfluorooctanesulfonic acid
PFOA - Perfluorooctanoic acid
PFBS - Perfluorobutanesulfonic acid
PFHpA - Perfluoroheptanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid

BOLD text indicates a detection.

YELLOW highlighted cells indicates exceedance of Screening Criteria.

µg/L = Micrograms per liter
mg/kg = Miligrams per kilogram
J = Estimated detect
NS = Not sampled
NA = Not applicable
* Field duplicate value exceeded primary sample

Well SLMW-21S was inaccessible during Fall 2017 and Spring 2018; and well SLMW-20D was inaccessible during Spring 2018; therefore no samples were collected.

Sources: Potential AFFF PFC PRLs and Installation Area datalayers obtained from Figure 2 of the Final Perfluorinated Compounds Preliminary Assessment Site Visit Report prepared by BB&E and dated March 2016.

0 275 550 Feet

N

wood.
Wood Environment & Infrastructure Solutions, Inc.
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

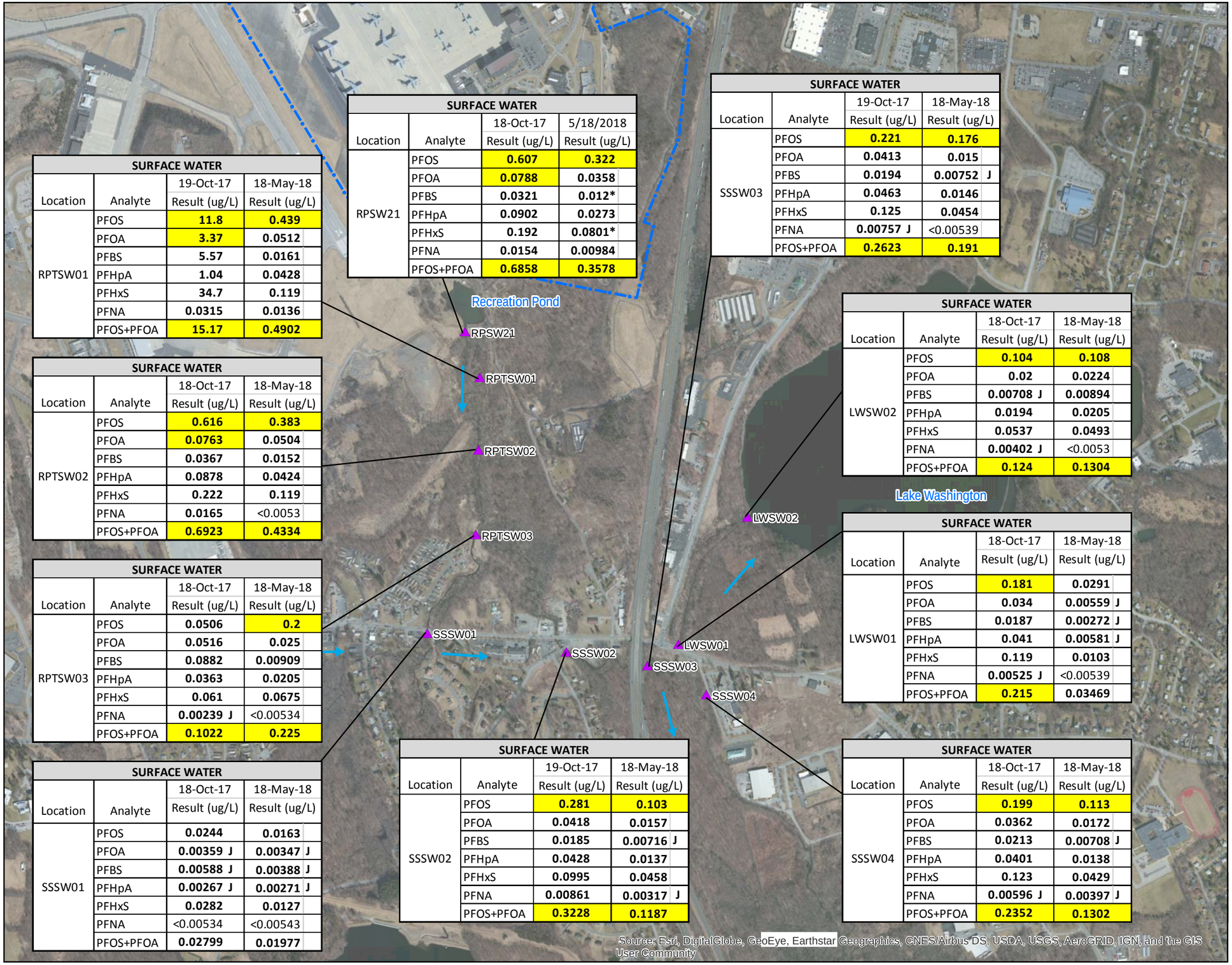
FIGURE 1

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

H:\ANG\Newburgh_NY\Task1\MXD\Fig1_LakeWashington_GW.mxd September 11, 2018 DWN: emily.gardiner CHKD: KD

LAKE WASHINGTON TRIBUTARIES SURFACE WATER SAMPLE RESULTS

Stewart Air National Guard Base
Newburgh, New York



SURFACE WATER

Location	Analyte	19-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
RPTSW01	PFOS	**11.8**	**0.439**
	PFOA	**3.37**	**0.0512**
	PFBS	**5.57**	**0.0161**
	PFHpA	**1.04**	**0.0428**
	PFHxS	**34.7**	**0.119**
	PFNA	**0.0315**	**0.0136**
	PFOS+PFOA	**15.17**	**0.4902**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	5/18/2018 Result (ug/L)
RPSW21	PFOS	**0.607**	**0.322**
	PFOA	**0.0788**	**0.0358**
	PFBS	**0.0321**	**0.012***
	PFHpA	**0.0902**	**0.0273**
	PFHxS	**0.192**	**0.0801***
	PFNA	**0.0154**	**0.00984**
	PFOS+PFOA	**0.6858**	**0.3578**

SURFACE WATER

Location	Analyte	19-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
SSSW03	PFOS	**0.221**	**0.176**
	PFOA	**0.0413**	**0.015**
	PFBS	**0.0194**	**0.00752 J**
	PFHpA	**0.0463**	**0.0146**
	PFHxS	**0.125**	**0.0454**
	PFNA	**0.00757 J**	<0.00539
	PFOS+PFOA	**0.2623**	**0.191**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
LWSW02	PFOS	**0.104**	**0.108**
	PFOA	**0.02**	**0.0224**
	PFBS	**0.00708 J**	**0.00894**
	PFHpA	**0.0194**	**0.0205**
	PFHxS	**0.0537**	**0.0493**
	PFNA	**0.00402 J**	<0.0053
	PFOS+PFOA	**0.124**	**0.1304**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
RPTSW02	PFOS	**0.616**	**0.383**
	PFOA	**0.0763**	**0.0504**
	PFBS	**0.0367**	**0.0152**
	PFHpA	**0.0878**	**0.0424**
	PFHxS	**0.222**	**0.119**
	PFNA	**0.0165**	<0.0053
	PFOS+PFOA	**0.6923**	**0.4334**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
LWSW01	PFOS	**0.181**	**0.0291**
	PFOA	**0.034**	**0.00559 J**
	PFBS	**0.0187**	**0.00272 J**
	PFHpA	**0.041**	**0.00581 J**
	PFHxS	**0.119**	**0.0103**
	PFNA	**0.00525 J**	<0.00539
	PFOS+PFOA	**0.215**	**0.03469**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
RPTSW03	PFOS	**0.0506**	**0.2**
	PFOA	**0.0516**	**0.025**
	PFBS	**0.0882**	**0.00909**
	PFHpA	**0.0363**	**0.0205**
	PFHxS	**0.061**	**0.0675**
	PFNA	**0.00239 J**	<0.00534
	PFOS+PFOA	**0.1022**	**0.225**

SURFACE WATER

Location	Analyte	19-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
SSSW02	PFOS	**0.281**	**0.103**
	PFOA	**0.0418**	**0.0157**
	PFBS	**0.0185**	**0.00716 J**
	PFHpA	**0.0428**	**0.0137**
	PFHxS	**0.0995**	**0.0458**
	PFNA	**0.00861**	**0.00317 J**
	PFOS+PFOA	**0.3228**	**0.1187**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
SSSW04	PFOS	**0.199**	**0.113**
	PFOA	**0.0362**	**0.0172**
	PFBS	**0.0213**	**0.00708 J**
	PFHpA	**0.0401**	**0.0138**
	PFHxS	**0.123**	**0.0429**
	PFNA	**0.00596 J**	**0.00397 J**
	PFOS+PFOA	**0.2352**	**0.1302**

SURFACE WATER

Location	Analyte	18-Oct-17 Result (ug/L)	18-May-18 Result (ug/L)
SSSW01	PFOS	**0.0244**	**0.0163**
	PFOA	**0.00359 J**	**0.00347 J**
	PFBS	**0.00588 J**	**0.00388 J**
	PFHpA	**0.00267 J**	**0.00271 J**
	PFHxS	**0.0282**	**0.0127**
	PFNA	<0.00534	<0.00543
	PFOS+PFOA	**0.02799**	**0.01977**

Legend

- Surface Water Sample
- Surface Water Flow Direction
- Installation Area

Notes & Sources

Screening Criteria	
Analyte	Groundwater/Surface Water (µg/L)
PFOA	0.07
PFOS	0.07
PFOA+PFOS	0.07
PFBS	400

Notes:
AFFF - Aqueous film forming foam
PRL - Potential release location
PFAS - Perfluoroalkyl substances
PFOS - Perfluorooctanesulfonic acid
PFOA - Perfluorooctanoic acid
PFBS - Perfluorobutanesulfonic acid
PFHpA - Perfluoroheptanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid

BOLD text indicates a detection.

YELLOW highlighted cells indicates exceedance of Screening Criteria.

µg/L = Micrograms per liter
mg/kg = Miligrams per kilogram
J = Estimated detect
NA = Not applicable
* Field duplicate value exceeded primary sample

Sources: Potential AFFF PFC PRLs and Installation Area datalayers obtained from Figure 2 of the Final Perfluorinated Compounds Preliminary Assessment Site Visit Report prepared by BB&E and dated March 2016.

0 500 1,000 Feet

N

Wood Environment & Infrastructure Solutions, Inc.
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

FIGURE 2

H:\ANG\Newburgh_NY\Task1\MXD\Fig2_LakeWashington_SW.mxd September 11, 2018 DWN: emily.gardiner CHKD: KD

APPENDIX A

Groundwater Sampling Logs

GROUNDWATER SAMPLING RECORD

amec foster wheeler

Project Name: Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations
Project Number: 291330006

Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Technician(s):**	Zeki Alikaya
Well ID:	LWMW01	**Date:**	05/16/18
Initial Depth to Water (ft):	21.72	**Well Diameter (in):**	2.0
Total Depth of Well (ft):	23.31	**1 Casing Volume (gal):**	0.3
Method of Purging:	Low flow	**3 Casing Volumes (gal):**	0.8
Measuring Point (toc, tor, etc.):	Top of Riser	**Pump Intake Depth (feet):**	23.00

Time	Water Level (feet)	Flow Rate (mL/min)	Cum. Volume (gal.)	Temp. (°C)	pH (SU)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
		Stabilization Criteria		±0.5°C	±0.1	±3%	±10%	±10%	±10% and <10 NTU	
16:17		200								Pumping/Purging Started
16:20	22.55	200	0.1	13.24	6.52	.954	0.79	-46	>1000	Very turbid
16:25	22.65	200	0.35	13.09	6.46	.943	0.00	-45	>1000	Very turbid
13:02	21.81									Well rechargedw/i 0.3'
13:35	22.55	200	.40	15.10	6.60	.830	2.74	72	255	Sample

Stability Reached (Y/N): No — If No, Provide Explanation: No - 1 well volume purged as per SP because of historic dewatering, 051718 WL 21.81 w/i 0.3' of fully recharged final readings collected and sample collected

	Temp.	pH	SEC	DO	ORP	Turbidity
Final Values:	**15.10**	**6.60**	**.830**	**2.74**	**72**	**255**

Sample ID:	STWRT-LW-MW01	**Method of Sampling:**	Low flow
QA/QC Samples (Yes/No):	No	**Sample Date:**	05/17/18
Duplicate ID:	NA	**Sample Collection Time:**	13:35
Sample Container Type(s):	Hdpe	**Total Volume Purged (gal):**	0.55
Preservative(s):	Ice (4 °C)	**Sample Depth (ft):**	23.00
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List	**Depth to Water After Sampling (ft):**	22.37

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N): Yes — Calibrated Within Criteria (Y/N): Yes

Turbidity Meter, Water Quality Meter, Water Level Meter, Mega Monsoon Pump
Horiba U52 Wwodhy5x, YSI 556 MPS Wwodhy5x

Calculations:

Saturated well casing volume: V= Π(R^2)H*7.48 gal/ft^3

V=Volume (gal/ft)
Π = 3.14
R = well radius (ft) = (well diameter (in)/12 (in/ft))/2)
H = height of water column (ft)

V= Π(R^2)H*7.48 gal/ft^3
= Π * (2.0 (in)/12 (in/ft))/2)^2 * 1.59 * 7.48 gal/ft^3
= 0.3 gal.

Signature: [signature]

Notes:

23.29 depth to bottom sample slighty turbid

Name (print): Zeki Alikaya

QA/QC'd by: **K. Doyle** **QA/QC Date:** **5/21/2018**

amec foster wheeler

GROUNDWATER SAMPLING RECORD

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Technician(s):**	Zeki Alikaya
Well ID:	LW-MW02	**Date:**	05/17/18
Initial Depth to Water (ft):	8.17	**Well Diameter (in):**	2.0
Total Depth of Well (ft):	19.69	**1 Casing Volume (gal):**	1.9
Method of Purging:	Low Flow	**3 Casing Volumes (gal):**	5.7
Measuring Point (toc, tor, etc.):	Top of Riser	**Pump Intake Depth (feet):**	13.93

Time	**Water Level (feet)**	**Flow Rate (mL/min)**	**Cum. Volume (gal.)**	**Temp. (°C)**	**pH (SU)**	**Specific Electrical Conductance (mS/cm)**	**DO (mg/L)**	**ORP (mV)**	**Turbidity (NTU)**	**Comments/Observations During Purging (color, sediment, odor, etc.)**
			Stabilization Criteria	±0.5°C	±0.1	±3%	±10%	±10%	±10% and <10 NTU	
08:16		200								Pumping/Purging Started
08:20	8.61	200	0.2	12.35	6.68	4.14	1.61	56	>1000	Pale brown
08:25	8.67	200	0.5	12.02	6.60	4.19	0.79	56	825	Saa
08:30	8.74	200	0.8	12.09	6.59	4.22	0.59	54	701	Saa
08:35	8.85	200	1.0	12.17	6.58	4.23	0.43	53	650	Saa
08:40	8.87	250	1.25	12.16	6.56	4.24	0.27	52	501	Saa
08:45	8.93	250	1.75	12.09	6.55	4.28	0.00	48	275	Saa
08:50	9.01	300	2.25	12.07	6.60	4.28	0.00	45	51.1	Clear
08:55	9.03	200	2.5	12.08	6.59	4.29	0.00	41	48.6	Saa
09:00	9.10	250	2.75	12.17	6.63	4.30	0.00	38	46.7	Saa
09:05	9.11	200	3.00	12.24	6.67	4.31	0.00	37	48.7	Saa
09:20	8.18									Well recharged ok to sample
09:23	8.18	200	3.10	12.30	6.71	4.28	0.00	40	51.2	Sampled

Stability Reached (Y/N): Other (some do not stabilize) If No, Provide Explanation Other (some do not stabilize) - Stable except drawdown waited for recharge 15 min

	Temp.	pH	SEC	DO	ORP	Turbidity
Final Values:	**12.30**	**6.71**	**4.28**	**0.00**	**40**	**51.2**

Sample ID:	STWRT-LW-MW02	**Method of Sampling:**	Low flow
QA/QC Samples (Yes/No):	Yes MS/MSD	**Sample Date:**	05/17/18
Duplicate ID:	NA	**Sample Collection Time:**	09:23
Sample Container Type(s):	Hdpe	**Total Volume Purged (gal):**	3.5
Preservative(s):	Ice (4 °C)	**Sample Depth (ft):**	13.93
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List	**Depth to Water After Sampling (ft):**	8.31

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N): Yes Calibrated Within Criteria (Y/N): Yes

Turbidity Meter, Water Quality Meter, Water Level Meter, Mega Monsoon Pump
Horiba U-52 Wwodhy5x, Horiba U-52 Wwodhy5x

Calculations:

Saturated well casing volume: V= Π(R^2)H*7.48 gal/ft^3

V=Volume (gal/ft)
Π = 3.14
R = well radius (ft) = (well diameter (in)/12 (in/ft))/2)
H = height of water column (ft)

V= Π(R^2)H*7.48 gal/ft^3
= Π * (2.0 (in)/12 (in/ft))/2)^2 * 11.52 * 7.48 gal/ft^3
= 1.9 gal.

Signature:

Notes:

Sample clear

Name (print): Zeki Alikaya

QA/QC'd by: **K. Doyle** **QA/QC Date:** **5/21/2018**

GROUNDWATER SAMPLING RECORD

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Technician(s):**	Zeki Alikaya
Well ID:	LW-MW03	**Date:**	05/16/18
Initial Depth to Water (ft):	3.63	**Well Diameter (in):**	2.0
Total Depth of Well (ft):	15.58	**1 Casing Volume (gal):**	2.0
Method of Purging:	Low flow	**3 Casing Volumes (gal):**	5.9
Measuring Point (toc, tor, etc.):	Top of Riser	**Pump Intake Depth (feet):**	9.6/9.00 after recharge

Time	Water Level (feet)	Flow Rate (mL/min)	Cum. Volume (gal.)	Temp. (°C)	pH (SU)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
		Stabilization Criteria		±0.5°C	±0.1	±3%	±10%	±10%	±10% and <10 NTU	
14:20		200								Pumping/Purging Started
14:30	4.20	200	.5	13.14	7.00	3.44	1.25	171	443	Pale br
14:35	4.26	200	.75	13.52	6.94	3.48	1.28	159	315	Pale br
14:40	4.32	200	1	13.77	6.92	3.49	1.31	149	253	Saa
14:45	4.36	200	1.2	13.90	6.91	3.48	1.34	143	200	Saa
14:50	4.38	250	1.5	13.58	6.89	3.52	1.29	136	100	Clear
14:55	4.85	350	2	13.50	6.87	3.49	1.24	142	73.5	Clear
15:00	4.87	300	2.2	13.45	6.86	3.45	1.20	141	71.5	CLear
15:05	4.93	300	2.5	13.51	6.86	3.48	1.25	137	69.2	Clear
15:10	4.95	300	2.75	13.55	6.88	3.50	1.35	130	64.5	Clear
12:12	2.53									Water level 051718
12:15	2.71	200	3.00	12.89	7.05	2.94	1.65	129	74.5	Sample and clear

Stability Reached (Y/N): Other (some do not stabilize) If No, Provide Explanation Other (some do not stabilize) - Water level dropping too much and will let well recharge overnight.

Final Values:	Temp.	pH	SEC	DO	ORP	Turbidity
	12.89	**7.05**	**2.94**	**1.65**	**129**	**74.5**

Sample ID:	STWRT-LW-MW03	**Method of Sampling:**	Low flow
QA/QC Samples (Yes/No):	No	**Sample Date:**	05/17/18
Duplicate ID:	NA	**Sample Collection Time:**	12:15
Sample Container Type(s):	Hdpe	**Total Volume Purged (gal):**	3.66
Preservative(s):	Ice (4 °C)	**Sample Depth (ft):**	9.6/9.00 after recharge
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List	**Depth to Water After Sampling (ft):**	3.21

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N): Yes Calibrated Within Criteria (Y/N): Yes

Turbidity Meter, Water Quality Meter, Water Level Meter, Mega Monsoon Pump
Horiba U52 Wwodhy5x, Horiba U52 Wwodhy5x

Calculations:

Saturated well casing volume: V= Π(R^2)H*7.48 gal/ft^3

V=Volume (gal/ft)
Π = 3.14
R = well radius (ft) = (well diameter (in)/12 (in/ft))/2)
H = height of water column (ft)

V= Π(R^2)H*7.48 gal/ft^3
= Π * (2.0 (in)/12 (in/ft))/2)^2 * 11.95 * 7.48 gal/ft^3
= 2.0 gal.

Signature: [signature]

Notes:

Final depth to bottom 15.57. Sample clear

Name (print)**:** Zeki Alikaya

QA/QC'd by: **K. Doyle** **QA/QC Date:** **5/21/2018**

GROUNDWATER SAMPLING RECORD

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Technician(s):**	Zeki Alikaya
Well ID:	SS-MW01	**Date:**	05/17/18
Initial Depth to Water (ft):	7.45	**Well Diameter (in):**	2.0
Total Depth of Well (ft):	15.55	**1 Casing Volume (gal):**	1.3
Method of Purging:	Low flow	**3 Casing Volumes (gal):**	4.0
Measuring Point (toc, tor, etc.):	Top of Riser	**Pump Intake Depth (feet):**	11.5

Time	Water Level (feet)	Flow Rate (mL/min)	Cum. Volume (gal.)	Temp. (°C)	pH (SU)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, odor, etc.)
		Stabilization Criteria		±0.5°C	±0.1	±3%	±10%	±10%	±10% and <10 NTU	
10:30		200								Pumping/Purging Started
10:35	7.61	200	0.1	12.57	7.22	4.24	7.28	114	>1000	Very pale br
10:40	7.71	200	.5	12.41	7.20	4.13	5.22	131	720	Saa
10:45	7.69	200	.75	12.78	7.15	4.24	4.11	140	345	Saa
10:50	7.72	200	1.1	12.89	7.13	4.36	4.23	148	102	Clear
10:55	7.71	200	1.4	12.92	7.13	4.48	4.14	149	36.7	Clear
11:00	7.73	200	1.75	12.94	7.13	4.60	4.10	149	33.3	Clear
11:05	7.73	200	2.00	12.97	7.13	4.69	4.23	149	31.4	Clear
11:10	7.76	200	2.35	12.87	7.14	4.64	3.91	143	29.3	Clear
11:20	7.53									Recharge is back within 0.3'
11:24	7.57	200	2.5	12.66	7.20	4.62	4.04	149	27.1	Sample
Stability Reached (Y/N):			Other (some do not stabilize)			If No, Provide Explanation		Other (some do not stabilize) - Well is stable, drawdown just out of .3' limit at 11:10. Give 10 min to recharge. @11:20 water level at 7.53 ok to sample.		
			Final Values:	**12.66**	**7.20**	**4.62**	**4.04**	**149**	**27.1**	

Sample ID:	STWRT-SS-MW01	**Method of Sampling:**	Low flow
QA/QC Samples (Yes/No):	Yes DUP	**Sample Date:**	05/17/18
Duplicate ID:	STWRT-GW-DUP-001-051718	**Sample Collection Time:**	11:24
Sample Container Type(s):	Hdpe	**Total Volume Purged (gal):**	3.25
Preservative(s):	Ice (4 °C)	**Sample Depth (ft):**	11.5
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List	**Depth to Water After Sampling (ft):**	7.55

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N): Yes   Calibrated Within Criteria (Y/N): Yes

Turbidity Meter, Water Quality Meter, Water Level Meter, Mega Monsoon Pump
Horiba U52 Wwodhy5x, Horiba U52 Wwodhy5x

Calculations:

Saturated well casing volume: V= Π(R^2)H*7.48 gal/ft^3

V=Volume (gal/ft)
Π = 3.14
R = well radius (ft) = (well diameter (in)/12 (in/ft))/2)
H = height of water column (ft)

V= Π(R^2)H*7.48 gal/ft^3
= Π * (2.0 (in)/12 (in/ft))/2)^2 * 8.10 * 7.48 gal/ft^3
= 1.3 gal.

Signature: [signature]

Notes:

Final depth to bottom 15.53

Name (print)**:** Zeki Alikaya

QA/QC'd by: **K. Doyle**   **QA/QC Date:** **5/21/2018**

APPENDIX B

Water Quality Instrument Calibration Logs

WATER QUALITY SAMPLING INSTRUMENT CALIBRATION FORM

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations			**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006	**Date:**	05/16/18
Installation:	STWRT			**Calibration Start Time:**	13:18
Sample Technician(s):	Zeki Alikaya			**Calibration End Time:**	13:48

Readings Before Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
05/16/18	13:18	15.00	3.75	1.2	0.000	0.62	Na	376	Na	None
			7.01	Na						
			10.87	109						
				Na						

Readings After Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
05/16/18	13:48	15.00	4.00	0.0	0.000	0.00	--	240	--	None
			7.04	--						
			10.08	100p						
				--						

Calibration Materials Record:

pH Calibration Standards

Standard	Cal. Standard Lot #	Expiration Date
pH (4)	7gi837	09/30/19
pH (7)	8gb386	02/29/20
pH (10)	7gl670	12/31/19

Specific Electrical Conductance, Salinity, Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) Calibration Standards

Standard	Cal. Standard Lot #	Expiration Date
Spec. Conductance	7gl100	12/31/18
Salinity	Na	05/16/18
D.O.	2017010359	06/26/18
ORP	0547	10/31/21

Turbidity Standards

Standard	Cal. Standard Lot #	Expiration Date
10	17502171	01/19/19
20	Na	05/16/18
100	18085806	02/17/19
800	Na	05/16/18

Instruments (Manufacturer, Model, and Serial No.):

	Manufacturer/Model	Serial No
Water Quality Meter:	Horiba U-52	Wwodhy5x
Turbidity Meter:	Horiba U-52	Wwodhy5x

Calibrated Within Acceptance Criteria (Y/N): Yes

If No, Provide Explanation: NA

Notes: None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by:

QA/QC Date:

WATER QUALITY SAMPLING INSTRUMENT CALIBRATION FORM

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations			**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006	**Date:**	05/17/18
Installation:	STWRT			**Calibration Start Time:**	07:22
Sample Technician(s):	Zeki Alikaya			**Calibration End Time:**	07:54

Readings Before Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
05/17/18	07:23	15	4.02	0.0	1.42	10.19	Na	+244	Na	None
			7.00	Na						
			10.22	103						
				Na						

Readings After Calibration

Date	Time (24hr)	Temperature (°C)	pH (SU)	Turbidity (NTUs)	Specific Electrical Conductance (mS/cm)	D.O. (mg/L)	Salinity (%)	ORP/Eh (mV)	Barometric Pressure (mm Hg)	Comments
05/17/18	07:54	15	4.00	0.0	1.41	10.74	--	+240	--	None
			7.04	--						
			10.12	100						
				--						

Calibration Materials Record:

pH Calibration Standards

Standard	Cal. Standard Lot #	Expiration Date
pH (4)	7gi837	09/30/19
pH (7)	8gb386	02/29/20
pH (10)	7gl670	12/31/19

Specific Electrical Conductance, Salinity, Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) Calibration Standards

Standard	Cal. Standard Lot #	Expiration Date
Spec. Conductance	7gl100	12/31/18
Salinity	Na	05/17/18
D.O.	2017010359	06/26/18
ORP	0547	10/31/21

Turbidity Standards

Standard	Cal. Standard Lot #	Expiration Date
10	17502171	01/19/19
20	Na	05/17/18
100	18085806	02/17/19
800	Na	05/17/18

Instruments (Manufacturer, Model, and Serial No.):

	Manufacturer/Model	Serial No
Water Quality Meter:	Horiba U-52	Wwodhy5x
Turbidity Meter:	Horiba U-52	Wwodhy5x

Calibrated Within Acceptance Criteria (Y/N): Yes

If No, Provide Explanation: NA

Notes: None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by: K. Doyle **QA/QC Date:** 21-May-18

APPENDIX C

Surface Water Sampling Logs

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/16/18
Location ID:	RP SW21	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/16/18
Sample ID:	STWRT-RPSW21	**Sample Collection Time:**	10:30
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	STWRT-SW-DUP-001	**Surface Water Depth (ft):**	2
Sample Container Type(s):	Hdpe, amber glass	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C), H2SO4	Stream, Flowing, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List, TOC (EPA 9060)		

Location Image:

Caption: RPSW 21

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N): NA

Calibrated Within Criteria (Y/N): NA

Plastic Sampling Cup

,

Notes:

None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	Rpt sw01	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

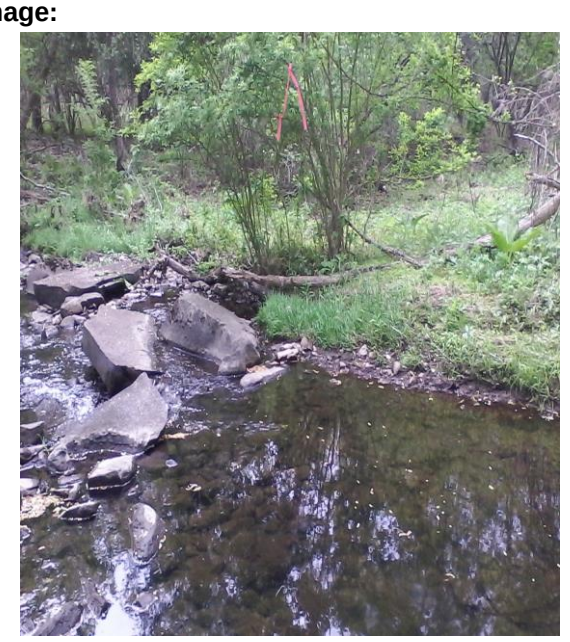
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
15:45	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.5 - 1	**Sample Date:**	05/15/18
Sample ID:	STWRT-RPTSW01	**Sample Collection Time:**	15:45
MS/MSD Collected:	Yes	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	1.5
Sample Container Type(s):	Hdpe	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C)	Stream, Flowing, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List		

Location Image:



Caption: Rpt sw01

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:**

Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	Rpt sw02	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
14:50	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.5 - 1	**Sample Date:**	05/15/18
Sample ID:	STWRT	**Sample Collection Time:**	14:50
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	2
Sample Container Type(s):	Hdpe, amber glass	**Water Body and Water Quality Characteristics:**	
Preservative(s):	HCL, Ice (4 °C), H2SO4	Stream, Flowing, Clear	
Analysis/Method(s):	UCMR3 List		

Location Image:

Caption: Rpt sw02

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	Rpt sw03	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
14:25	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.5 - 1	**Sample Date:**	05/15/18
Sample ID:	STWRT-RPTSW03	**Sample Collection Time:**	14:25
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	4
Sample Container Type(s):	Hdpe, amber glass	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C), H2SO4	Stream, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List, TOC (EPA 9060)		

Location Sketch:

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:**

Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	Sssw01	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

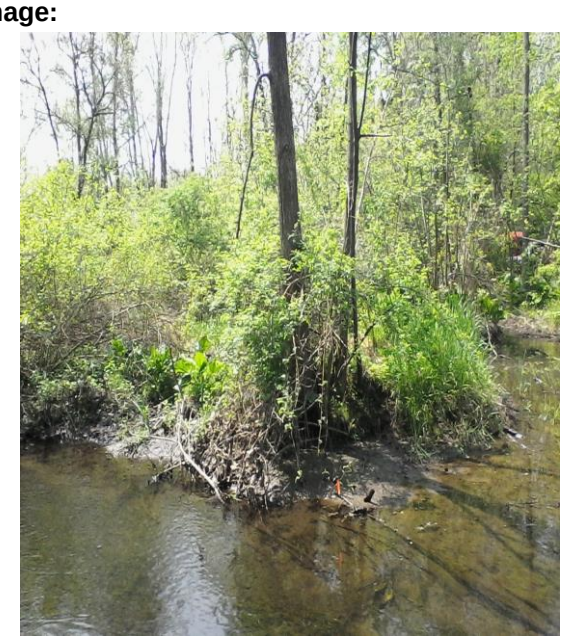
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
11:35	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/15/18
Sample ID:	STWRT-SSSW01	**Sample Collection Time:**	11:35
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	1
Sample Container Type(s):	Hdpe	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C), NA	Stream, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List		

Location Image:



Caption: Sssw01

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by: **QA/QC Date:**

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	SSSW02	**Northing/Easting:**	41.485652/-74.082162
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

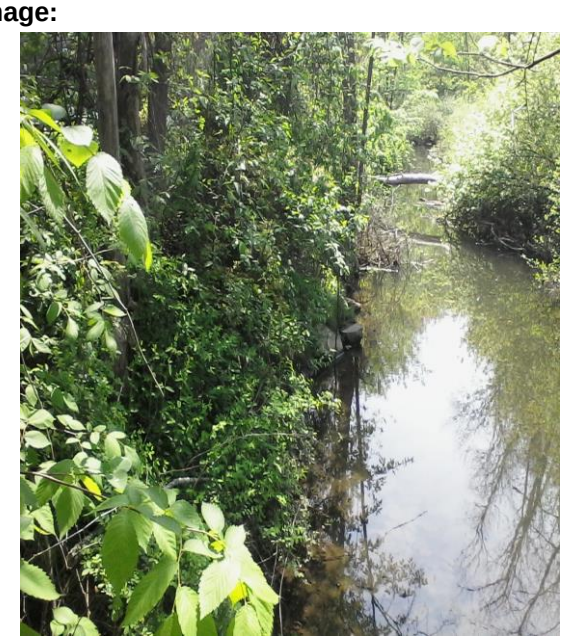
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
11:20	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/15/18
Sample ID:	STWRT-SSSW02	**Sample Collection Time:**	11:20
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	1
Sample Container Type(s):	Hdpe	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C)	Stream, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List		

Location Image:



Caption: Sssw02

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:**

Zeki Alikaya

QA/QC'd by: **QA/QC Date:**

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	SSSW-03	**Northing/Easting:**	41.485259/-74.079082
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

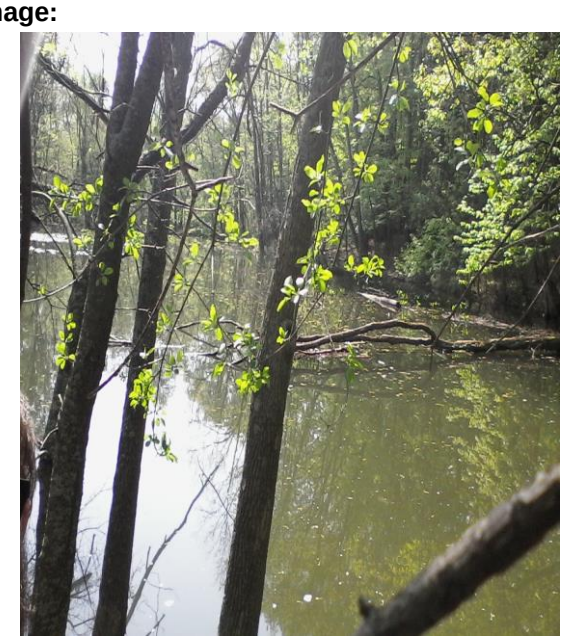
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
10:10	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/15/18
Sample ID:	STWRT-SSSW03-051518	**Sample Collection Time:**	10:10
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	1.5
Sample Container Type(s):	Hdpe glass amber	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C), H2SO4, NA		
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List, TOC (EPA 9060)	Stream	

Location Image:



Caption: Sssw-03

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup

,

Notes:

None

Signature:

Name (print)**:**

Zeki Alikaya

QA/QC'd by: **QA/QC Date:**

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	SSSW-04	**Northing/Easting:**	41.48442/-74.07686
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

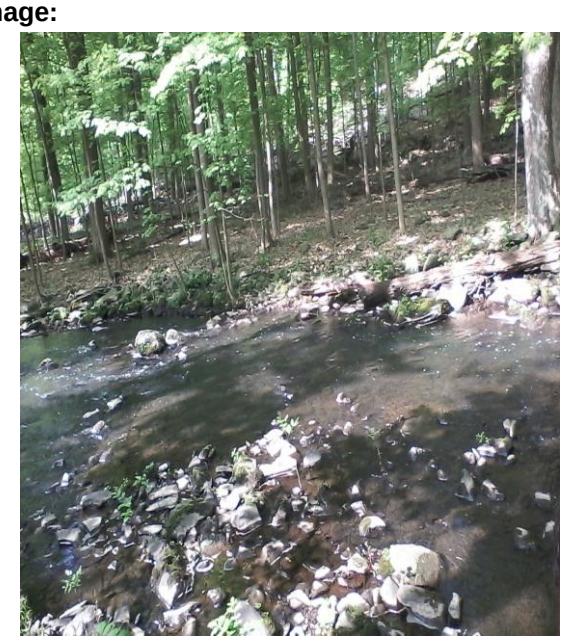
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
09:15	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/15/18
Sample ID:	STWRT-SSSW04-051518	**Sample Collection Time:**	09:15
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab sample
Duplicate ID:	NA	**Surface Water Depth (ft):**	1
Sample Container Type(s):	Hdpe	**Water Body and Water Quality Characteristics:**	
Preservative(s):	NA		Stream
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List		

Location Image:



Caption: Sssw04 location

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/15/18
Location ID:	LWSW 01	**Northing/Easting:**	41.48586/-74.07791
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
10:50	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.1 - 0.25	**Sample Date:**	05/15/18
Sample ID:	STWRT-LWSW01	**Sample Collection Time:**	10:50
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	.25
Sample Container Type(s):	Hdpe, amber glass jar	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C), NA	Stream	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List, TOC (EPA 9060)		

Location Image:

Caption: LWSW 01

Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:** Zeki Alikaya

QA/QC'd by:

QA/QC Date:

SAMPLE COLLECTION LOG
SEDIMENT / SURFACE SOIL / SURFACE WATER

Project Name:	Phase 1 Regional Site Inspections for Per-Fluorinated Compounds at Multiple Air National Guard Installations	**Project Number:**	291330006
Contract:	W9133L-14-D-0002	**Task Order:**	0006
Installation:	STWRT	**Date:**	05/16/18
Location ID:	LWSW02	**Northing/Easting:**	Not Collected
Technician(s):	Zeki Alikaya		

SEDIMENT SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE SOIL SAMPLE

Description

NAME (USCS Symbol): color, moisture, % by wt, plasticity, dilatancy, toughness, dry strength,consistency

NA

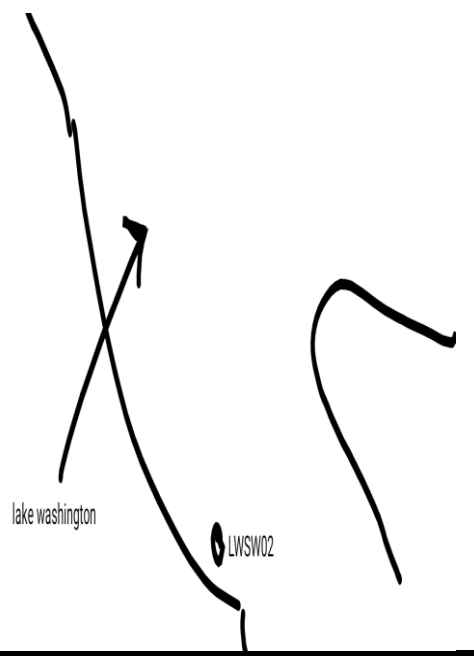
Sample Depth (ft):	NA	**Sample ID:**	NA
MS/MSD Collected:	NA	**Sample Date:**	NA
Duplicate ID:	NA	**Sample Collection Time:**	NA
Sample Container Type(s):	NA	**Sample Collection Methods:**	NA
Preservative(s):	NA	**Analysis/Method(s):**	NA

SURFACE WATER SAMPLE

Time	Intake Depth (in)	Temp. (°C)	pH (units)	Specific Electrical Conductance (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comments/Observations During Purging (color, sediment, etc.)
09:10	NA	NA	NA	NA	NA	NA	NA	NA

Sample Depth (ft):	0.25 - 0.5	**Sample Date:**	05/16/18
Sample ID:	STWRT-LWSW02	**Sample Collection Time:**	09:10
MS/MSD Collected:	No	**Sample Collection Methods:**	Grab
Duplicate ID:	NA	**Surface Water Depth (ft):**	1
Sample Container Type(s):	Hdpe	**Water Body and Water Quality Characteristics:**	
Preservative(s):	Ice (4 °C)	Lake, Flowing, Clear	
Analysis/Method(s):	PFAS (EPA 537-modified), UCMR3 List		

Location Sketch:



Instruments (Manufacturer, Model, and Serial No.):

Equipment Calibrated (Y/N):	NA
Calibrated Within Criteria (Y/N):	NA

Plastic Sampling Cup
,

Notes:

None

Signature:

Name (print)**:**

Zeki Alikaya

QA/QC'd by:

QA/QC Date:

APPENDIX D

Data Validation Report

DATA VALIDATION REPORT

FY16 Phase 1 Regional Site Inspections for Perfluorinated Compounds

Multiple Air National Guard Installations

Samples Collected Between 15 and 17 May 2018

Stewart International Airport, New Windsor, New York

Prepared for:

National Guard Bureau

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824
(978) 692-9090

July 2018

Project No. 291330006.01****

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
%	percent
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
CCV	Continuing Calibration Verification
COC	Chain of Custody
DL	Detection Limit
DoD	Department of Defense
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICV	Initial Calibration Verification
ID	Identification
LC/MS/MS	Liquid Chromatography/Tandem Mass Spectrometry
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOQ	Limit of Quantification
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutanesulfonic Acid
PFHpA	Perfluoroheptanoic Acid
PFHxS	Perfluorohexanesulfonic Acid
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual for Environmental Laboratories
RPD	Relative Percent Difference
TestAmerica	TestAmerica Laboratories, Inc. - Denver
TOC	Total Organic Carbon
Vista	Vista Analytical Laboratory

DATA VALIDATION REPORT
FY16 PHASE 1 REGIONAL SITE INSPECTIONS FOR PERFLUORINATED COMPOUNDS

Multiple Air National Guard Installations
Samples Collected Between 15 and 17 May 2018
Stewart International Airport, New Windsor, New York

1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) collected 17 aqueous samples (including 2 field duplicates and 1 equipment blank) between 15 and 17 May 2018, from the Stewart International Airport located in Orange County, New York. Amec Foster Wheeler submitted the samples to Vista Analytical Laboratory (Vista), located in El Dorado Hills, California, where they were received on 19 May 2018. Vista assigned the samples to sample delivery group 1801005. Vista analyzed the samples for per- and polyfluoroalkyl substances (PFAS) by modified United States Environmental Protection Agency (EPA) Method 537. Amec Foster Wheeler also submitted the samples to TestAmerica Laboratories Inc. (TestAmerica), located in Arvada, Colorado, where they were received on 19 May 2018. TestAmerica assigned the samples to sample delivery group 280-109977-1. TestAmerica analyzed the samples for Total Organic Carbon (TOC) by modified EPA Method 9060A. A list of these samples by field sample identification (ID), sample collection date, sample matrix, and laboratory sample ID is presented in Table 1.

2.0 DATA VALIDATION METHODOLOGY

Amec Foster Wheeler performed EPA Stage 4 validation on 10 percent (%) of the field samples and EPA Stage 2B validation on the remaining field samples associated with this sampling event, as indicated on Table 1. The Stage 4 validation includes review of the quality control (QC) results in the laboratory's analytical report and reported on QC summary forms as well as recalculation checks and review of the instrument raw data outputs. The Stage 2B validation includes review of the QC results in the laboratory's analytical report and reported on QC summary forms with no review of the associated raw data. Data from equipment and field blanks did not undergo validation because results from these samples are only used to assess data usability for field samples. This data validation has been performed in general accordance with:

- Amec Foster Wheeler, 2017. Final Quality Assurance Project Plan (QAPP), Revision 01. FY16 Phase 1 Regional Site Inspections for Perfluorinated Compounds, Multiple Air

National Guard Installations. Contract #: W9133L-14-D-002, Delivery Order 0006, July 2017.

- Department of Defense (DOD), 2017. DoD Quality Systems Manual for Environmental Laboratories (QSM), Version 5.1. January 2017.

- EPA, 2009. Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS), Version 1.1, September 2009. EPA Document #: EPA/600/R-08/092.

The data were reviewed following Amec Foster Wheeler's general data validation guidelines and using QAPP-specified QC requirements.

The laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

- Data package and electronic data deliverable completeness;
- Laboratory case narrative review;
- Chain of custody (COC) compliance;
- Holding time compliance;
- QC sample frequency;
- Initial calibration (ICAL), initial calibration verification (ICV), and continuing calibration verification (CCV) compliance with method-specified criteria;
- Presence or absence of laboratory contamination as demonstrated by laboratory blanks;
- Accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control sample (LCS), and matrix spike (MS) samples;
- Internal standard recoveries;
- Analytical precision as relative percent difference (RPD) of analyte concentration between laboratory duplicates or MS/MS duplicate (MSD);

- Sampling and analytical precision as RPD of analyte concentration between field duplicates;
- Assessment of field contamination as demonstrated by field and trip blanks;
- Insofar as possible, the degree of conformance to method requirements and good laboratory practices.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during this data quality review are presented below.

3.1 LABORATORY CONTROL SAMPLE RECOVERIES

LCSs and LCS duplicates (LCSDs) are aliquots of analyte-free matrices that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked matrix is then processed through the same analytical procedures as the samples it accompanies. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference-free matrix.

3.2 MATRIX SPIKE RECOVERIES

MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are an indication of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.

3.3 BLANK CONCENTRATIONS

Blank samples are aliquots of analyte free matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results.

Equipment blanks are prepared by passing analyte-free water through or over sample collection equipment and collecting the water in sample containers. Equipment blanks are analyzed for the analytical suite required for the project. Equipment blanks are used to monitor for possible sample contamination during the sample collection process and serve as a check on the effectiveness of field decontamination procedures.

Laboratory blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in laboratory blanks.

Laboratory and equipment blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in blanks.

When PFAS target analytes are detected in blanks, analyte concentrations in the associated samples less than 10 times the concentration detected in the blank will be B qualified. When any other target analytes are detected in blanks, analyte concentrations in the associated samples less than 5 times the concentration detected in the blank will be B qualified.

3.4 LABORATORY AND FIELD DUPLICATES

Laboratory and field duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis and/or sampling precision at the time of collection.

4.0 DEFINITIONS OF QUALIFIERS THAT MAY BE USED DURING DATA VALIDATION

B The analyte was detected in the sample and an associated blank and the concentration detected in the sample was less than 10 times the concentration detected in the blank.

U The analyte was analyzed for, but was not detected.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Q The analyte was B qualified because of a detection in an associated blank and additionally J qualified because of an additional QC issue.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

5.0 QUALIFICATION REASON CODES

Amec Foster Wheeler applied the following reason code to the data during validation:

MSL Matrix spike recovery less than lower control limit.

TR Detected concentration is less than the limit of quantitation (LOQ).

6.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

The samples were received at the laboratories under proper COC, intact, properly preserved, and at temperatures less than the QAPP-specified maximum of 10 degrees Celsius for PFAS and less than the method-specified maximum of 6 degrees Celsius for TOC, with the following exceptions:

- One 250mL H_2SO_4 preserved container containing sample STWRT-RPSW21_051618 was received at the laboratory with a cracked lid. The sample did not leak or appear to be compromised.

- The laboratory noted a number of discrepancies between sample names recorded on container labels and the COC. All labeling discrepancies were resolved with Amec Foster Wheeler and correct information is presented in the final laboratory data deliverables.

7.0 SPECIFIC DATA VALIDATION FINDINGS

Results from these samples may be considered usable with the limitations and exceptions described Sections 7.1 through 8.0.

7.1 PER- AND POLYFLUOROALKYL SUBSTANCES BY MODIFIED EPA METHOD 537

PFAS results generated by Vista are usable with the limitations described in Sections 7.1.1 through 7.1.11.

7.1.1 Holding Times

The aqueous samples were extracted for PFAS within the QAPP-specified maximum holding time of 14 days from sample collection and the extracts were analyzed within the QAPP-specified maximum hold time of 28 days from extraction.

7.1.2 Initial Calibrations

The ICALs associated with the analysis of these samples met the QSM 5.1-specified criteria of relative standard deviations of response factors less than 20%, coefficients of determination greater than or equal to 0.99, and all calibration points calculate to 70 to 130% of their true concentrations.

7.1.3 Initial Calibration Verification

ICV recoveries were within the method-specified 70 to 130% limits.

7.1.4 Continuing Calibration Verification

CCV recoveries were within the method-specified 70 to 130% limits.

7.1.5 Laboratory Blanks

PFAS were not detected in the laboratory blanks associated with these samples.

7.1.6 Equipment Blanks

PFAS were not detected in the equipment blanks associated with these samples.

7.1.7 Laboratory Control Sample Accuracy

LCS recoveries were within the QAPP-specified limits of: 60 to 130% for perfluorobutanesulfonic acid (PFBS); 70 to 130% for perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), and perfluorooctanesulfonic acid (PFOS); and 50 to 130% for perfluorononanoic acid (PFNA).

7.1.8 Matrix Spikes/ Matrix Spike Duplicates

Vista performed MS and MSD analyses on samples STWRT-LW-MW02 and STWRT-RPTSW01. Recoveries were within the QAPP-specified limits of: 60 to 130% for PFBS; 70 to 130% for PFHpA,

PFHxS, PFOA, and PFOS; and 50 to 130% for PFNA, and precision values were less than the QAPP-specified maximum of 30%.

- J Due to a software flaw, Vista is calculating RPDs based on MS and MSD recoveries instead of concentrations detected in the MS and MSD. Amec Foster Wheeler recalculated RPDs between MS and MSD results to confirm that precision values were within limits.

7.1.9 Surrogate Recoveries

Vista uses labeled internal standards, which are added before extraction, to quantify their analytical results and does not add surrogates to the samples.

7.1.10 Internal Standard Recoveries

Internal standard areas were within the QAPP-specified limits of 50 to 150% of the average area counts measured during the initial calibration.

7.1.11 Data Reporting and Analytical Procedures

Vista J qualified analytes with concentrations between the detection limit (DL) and the LOQ. Amec Foster Wheeler agrees that these results are quantitatively uncertain and has maintained Vista's J qualifiers. (Qualifier and reason code: J-TR)

7.2 TOTAL ORGANIC CARBON BY EPA METHOD 9060A

TOC results generated by TestAmerica are usable with the limitations described in Sections 7.2.1 through 7.2.8.

7.2.1 Holding Times

The aqueous samples were analyzed within the method specified maximum holding time of 28 days from sample collection.

7.2.2 Initial Calibrations

The ICALs associated with the analysis of these samples met the laboratory criteria of relative standard deviations of response factors less than 20%, coefficients of determination greater than or equal to 0.99, and all calibration points calculate to 70 to 130% of their true concentrations.

7.2.3 Initial Calibration Verification

ICV recoveries were within the laboratory-specified limits of 90 to 110% for aqueous samples.

7.2.4 Continuing Calibration Verification

CCV recoveries were within the laboratory-specified limits of 90 to 110% for aqueous samples.

7.2.5 Laboratory Blanks

TOC was not detected in the laboratory blanks associated with these samples with the following exceptions:

- TOC was detected in a calibration blank associated with samples STWRT-LWSW01_051518, STWRT-RPTSW02_051518, STWRT-RPTSW03_051518 and STWRT-SSSW03. All associated sample results were >5X the blank concentration and not impacted. No qualifications are necessary.

- TOC was detected in several calibration blanks associated with sample STWRT-RPSW21_051618. The sample result was > 5X the blank concentration and not impacted. No qualifications are necessary.

7.2.6 Laboratory Control Sample Accuracy

LCS recoveries were within the laboratory specified limits of 88-112% for aqueous samples.

7.2.7 Matrix Spike/ Matrix Spike Duplicates

TestAmerica performed MS and MSD analyses on sample STWRT-RPTSW03_051518. Recoveries were within the laboratory established limits of 88-112%, with the exception listed below.

- TOC recovery was low at 84% in the MS and 84% in the MSD in sample STWRT-RPTSW03_051518. Amec Foster Wheeler J qualified the TOC result in sample STWRT-RPTSW03_051518 due to the potential low bias. (Qualifier and reason code: J-MSL).

7.2.8 Data Reporting and Analytical Procedures

All sample result concentrations were greater than the detection limit (DL) and no results were qualified as estimate between the DL and the LOQ.

8.0 FIELD DUPLICATE RESULTS

Amec Foster Wheeler collected field duplicates with samples:

- STWRT-RPSW21 (STWRT-SW-DUP-001-051618) and

- STWRT-SS-MW01 (STWRT-GW-DUP-001-051718)

Detected results and RPDs for the field duplicates are summarized in Table 2. Precision values were within the QAPP-specified limits of less than 30% RPD or the difference between analytical results less than the LOQ.

9.0 SUMMARY AND CONCLUSIONS

Amec Foster Wheeler evaluated a total of 101 data records from field samples during the validation. Amec Foster Wheeler J qualified 32 records (32%) as estimated values because of low MS recovery and/or analyte concentrations outside the instrument's calibration range. Qualified data are summarized in Table 3.

REFERENCES

Amec Foster Wheeler, 2017. Final QAPP, Revision 01. FY16 Phase 1 Regional Site Inspections for Perfluorinated Compounds, Multiple Air National Guard Installations. Contract #: W9133L-14-D-002, Delivery Order 0006, July 2017.

DOD, 2017. DoD Quality Systems Manual for Environmental Laboratories, Version 5.1. January 2017.

EPA, 2009. Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and LC/MS/MS, Version 1.1, September 2009. EPA Document #: EPA/600/R-08/092.

TABLES

Table 1
Field Samples Submitted to Vista Analytical Laboratory
Stewart International Airport, New Windsor, New York
FY16 Phase 1 Regional Site Inspection for Per-Fluorinated Compounds

Sample Identification	Collection Date	Sample Matrix	Lab Sample ID	Notes
STWRT-LW-MW02_051718	17-May-18	Ground Water	1801005-01	MS/MSD
STWRT-LWSW01_051518_V	15-May-18	Surface Water	1801005-02	
STWRT-LWSW02_051618	16-May-18	Surface Water	1801005-03	
STWRT-RPSW21_051618_V	16-May-18	Surface Water	1801005-04	
STWRT-RPTSW01_051518	15-May-18	Surface Water	1801005-05	MS/MSD
STWRT-RPTSW02_051518_V	15-May-18	Surface Water	1801005-06	
STWRT-RPTSW03_051518_V	15-May-18	Surface Water	1801005-07	
STWRT-SSSW01_051518	15-May-18	Surface Water	1801005-08	
STWRT-SSSW02_051518	15-May-18	Surface Water	1801005-09	
STWRT-SSSW03_051518_V	15-May-18	Surface Water	1801005-10	
STWRT-SSSW04_051518	15-May-18	Surface Water	1801005-11	
STWRT-SW-DUP-001-051618	16-May-18	Surface Water	1801005-12	Field duplicate of STWRT-RPSW21
STWRT-EB-007-ZA-051718	17-May-18	Water	1801005-13	Equipment Blank
STWRT-GW-DUP-001-051718	17-May-18	Ground Water	1801005-14	Field duplicate of STWRT-SS-MW01
STWRT-LW-MW01	17-May-18	Ground Water	1801005-15	
STWRT-LW-MW03_051718	17-May-18	Ground Water	1801005-16	Stage 4 Validation
STWRT-SS-MW01_051718	17-May-18	Ground Water	1801005-17	Stage 4 Validation
STWRT-LWSW01_051518	15-May-18	Surface Water	280-109977-1	Stage 4 Validation
STWRT-RPSW21_051618	16-May-18	Surface Water	280-109977-2	
STWRT-RPTSW02_051518	15-May-18	Surface Water	280-109977-3	
STWRT-RPTSW03_051518	15-May-18	Surface Water	280-109977-4	
STWRT-SSSW03_051518	15-May-18	Surface Water	280-109977-5	

ID = identification
MS/MSD = matrix spike/matrix spike duplicate analyses performed on this sample

Table 2
Field Duplicate Detections
Stewart International Airport, New Windsor, New York
FY16 Phase 1 Regional Site Inspection for Per-Fluorinated Compounds

Analyte	LOQ	Primary Sample		Field Duplicate		Units	RPD	Notes
STWRT-RPSW21 (STWRT-SW-DUP-001-051618)								
PFBS	0.008585	0.0111		0.012		µg/L	8%	
PFHpA	0.008585	0.0273		0.0249		µg/L	9%	
PFHxS	0.008585	0.0758		0.0801		µg/L	6%	
PFOA	0.008585	0.0358		0.0331		µg/L	8%	
PFOS	0.008585	0.322		0.322		µg/L	0%	
PFNA	0.008585	0.00984		0.00921		µg/L	7%	
STWRT-SS-MW01 (STWRT-GW-DUP-001-051718)								
PFBS	0.00810	0.00359	J	0.00561	J	µg/L	44%	± LOQ
PFHpA	0.00810	0.00365	J	0.00366	J	µg/L	0%	
PFHxS	0.00810	0.00616	J	0.00705	J	µg/L	13%	
PFOA	0.00810	0.0091		0.00784	J	µg/L	15%	
PFOS	0.00810	0.00766	J	0.00567	J	µg/L	30%	
PFNA	0.00810	0.00216	U	0.00225	U	µg/L	NC	

Notes:

µg/L = micrograms per liter
LOQ = limit of quantitation
NC = not calculable
RPD = relative percent difference
TOC = Total Organic Carbon
PFBS = perfluorobutanesulfonic acid
PFHpA = perfluoroheptanoic acid
PFHxS = perfluorohexanesulfonic acid
PFNA = perfluorononanioic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctanesulfonic acid

Qualifier Definitions:

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for, but was not detected

Reason Codes:

± LOQ = The difference between analyte concentrations is less than the LOQ, indicating acceptable analytical precision.

Table 3
Qualifiers Added During Validation
Stewart International Airport, New Windsor, New York
FY16 Phase 1 Regional Site Inspection for Per-Fluorinated Compounds

Sample Identification	SDG	Analyte	Results	Units	Validation Qualifiers and Reason Codes	
STWRT-LW-MW02_051718	1801005	PFBS	0.00326	µg/L	J	TR
STWRT-LW-MW02_051718	1801005	PFHPA	0.00335	µg/L	J	TR
STWRT-LW-MW02_051718	1801005	PFHXS	0.00315	µg/L	J	TR
STWRT-LW-MW02_051718	1801005	PFOA	0.00502	µg/L	J	TR
STWRT-LW-MW02_051718	1801005	PFOS	0.00519	µg/L	J	TR
STWRT-LWSW01_051518_V	1801005	PFBS	0.00272	µg/L	J	TR
STWRT-LWSW01_051518_V	1801005	PFHPA	0.00581	µg/L	J	TR
STWRT-LWSW01_051518_V	1801005	PFOA	0.00559	µg/L	J	TR
STWRT-SSSW01_051518	1801005	PFBS	0.00388	µg/L	J	TR
STWRT-SSSW01_051518	1801005	PFHPA	0.00271	µg/L	J	TR
STWRT-SSSW01_051518	1801005	PFOA	0.00347	µg/L	J	TR
STWRT-SSSW02_051518	1801005	PFBS	0.00716	µg/L	J	TR
STWRT-SSSW02_051518	1801005	PFNA	0.00317	µg/L	J	TR
STWRT-SSSW03_051518_V	1801005	PFBS	0.00752	µg/L	J	TR
STWRT-SSSW04_051518	1801005	PFBS	0.00708	µg/L	J	TR
STWRT-SSSW04_051518	1801005	PFNA	0.00397	µg/L	J	TR
STWRT-GW-DUP-001-051718	1801005	PFBS	0.00561	µg/L	J	TR
STWRT-GW-DUP-001-051718	1801005	PFHPA	0.00366	µg/L	J	TR
STWRT-GW-DUP-001-051718	1801005	PFHXS	0.00705	µg/L	J	TR
STWRT-GW-DUP-001-051718	1801005	PFOA	0.00784	µg/L	J	TR
STWRT-GW-DUP-001-051718	1801005	PFOS	0.00567	µg/L	J	TR
STWRT-LW-MW01	1801005	PFBS	0.00658	µg/L	J	TR
STWRT-LW-MW01	1801005	PFHPA	0.00453	µg/L	J	TR
STWRT-LW-MW01	1801005	PFHXS	0.00634	µg/L	J	TR
STWRT-LW-MW01	1801005	PFOS	0.00304	µg/L	J	TR
STWRT-LW-MW03_051718	1801005	PFNA	0.00829	µg/L	J	TR
STWRT-LW-MW03_051718	1801005	PFBS	0.00407	µg/L	J	TR
STWRT-SS-MW01_051718	1801005	PFHPA	0.00356	µg/L	J	TR
STWRT-SS-MW01_051718	1801005	PFHXS	0.00616	µg/L	J	TR
STWRT-SS-MW01_051718	1801005	PFOS	0.00766	µg/L	J	TR
STWRT-SS-MW01_051718	1801005	PFBS	0.00359	µg/L	J	TR
STWRT-RPTSW03_051518	280-109977-1	TOC	4.4	mg/L	J	MSL

Notes:

mg/L = milligrams per liter
µg/L = micrograms per liter

PFBS = perfluorobutanesulfonic acid
PFHpA = perfluoroheptanoic acid
PFHxS = perfluorohexanesulfonic acid
PFNA = perfluorononanoic acid
PFOA = perfluorooctanoic acid
PFOS = perfluorooctanesulfonic acid

Qualifier Definitions:

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Reason Code Definitions:

MSL = Matrix spike recovery less than lower control limit
TR = Detected concentration is less than the limit of quantitation

APPENDIX E

Laboratory Analytical Reports

June 14, 2018

Vista Work Order No. 1801005

Ms. Denise King
Wood Environment & Infrastructure
271 Mill Road
Chelmsford, MA 01824

Dear Ms. King,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on May 19, 2018. This sample set was analyzed on a rush turn-around time, under your Project Name 'Stewart ANGB/ 291330006'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director

Vista Work Order No. 1801005
Case Narrative

Sample Condition on Receipt:

Five groundwater samples, ten surface water samples and one QC water sample were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

PFAS Isotope Dilution Method

The samples contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537).

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The OPR recoveries were within the method acceptance criteria.

The extracts of samples "STWRT-RPTSW03", "STWRT-SSSW01" and "STWRT-EB-007-ZA-051718", as well as the Method Blank and OPR, were re-injected because one or more Injection Internal Standard Analyte response areas were outside of criteria. The results were similar in the second injections. The results from the original injections have been reported.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

As requested, MS/MSDs were performed on samples "STWRT-LW-MW02" and "STWRT-RPTSW01". The MS/MSD recoveries and RPDs were within the acceptance criteria.

TABLE OF CONTENTS

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1801005-01	STWRT-LW-MW02	MS/MSD17-May-18 09:23	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-02	STWRT-LWSW01	15-May-18 10:50	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-03	STWRT-LWSW02	16-May-18 09:10	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-04	STWRT-RPSW21	16-May-18 10:30	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-05	STWRT-RPTSW01	MS/MSD15-May-18 15:45	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-06	STWRT-RPTSW02	15-May-18 14:50	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-07	STWRT-RPTSW03	15-May-18 14:25	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-08	STWRT-SSSW01	15-May-18 11:35	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-09	STWRT-SSSW02	15-May-18 11:20	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-10	STWRT-SSSW03	15-May-18 10:10	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-11	STWRT-SSSW04	15-May-18 09:15	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-12	STWRT-SW-DUP-001-051618	16-May-18 00:00	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-13	STWRT-EB-007-ZA-051718	17-May-18 14:00	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-14	STWRT-GW-DUP-001-051718	17-May-18 00:00	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-15	STWRT-LW-MW01	17-May-18 13:35	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL
1801005-16	STWRT-LW-MW03	17-May-18 12:15	19-May-18 09:20	HDPE Bottle, 125 mL

Vista Project: 1801005

Client Project: Stewart ANGB/ 291330006

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1801005-16	STWRT-LW-MW03	17-May-18 12:15	19-May-18 09:20	HDPE Bottle, 125 mL
1801005-17	STWRT-SS-MW01	17-May-18 11:24	19-May-18 09:20	HDPE Bottle, 125 mL
				HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Aqueous

Laboratory Data

Lab Sample: B8E0195-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
PFHpA	375-85-9	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
PFHxS	355-46-4	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
PFOA	335-67-1	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
PFOS	1763-23-1	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
PFNA	375-95-1	ND	0.00109	0.00250	0.00400		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	104	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
13C4-PFHpA	IS	97.2	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
18O2-PFHxS	IS	105	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
13C2-PFOA	IS	101	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
13C8-PFOS	IS	104	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1
13C5-PFNA	IS	88.9	50 - 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:32	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: OPR — **PFAS Isotope Dilution Method**

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Aqueous

Laboratory Data

Lab Sample: B8E0195-BS1
Column: BEH C18

Analyte	CAS Number	Amt Found (ug/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0395	0.0400	98.8	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
PFHpA	375-85-9	0.0373	0.0400	93.3	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
PFHxS	355-46-4	0.0473	0.0400	118	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
PFOA	335-67-1	0.0398	0.0400	99.4	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
PFOS	1763-23-1	0.0391	0.0400	97.7	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
PFNA	375-95-1	0.0354	0.0400	88.5	70 - 130		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1

Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.2	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
13C4-PFHpA	IS	92.0	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
18O2-PFHxS	IS	86.4	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
13C2-PFOA	IS	88.7	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
13C8-PFOS	IS	89.5	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1
13C5-PFNA	IS	90.6	50- 150		B8E0195	23-May-18	0.250 L	11-Jun-18 08:22	1

Sample ID: STWRT-LW-MW02 **PFAS Isotope Dilution Method**

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Groundwater
Date Collected: 17-May-18 09:23

Laboratory Data

Lab Sample: 1801005-01
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00326	0.00231	0.00530	0.00848	J	B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
PFHpA	375-85-9	0.00335	0.00231	0.00530	0.00848	J	B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
PFHxS	355-46-4	0.00315	0.00231	0.00530	0.00848	J	B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
PFOA	335-67-1	0.00502	0.00231	0.00530	0.00848	J	B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
PFOS	1763-23-1	0.00519	0.00231	0.00530	0.00848	J	B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
PFNA	375-95-1	ND	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	103	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
13C4-PFHpA	IS	93.7	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
18O2-PFHxS	IS	77.3	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
13C2-PFOA	IS	91.1	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
13C8-PFOS	IS	93.6	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1
13C5-PFNA	IS	90.3	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 17:43	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-LW-MW02 **PFAS Isotope Dilution Method**

Name:	Wood Environment & Infrastructure	Lab Sample:	B8E0195-MS1/B8E0195-MSD1	Source Lab Sample:	1801005-01
Project:	Stewart ANGB/ 291330006	QC Batch:	B8E0195	Date Extracted:	23-May-18
Matrix:	Aqueous	Samp Size:	0.119/0.118 L	Column:	BEH C18

Analyte	CAS Number	Sample (ug/L)	MS (ug/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ug/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	375-73-5	0.00326	0.0878	0.0842	100		0.0838	0.0845	95.3	4.81		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1
PFHpA	375-85-9	0.00335	0.0849	0.0842	96.9		0.0879	0.0845	100	3.15		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1
PFHxS	355-46-4	0.00315	0.0869	0.0842	99.5		0.0880	0.0845	100	0.501		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1
PFOA	335-67-1	0.00502	0.0831	0.0842	92.8		0.0803	0.0845	89.1	4.07		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1
PFOS	1763-23-1	0.00519	0.0814	0.0842	90.4		0.0788	0.0845	87.2	3.60		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1
PFNA	375-95-1	ND	0.0957	0.0842	114		0.0946	0.0845	112	1.77		70-130	30	29-May-18 15:07	1	29-May-18 14:54	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	104		102		50-150	29-May-18 15:07	1	29-May-18 14:54	1
13C4-PFHpA	IS	92.8		97.4		50-150	29-May-18 15:07	1	29-May-18 14:54	1
18O2-PFHxS	IS	89.0		86.9		50-150	29-May-18 15:07	1	29-May-18 14:54	1
13C2-PFOA	IS	91.2		97.7		50-150	29-May-18 15:07	1	29-May-18 14:54	1
13C8-PFOS	IS	96.7		92.2		50-150	29-May-18 15:07	1	29-May-18 14:54	1
13C5-PFNA	IS	79.9		77.5		50-150	29-May-18 15:07	1	29-May-18 14:54	1

Sample ID: STWRT-LWSW01

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 10:50

Laboratory Data

Lab Sample: 1801005-02
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00272	0.00235	0.00539	0.00864	J	B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
PFHpA	375-85-9	0.00581	0.00235	0.00539	0.00864	J	B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
PFHxS	355-46-4	0.0103	0.00235	0.00539	0.00864		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
PFOA	335-67-1	0.00559	0.00235	0.00539	0.00864	J	B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
PFOS	1763-23-1	0.0291	0.00235	0.00539	0.00864		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
PFNA	375-95-1	ND	0.00235	0.00539	0.00864		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
13C4-PFHpA	IS	83.4	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
18O2-PFHxS	IS	89.7	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
13C2-PFOA	IS	87.5	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
13C8-PFOS	IS	82.9	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1
13C5-PFNA	IS	77.3	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 17:56	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-LWSW02

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 16-May-18 09:10

Laboratory Data

Lab Sample: 1801005-03
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00894	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
PFHpA	375-85-9	0.0205	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
PFHxS	355-46-4	0.0493	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
PFOA	335-67-1	0.0224	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
PFOS	1763-23-1	0.108	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
PFNA	375-95-1	ND	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
13C4-PFHpA	IS	82.1	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
18O2-PFHxS	IS	92.2	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
13C2-PFOA	IS	83.7	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
13C8-PFOS	IS	89.0	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1
13C5-PFNA	IS	77.7	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:09	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-RPSW21

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 16-May-18 10:30

Laboratory Data

Lab Sample: 1801005-04
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0111	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
PFHpA	375-85-9	0.0273	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
PFHxS	355-46-4	0.0758	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
PFOA	335-67-1	0.0358	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
PFOS	1763-23-1	0.322	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
PFNA	375-95-1	0.00984	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	122	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
13C4-PFHpA	IS	95.1	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
18O2-PFHxS	IS	103	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
13C2-PFOA	IS	89.1	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
13C8-PFOS	IS	92.1	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1
13C5-PFNA	IS	77.5	50 - 150		B8E0195	23-May-18	0.118 L	29-May-18 18:22	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-RPTSW01

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 15:45

Laboratory Data

Lab Sample: 1801005-05
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0161	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
PFHpA	375-85-9	0.0428	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
PFHxS	355-46-4	0.119	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
PFOA	335-67-1	0.0512	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
PFOS	1763-23-1	0.439	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
PFNA	375-95-1	0.0136	0.00234	0.00539	0.00860		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	134	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
13C4-PFHpA	IS	87.3	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
18O2-PFHxS	IS	89.0	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
13C2-PFOA	IS	88.9	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
13C8-PFOS	IS	85.6	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1
13C5-PFNA	IS	79.7	50 - 150		B8E0195	23-May-18	0.116 L	29-May-18 18:35	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-RPTSW01 **PFAS Isotope Dilution Method**

Name:	Wood Environment & Infrastructure	Lab Sample:	B8E0195-MS2/B8E0195-MSD2	Source Lab Sample:	1801005-05
Project:	Stewart ANGB/ 291330006	QC Batch:	B8E0195	Date Extracted:	23-May-18
Matrix:	Aqueous	Samp Size:	0.119/0.115 L	Column:	BEH C18

Analyte	CAS Number	Sample (ug/L)	MS (ug/L)	MS Spike Amt	MS % Rec	MS Quals	MSD (ug/L)	MSD Spike Amt	MSD % Rec	RPD	MSD Quals	%Rec Limits	RPD Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
PFBS	375-73-5	0.0161	0.0980	0.0837	97.9		0.0967	0.0869	92.8	5.35		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1
PFHpA	375-85-9	0.0428	0.128	0.0837	102		0.125	0.0869	94.9	7.21		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1
PFHxS	355-46-4	0.119	0.199	0.0837	95.2		0.196	0.0869	89.1	6.62		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1
PFOA	335-67-1	0.0512	0.130	0.0837	93.8		0.125	0.0869	84.7	10.2		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1
PFOS	1763-23-1	0.439	0.514	0.0837	89.4		0.535	0.0869	110	20.7		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1
PFNA	375-95-1	0.0136	0.109	0.0837	114		0.0920	0.0869	90.2	23.3		70-130	30	29-May-18 14:28	1	29-May-18 14:41	1

Labeled Standards	Type	MS % Rec	MS Quals	MSD % Rec	MSD Quals	Limits	MS Analyzed	MS Dil	MSD Analyzed	MSD Dil
13C3-PFBS	IS	117		109		50-150	29-May-18 14:28	1	29-May-18 14:41	1
13C4-PFHpA	IS	88.1		91.8		50-150	29-May-18 14:28	1	29-May-18 14:41	1
18O2-PFHxS	IS	98.5		93.5		50-150	29-May-18 14:28	1	29-May-18 14:41	1
13C2-PFOA	IS	81.4		87.6		50-150	29-May-18 14:28	1	29-May-18 14:41	1
13C8-PFOS	IS	91.7		96.2		50-150	29-May-18 14:28	1	29-May-18 14:41	1
13C5-PFNA	IS	73.4		92.8		50-150	29-May-18 14:28	1	29-May-18 14:41	1

Sample ID: STWRT-RPTSW02

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 14:50

Laboratory Data

Lab Sample: 1801005-06
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0152	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
PFHpA	375-85-9	0.0424	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
PFHxS	355-46-4	0.119	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
PFOA	335-67-1	0.0504	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
PFOS	1763-23-1	0.383	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
PFNA	375-95-1	ND	0.00231	0.00530	0.00848		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	114	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
13C4-PFHpA	IS	86.5	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
18O2-PFHxS	IS	97.4	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
13C2-PFOA	IS	82.8	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
13C8-PFOS	IS	94.7	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1
13C5-PFNA	IS	94.9	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 15:08	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-RPTSW03

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 14:25

Laboratory Data

Lab Sample: 1801005-07
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00909	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
PFHpA	375-85-9	0.0205	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
PFHxS	355-46-4	0.0675	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
PFOA	335-67-1	0.0250	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
PFOS	1763-23-1	0.200	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
PFNA	375-95-1	ND	0.00233	0.00534	0.00856		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.9	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
13C4-PFHpA	IS	88.8	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
18O2-PFHxS	IS	90.5	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
13C2-PFOA	IS	87.1	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
13C8-PFOS	IS	83.8	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1
13C5-PFNA	IS	88.4	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 15:20	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SSSW01

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 11:35

Laboratory Data

Lab Sample: 1801005-08
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00388	0.00237	0.00543	0.00869	J	B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
PFHpA	375-85-9	0.00271	0.00237	0.00543	0.00869	J	B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
PFHxS	355-46-4	0.0127	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
PFOA	335-67-1	0.00347	0.00237	0.00543	0.00869	J	B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
PFOS	1763-23-1	0.0163	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
PFNA	375-95-1	ND	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	110	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
13C4-PFHpA	IS	84.5	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
18O2-PFHxS	IS	88.1	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
13C2-PFOA	IS	96.6	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
13C8-PFOS	IS	103	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1
13C5-PFNA	IS	74.3	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 15:33	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SSSW02

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 11:20

Laboratory Data

Lab Sample: 1801005-09
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00716	0.00239	0.00548	0.00878	J	B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
PFHpA	375-85-9	0.0137	0.00239	0.00548	0.00878		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
PFHxS	355-46-4	0.0458	0.00239	0.00548	0.00878		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
PFOA	335-67-1	0.0157	0.00239	0.00548	0.00878		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
PFOS	1763-23-1	0.103	0.00239	0.00548	0.00878		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
PFNA	375-95-1	0.00317	0.00239	0.00548	0.00878	J	B8E0195	23-May-18	0.114 L	31-May-18 15:46	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	99.3	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
13C4-PFHpA	IS	87.9	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
18O2-PFHxS	IS	94.7	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
13C2-PFOA	IS	89.8	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
13C8-PFOS	IS	87.6	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1
13C5-PFNA	IS	85.4	50 - 150		B8E0195	23-May-18	0.114 L	31-May-18 15:46	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SSSW03

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 10:10

Laboratory Data

Lab Sample: 1801005-10
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00752	0.00236	0.00539	0.00865	J	B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
PFHpA	375-85-9	0.0146	0.00236	0.00539	0.00865		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
PFHxS	355-46-4	0.0454	0.00236	0.00539	0.00865		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
PFOA	335-67-1	0.0150	0.00236	0.00539	0.00865		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
PFOS	1763-23-1	0.176	0.00236	0.00539	0.00865		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
PFNA	375-95-1	ND	0.00236	0.00539	0.00865		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.2	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
13C4-PFHpA	IS	89.4	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
18O2-PFHxS	IS	92.1	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
13C2-PFOA	IS	87.7	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
13C8-PFOS	IS	87.2	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1
13C5-PFNA	IS	84.3	50 - 150		B8E0195	23-May-18	0.116 L	31-May-18 15:59	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SSSW04

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 15-May-18 09:15

Laboratory Data

Lab Sample: 1801005-11
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00708	0.00227	0.00521	0.00832	J	B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
PFHpA	375-85-9	0.0138	0.00227	0.00521	0.00832		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
PFHxS	355-46-4	0.0429	0.00227	0.00521	0.00832		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
PFOA	335-67-1	0.0172	0.00227	0.00521	0.00832		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
PFOS	1763-23-1	0.113	0.00227	0.00521	0.00832		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
PFNA	375-95-1	0.00397	0.00227	0.00521	0.00832	J	B8E0195	23-May-18	0.120 L	31-May-18 16:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
13C4-PFHpA	IS	89.6	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
18O2-PFHxS	IS	94.5	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
13C2-PFOA	IS	90.8	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
13C8-PFOS	IS	84.6	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1
13C5-PFNA	IS	85.0	50 - 150		B8E0195	23-May-18	0.120 L	31-May-18 16:12	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SW-DUP-001-051618

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Surface Water
Date Collected: 16-May-18 00:00

Laboratory Data

Lab Sample: 1801005-12
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0120	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
PFHpA	375-85-9	0.0249	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
PFHxS	355-46-4	0.0801	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
PFOA	335-67-1	0.0331	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
PFOS	1763-23-1	0.322	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
PFNA	375-95-1	0.00921	0.00237	0.00543	0.00869		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	103	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
13C4-PFHpA	IS	95.3	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
18O2-PFHxS	IS	98.7	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
13C2-PFOA	IS	92.5	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
13C8-PFOS	IS	80.9	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1
13C5-PFNA	IS	88.5	50 - 150		B8E0195	23-May-18	0.115 L	31-May-18 16:25	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-EB-007-ZA-051718

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: QC Water
Date Collected: 17-May-18 14:00

Laboratory Data

Lab Sample: 1801005-13
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
PFHpA	375-85-9	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
PFHxS	355-46-4	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
PFOA	335-67-1	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
PFOS	1763-23-1	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
PFNA	375-95-1	ND	0.00233	0.00534	0.00855		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
13C4-PFHpA	IS	90.6	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
18O2-PFHxS	IS	98.0	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
13C2-PFOA	IS	93.6	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
13C8-PFOS	IS	90.6	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1
13C5-PFNA	IS	86.3	50 - 150		B8E0195	23-May-18	0.117 L	31-May-18 16:38	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-GW-DUP-001-051718

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Groundwater
Date Collected: 17-May-18 00:00

Laboratory Data

Lab Sample: 1801005-14
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00561	0.00225	0.00517	0.00826	J	B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
PFHpA	375-85-9	0.00366	0.00225	0.00517	0.00826	J	B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
PFHxS	355-46-4	0.00705	0.00225	0.00517	0.00826	J	B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
PFOA	335-67-1	0.00784	0.00225	0.00517	0.00826	J	B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
PFOS	1763-23-1	0.00567	0.00225	0.00517	0.00826	J	B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
PFNA	375-95-1	ND	0.00225	0.00517	0.00826		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	102	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
13C4-PFHpA	IS	100	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
18O2-PFHxS	IS	89.9	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
13C2-PFOA	IS	90.6	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
13C8-PFOS	IS	104	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1
13C5-PFNA	IS	97.6	50 - 150		B8E0195	23-May-18	0.121 L	31-May-18 16:51	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-LW-MW01

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Groundwater
Date Collected: 17-May-18 13:35

Laboratory Data

Lab Sample: 1801005-15
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00658	0.00231	0.00530	0.00847	J	B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
PFHpA	375-85-9	0.00453	0.00231	0.00530	0.00847	J	B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
PFHxS	355-46-4	0.00634	0.00231	0.00530	0.00847	J	B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
PFOA	335-67-1	0.0351	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
PFOS	1763-23-1	0.00304	0.00231	0.00530	0.00847	J	B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
PFNA	375-95-1	ND	0.00231	0.00530	0.00847		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	109	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
13C4-PFHpA	IS	98.0	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
18O2-PFHxS	IS	97.3	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
13C2-PFOA	IS	93.0	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
13C8-PFOS	IS	91.2	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1
13C5-PFNA	IS	87.9	50 - 150		B8E0195	23-May-18	0.118 L	31-May-18 17:42	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-LW-MW03

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Groundwater
Date Collected: 17-May-18 12:15

Laboratory Data

Lab Sample: 1801005-16
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00407	0.00242	0.00553	0.00887	J	B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
PFHpA	375-85-9	0.0437	0.00242	0.00553	0.00887		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
PFHxS	355-46-4	0.0202	0.00242	0.00553	0.00887		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
PFOA	335-67-1	0.0393	0.00242	0.00553	0.00887		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
PFOS	1763-23-1	0.0176	0.00242	0.00553	0.00887		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
PFNA	375-95-1	0.00829	0.00242	0.00553	0.00887	J	B8E0195	23-May-18	0.113 L	31-May-18 17:55	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.8	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
13C4-PFHpA	IS	91.6	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
18O2-PFHxS	IS	94.2	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
13C2-PFOA	IS	85.3	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
13C8-PFOS	IS	88.3	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1
13C5-PFNA	IS	88.6	50 - 150		B8E0195	23-May-18	0.113 L	31-May-18 17:55	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

Sample ID: STWRT-SS-MW01

PFAS Isotope Dilution Method

Client Data

Name: Wood Environment & Infrastructure
Project: Stewart ANGB/ 291330006
Matrix: Groundwater
Date Collected: 17-May-18 11:24

Laboratory Data

Lab Sample: 1801005-17
Date Received: 19-May-18 09:20
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.00359	0.00216	0.00496	0.00794	J	B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
PFHpA	375-85-9	0.00356	0.00216	0.00496	0.00794	J	B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
PFHxS	355-46-4	0.00616	0.00216	0.00496	0.00794	J	B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
PFOA	335-67-1	0.00910	0.00216	0.00496	0.00794		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
PFOS	1763-23-1	0.00766	0.00216	0.00496	0.00794	J	B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
PFNA	375-95-1	ND	0.00216	0.00496	0.00794		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	98.1	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
13C4-PFHpA	IS	97.0	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
18O2-PFHxS	IS	99.9	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
13C2-PFOA	IS	94.0	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
13C8-PFOS	IS	93.6	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1
13C5-PFNA	IS	87.3	50 - 150		B8E0195	23-May-18	0.126 L	31-May-18 18:08	1

DL - Detection Limit
LOD - Limit of Detection
LOQ - Limit of quantitation
LCL-UCL- Lower control limit - upper control limit
Results reported to the DL.
When reported, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	**This compound was also detected in the method blank**
Conc.	**Concentration**
D	**Dilution**
DL	**Detection limit**
E	**The associated compound concentration exceeded the calibration range of the instrument**
H	**Recovery and/or RPD was outside laboratory acceptance limits**
I	**Chemical Interference**
J	**The amount detected is below the Reporting Limit/LOQ**
LOD	**Limits of Detection**
LOQ	**Limits of Quantitation**
M	**Estimated Maximum Possible Concentration (CA Region 2 projects only)**
NA	**Not applicable**
ND	**Not Detected**
Q	**Ion ratio outside of 70-130% of Standard Ratio. (DOD PFAS projects only)**
TEQ	**Toxic Equivalency**
U	**Not Detected (specific projects only)**
*****	**See Cover Letter**

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	17-015-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-18
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2016026
Minnesota Department of Health	1322288
New Hampshire Environmental Accreditation Program	207717
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-008
Pennsylvania Department of Environmental Protection	014
Texas Commission on Environmental Quality	T104704189-17-8
Virginia Department of General Services	9077
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
285 Davidson Ave, Suite 405
Somerset, NJ, 08873
732-302-9500

SHIP TO:
Vista
1104 Windfield Way
El Dorado Hills, CA 95762
Atten: Martha Maier
Lab Phone# (916) 673-1520

CHAIN OF CUSTODY

DATE: 5/18/2018
COC #: STWRT180518A
PAGE: 1 OF 2

1801005 1.2°C

Project Name:	Stewart ANGB	Project Contact:	Kerri Doyle	Bill To: Amec Foster Wheeler Environment & Infrastructure	Disposal Instructions: LAB
Project Number:	**291330006**	Phone Number:	828-337-6408	9210 Sky Park Court #200	Shipment Method: FEDEX
Project Manager:	Kerry Tull	Project Phase:	.01	San Diego, CA 92123	Waybill Number: 772268956730

Sample Information

No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	Methods for Analysis: EPA 537M	RUSH: 24 Hour	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	STWRT-LW-MW02	05/17/18 09:23	WG	N	Y	X					6	
2	STWRT-LWSW01	05/15/18 10:50	WS	N	N	X					2	
3	STWRT-LWSW02	05/16/18 09:10	WS	N	N	X					2	
4	STWRT-RPSW21	05/16/18 10:30	WS	N	N	X					2	
5	STWRT-RPTSW01	05/15/18 15:45	WS	N	Y	X					6	
6	STWRT-RPTSW02	05/15/18 14:50	WS	N	N	X					2	
7	STWRT-RPTSW03	05/15/18 14:25	WS	N	N	X					2	
8	STWRT-SSSW01	05/15/18 11:35	WS	N	N	X					2	
9	STWRT-SSSW02	05/15/18 11:20	WS	N	N	X					2	
10	STWRT-SSSW03	05/15/18 10:10	WS	N	N	X					2	
11	STWRT-SSSW04	05/15/18 09:15	WS	N	N	X					2	
12	STWRT-SW-DUP-001-051618	05/16/18	WS	FD	N	X					2	

Sampler's Signature:		Date: 5/18/18	Time: 1235
Relinquished By/Affiliation: Zelli Alikaj	WOOD	Date: 5/18/18	Time: 1235
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By:		Date:	Time:
Relinquished By/Affiliation:	VAL	Date: 05/19/18	Time: 0937
Received By (LAB):		Date:	Time:

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

NUMBER OF COOLERS SENT: 1

Analyte List: UCMR 3 (PFHpA, PFOA, PFNA, PFBS, PFHxS, PFOS)

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
285 Davidson Ave, Suite 405
Somerset, NJ, 08873
732-302-9500

SHIP TO:
Vista
1104 Windfield Way
El Dorado Hills, CA 95762
Atten: Martha Maier
Lab Phone# (916) 673-1520

CHAIN OF CUSTODY

1801005

DATE: 5/18/2018
COC #: STWRT180518A
PAGE: 2 OF 2

Project Name:	Stewart ANGB	Project Contact:	Kerri Doyle	Bill To:	Amec Foster Wheeler Environment & Infrastructure	Disposal Instructions:	LAB
Project Number:	**291330006**	Phone Number:	828-337-6408		9210 Sky Park Court #200	Shipment Method:	FEDEX
Project Manager:	Kerry Tull	Project Phase:	.01		San Diego, CA 92123	Waybill Number:	772268956730

Sample Information						Methods for Analysis	RUSH					
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	EPA 537M	24 Hour	48 Hour	72 Hour	5 Days	TOTAL BOTTLES	HOLD All Analyses
1	STWRT-EB-007-ZA-051718	05/17/18 14:00	WQ	N	N	X					2	
2	STWRT-GW-DUP-001-051718	05/17/18	WG	FD	N	X					2	
3	STWRT-LW-MW01	05/17/18 13:35	WG	N	N	X					2	
4	STWRT-LW-MW03	05/17/18 12:15	WG	N	N	X					2	
5	STWRT-SS-MW01	05/17/18 11:24	WG	N	N	X					2	
6												
7												
8												
9												
10												
11												
12												

Sampler's Signature:		Date: 5/18/18	Time: 1235
Relinquished By/Affiliation:	Zakkary Wood	Date: 5/18/18	Time: 1235
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By (LAB):	VAL	Date: 05/19/18	Time: 0937

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

NUMBER OF COOLERS SENT:

Analyte List: UCMR 3 (PFHpA, PFOA, PFNA, PFBS, PFHxS, PFOS)

Vista Analytical Laboratory

Sample Log-in Checklist

Vista Work Order #: 1801005 **TAT** 14

Samples Arrival:	**Date/Time** 05/19/18 0920	**Initials:** KE	**Location:** WR-2 **Shelf/Rack:** N/A
Logged In:	**Date/Time** 05/19/18 1301	**Initials:** KE	**Location:** WR-2 **Shelf/Rack:** B-6

Delivered By:	FedEx	UPS	On Trac	GSO	DHL	Hand Delivered	Other
Preservation:	Ice		Blue Ice		Dry Ice		None

Temp °C: 1.3 (uncorrected)	**Time:** 0938	**Thermometer ID:** IR-4
Temp °C: 1.2 (corrected)	**Probe used: Yes☐ No☑**	

	YES	NO	NA
Adequate Sample Volume Received?	KE		
Holding Time Acceptable?	KE		
Shipping Container(s) Intact?	KE		
Shipping Custody Seals Intact?	KE		
Shipping Documentation Present?	KE		
Airbill — Trk # 7722 6895 6730	KE		
Sample Container Intact?	KE		
Sample Custody Seals Intact?			KE
Chain of Custody / Sample Documentation Present?	KE		
COC Anomaly/Sample Acceptance Form completed?		KE	KE
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			KE

Preservation Documented:	$Na_2S_2O_3$	Trizma	None		Yes	No	NA
Shipping Container	Vista	Client	Retain	Return		Dispose	

Comments:

Reviewed 06/28/2018
Elizabeth Penta
Wood. PLC

ANALYTICAL REPORT

Job Number: 280-109977-1

Job Description: Stewart ANGB

For:
Wood E&I Solutions Inc
271 Mill Road
Chelmsford, MA 01824

Attention: Denise King

Approved for release.
Stephanie K Rothmeyer
Project Manager I
6/12/2018 1:06 PM

Stephanie K Rothmeyer, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0182
stephanie.rothmeyer@testamericainc.com
06/12/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

Table of Contents

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Wood E&I Solutions Inc

Project: Stewart ANGB

Report Number: 280-109977-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 5/19/2018 at 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

One Amber 250mL H2SO4 preserve containers arrived with a cracked lid. Sample did not leak out nor was it compromised for sample STWRT-TTSW21.

TOTAL ORGANIC CARBON

Samples STWRT-LWSW01 (280-109977-1), STWRT-RPSW21 (280-109977-2), STWRT-RPTSW02 (280-109977-3), STWRT-RPTSW03 (280-109977-4) and STWRT-SSSW03 (280-109977-5) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 06/06/2018 and 06/08/2018.

Several analytes failed the recovery criteria low for the MS and MSD of sample STWRT-RPTSW03 (280-109977-4) in batch 280-417740. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

Client Sample ID: STWRT-LWSW01 — Lab Sample ID: 280-109977-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	3.8		1.0	0.16	mg/L	1		9060A	Total/NA

Client Sample ID: STWRT-RPSW21 — Lab Sample ID: 280-109977-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	5.4		1.0	0.16	mg/L	1		9060A	Total/NA

Client Sample ID: STWRT-RPTSW02 — Lab Sample ID: 280-109977-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	3.7		1.0	0.16	mg/L	1		9060A	Total/NA

Client Sample ID: STWRT-RPTSW03 — Lab Sample ID: 280-109977-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	4.4	J1	1.0	0.16	mg/L	1		9060A	Total/NA

Client Sample ID: STWRT-SSSW03 — Lab Sample ID: 280-109977-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	4.3		1.0	0.16	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: STWRT-LWSW01

Lab Sample ID: 280-109977-1

Date Collected: 05/15/18 10:50

Matrix: Water

Date Received: 05/19/18 08:40

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	3.8		1.0	0.16	mg/L			06/06/18 21:57	1

Client Sample ID: STWRT-RPSW21

Lab Sample ID: 280-109977-2

Date Collected: 05/16/18 10:30

Matrix: Water

Date Received: 05/19/18 08:40

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	5.4		1.0	0.16	mg/L			06/08/18 00:36	1

Client Sample ID: STWRT-RPTSW02

Lab Sample ID: 280-109977-3

Date Collected: 05/15/18 14:50

Matrix: Water

Date Received: 05/19/18 08:40

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	3.7		1.0	0.16	mg/L			06/06/18 22:12	1

Client Sample ID: STWRT-RPTSW03

Lab Sample ID: 280-109977-4

Date Collected: 05/15/18 14:25

Matrix: Water

Date Received: 05/19/18 08:40

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	4.4	J1	1.0	0.16	mg/L			06/06/18 22:26	1

Client Sample ID: STWRT-SSSW03

Lab Sample ID: 280-109977-5

Date Collected: 05/15/18 10:10

Matrix: Water

Date Received: 05/19/18 08:40

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	4.3		1.0	0.16	mg/L			06/06/18 23:11	1

Default Detection Limits

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

General Chemistry

Analyte	LOQ	DL	Units	Method
Total Organic Carbon - Quad	1.0	0.16	mg/L	9060A

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-417740/35
Matrix: Water
Analysis Batch: 417740

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.50	U	1.0	0.16	mg/L			06/06/18 19:48	1

Lab Sample ID: LCS 280-417740/34
Matrix: Water
Analysis Batch: 417740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Quad	25.0	24.2		mg/L		97	88 - 112
TOC Result 4	25.0	24.2		mg/L		97	88 - 112
TOC Result 3	25.0	24.1		mg/L		96	88 - 112
TOC Result 2	25.0	24.4		mg/L		97	88 - 112
TOC Result 1	25.0	24.2		mg/L		97	88 - 112

Lab Sample ID: 280-109977-4 MS
Matrix: Water
Analysis Batch: 417740

Client Sample ID: STWRT-RPTSW03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Quad	4.4	J1	30.0	29.7	J1	mg/L		84	88 - 112
TOC Result 4	4.3	J1	30.0	29.2	J1	mg/L		83	88 - 112
TOC Result 3	4.4	J1	30.0	29.5	J1	mg/L		84	88 - 112
TOC Result 2	4.4	J1	30.0	30.2	J1	mg/L		86	88 - 112
TOC Result 1	4.4	J1	30.0	29.9	J1	mg/L		85	88 - 112

Lab Sample ID: 280-109977-4 MSD
Matrix: Water
Analysis Batch: 417740

Client Sample ID: STWRT-RPTSW03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	4.4	J1	30.0	29.6	J1	mg/L		84	88 - 112	0	15
TOC Result 4	4.3	J1	30.0	29.3	J1	mg/L		83	88 - 112	0	15
TOC Result 3	4.4	J1	30.0	29.6	J1	mg/L		84	88 - 112	0	15
TOC Result 2	4.4	J1	30.0	30.1	J1	mg/L		86	88 - 112	0	15
TOC Result 1	4.4	J1	30.0	29.5	J1	mg/L		84	88 - 112	1	15

Lab Sample ID: MB 280-417882/6
Matrix: Water
Analysis Batch: 417882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.50	U	1.0	0.16	mg/L			06/07/18 17:00	1

Lab Sample ID: LCS 280-417882/4
Matrix: Water
Analysis Batch: 417882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Quad	25.0	24.1		mg/L		97	88 - 112
TOC Result 4	25.0	24.1		mg/L		97	88 - 112

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 280-417882/4
Matrix: Water
Analysis Batch: 417882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 3	25.0	23.7		mg/L		95	88 - 112
TOC Result 2	25.0	24.2		mg/L		97	88 - 112
TOC Result 1	25.0	24.5		mg/L		98	88 - 112

Lab Sample ID: LCSD 280-417882/5
Matrix: Water
Analysis Batch: 417882

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	25.0	24.1		mg/L		96	88 - 112	0	15
TOC Result 4	25.0	24.0		mg/L		96	88 - 112	1	15
TOC Result 3	25.0	24.0		mg/L		96	88 - 112	1	15
TOC Result 2	25.0	24.0		mg/L		96	88 - 112	1	15
TOC Result 1	25.0	24.3		mg/L		97	88 - 112	1	15

General Chemistry

Analysis Batch: 417740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-109977-1	STWRT-LWSW01	Total/NA	Water	9060A	
280-109977-3	STWRT-RPTSW02	Total/NA	Water	9060A	
280-109977-4	STWRT-RPTSW03	Total/NA	Water	9060A	
280-109977-5	STWRT-SSSW03	Total/NA	Water	9060A	
MB 280-417740/35	Method Blank	Total/NA	Water	9060A	
LCS 280-417740/34	Lab Control Sample	Total/NA	Water	9060A	
280-109977-4 MS	STWRT-RPTSW03	Total/NA	Water	9060A	
280-109977-4 MSD	STWRT-RPTSW03	Total/NA	Water	9060A	

Analysis Batch: 417882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-109977-2	STWRT-RPSW21	Total/NA	Water	9060A	
MB 280-417882/6	Method Blank	Total/NA	Water	9060A	
LCS 280-417882/4	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-417882/5	Lab Control Sample Dup	Total/NA	Water	9060A	

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

Client Sample ID: STWRT-LWSW01
Lab Sample ID: 280-109977-1
Date Collected: 05/15/18 10:50
Matrix: Water
Date Received: 05/19/18 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			417740	06/06/18 21:57	A1D	TAL DEN

Client Sample ID: STWRT-RPSW21
Lab Sample ID: 280-109977-2
Date Collected: 05/16/18 10:30
Matrix: Water
Date Received: 05/19/18 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			417882	06/08/18 00:36	A1D	TAL DEN

Client Sample ID: STWRT-RPTSW02
Lab Sample ID: 280-109977-3
Date Collected: 05/15/18 14:50
Matrix: Water
Date Received: 05/19/18 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			417740	06/06/18 22:12	A1D	TAL DEN

Client Sample ID: STWRT-RPTSW03
Lab Sample ID: 280-109977-4
Date Collected: 05/15/18 14:25
Matrix: Water
Date Received: 05/19/18 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			417740	06/06/18 22:26	A1D	TAL DEN

Client Sample ID: STWRT-SSSW03
Lab Sample ID: 280-109977-5
Date Collected: 05/15/18 10:10
Matrix: Water
Date Received: 05/19/18 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1			417740	06/06/18 23:11	A1D	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
Maine	State Program	1	CO0002	03-03-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9060A		Water	Total Organic Carbon - Quad

Minnesota	NELAP	5	8-999-405	12-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9060A		Water	Total Organic Carbon - Quad

New York	NELAP	2	11964	04-01-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9060A		Water	Total Organic Carbon - Quad

Pennsylvania	NELAP	3	68-00664	07-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9060A		Water	Total Organic Carbon - Quad

West Virginia DEP	State Program	3	354	12-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9060A		Water	Total Organic Carbon - Quad

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

Method	Method Description	Protocol	Laboratory
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: Stewart ANGB

TestAmerica Job ID: 280-109977-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-109977-1	STWRT-LWSW01	Water	05/15/18 10:50	05/19/18 08:40
280-109977-2	STWRT-RPSW21	Water	05/16/18 10:30	05/19/18 08:40
280-109977-3	STWRT-RPTSW02	Water	05/15/18 14:50	05/19/18 08:40
280-109977-4	STWRT-RPTSW03	Water	05/15/18 14:25	05/19/18 08:40
280-109977-5	STWRT-SSSW03	Water	05/15/18 10:10	05/19/18 08:40

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
TOC ICV Std_00033	06/30/18		Ricca, Lot 4706c18		(Purchased Reagent)		TOC Result 1	1000 ppm
							TOC Result 2	1000 ppm
							TOC Result 3	1000 ppm
							TOC Result 4	1000 ppm
							Total Organic Carbon - Quad	1000 ppm
TOC LCS Std_00040	10/31/19		Ultra Scientific, Lot CR-4416		(Purchased Reagent)		TOC Result 1	1000 ppm
							TOC Result 2	1000 ppm
							TOC Result 3	1000 ppm
							TOC Result 4	1000 ppm
							Total Organic Carbon - Quad	1000 ppm

Reagent

TOC ICV Std_00033

RICCA CHEMICAL COMPANY®

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Organic Carbon Standard, 1000 ppm C

Lot Number: 4706C18 **Product Number:** 1847

Manufacture Date: JUN 12, 2017
Expiration Date: JUN 2018

The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is based upon the volumetric method of preparation.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Phosphoric Acid	7664-38-2	ACS
Potassium Acid Phthalate	877-24-7	ACS Acidimetric

Test	Specification	Result
Appearance	Colorless liquid	Passed
Carbon (C)	995-1005 ppm	1000 ppm

Specification	Reference
Organic Carbon Stock Solution	APHA (5310 B)
Potassium Hydrogen Phthalate, Stock Solution	EPA (SW-846) (9060)
Potassium Hydrogen Phthalate, Stock Solution, 1000 mg Carbon/liter	EPA (415.1)
Organic Carbon Solution, Standard (1 mL = 1 mg C)	ASTM (D 2579)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1847-32	1 L amber glass	12 months
1847-16	500 mL amber glass	12 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Jim Gibbs (06/12/2017)
Quality Control Supervisor
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

TOC LCS Std_00040

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: IQC-106
Lot Number: CR-4416

Lot Issue Date: 29-Sep 2017
Expiration Date: 31-Oct 2019

Product Name: Total Organic Carbon (TOC) Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Analyte Concentration	Traceability & Method
TOC	potassium hydrogen phthalate	RM07968	99.96	1001 ± 5 µg/mL	NY04102; TOC Analyzer

Solvent: water (low TOC, <50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

250 SMITH STREET • NORTH KINGSTOWN, RHODE ISLAND 02852 • WWW.ULTRASCI.COM

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: IQC-106
Lot Number: CR-4416

Lot Issue Date: 29-Sep 2017
Expiration Date: 31-Oct 2019

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-109977-1

SDG No.:

Project: Stewart ANGB

Client Sample ID	Lab Sample ID
STWRT-LWSW01	280-109977-1
STWRT-RPSW21	280-109977-2
STWRT-RPTSW02	280-109977-3
STWRT-RPTSW03	280-109977-4
STWRT-SSSW03	280-109977-5

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: STWRT-LWSW01 Lab Sample ID: 280-109977-1

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG ID.:

Matrix: Water Date Sampled: 05/15/2018 10:50

Reporting Basis: WET Date Received: 05/19/2018 08:40

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon - Quad	3.8	1.0	0.50	0.16	mg/L			1	9060A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: STWRT-RPSW21 Lab Sample ID: 280-109977-2

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG ID.:

Matrix: Water Date Sampled: 05/16/2018 10:30

Reporting Basis: WET Date Received: 05/19/2018 08:40

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon - Quad	5.4	1.0	0.50	0.16	mg/L			1	9060A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: STWRT-RPTSW02 Lab Sample ID: 280-109977-3

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG ID.:

Matrix: Water Date Sampled: 05/15/2018 14:50

Reporting Basis: WET Date Received: 05/19/2018 08:40

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon - Quad	3.7	1.0	0.50	0.16	mg/L			1	9060A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: STWRT-RPTSW03 Lab Sample ID: 280-109977-4

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG ID.:

Matrix: Water Date Sampled: 05/15/2018 14:25

Reporting Basis: WET Date Received: 05/19/2018 08:40

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon - Quad	4.4	1.0	0.50	0.16	mg/L		J1	1	9060A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: STWRT-SSSW03 Lab Sample ID: 280-109977-5

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG ID.:

Matrix: Water Date Sampled: 05/15/2018 10:10

Reporting Basis: WET Date Received: 05/19/2018 08:40

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Total Organic Carbon - Quad	4.3	1.0	0.50	0.16	mg/L			1	9060A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Analyst: A1D Batch Start Date: 06/06/2018

Reporting Units: mg/L Analytical Batch No.: 417740

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	10:10	Total Organic Carbon - Quad	20.9	20.0	104	90-110		TOC ICV Std_00033
2	ICB	10:25	Total Organic Carbon - Quad	0.50				U	
27	CCV	17:33	Total Organic Carbon - Quad	24.9	25.0	100	90-110		TOC LCS Std_00040
28	CCB	17:50	Total Organic Carbon - Quad	0.50				U	
39	CCV	20:56	Total Organic Carbon - Quad	25.3	25.0	101	90-110		TOC LCS Std_00040
40	CCB	21:11	Total Organic Carbon - Quad	0.349				J	
51	CCV	23:55	Total Organic Carbon - Quad	24.5	25.0	98	90-110		TOC LCS Std_00040
52	CCB	00:12	Total Organic Carbon - Quad	0.50				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Analyst: A1D Batch Start Date: 06/07/2018

Reporting Units: mg/L Analytical Batch No.: 417882

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	ICV	15:59	Total Organic Carbon - Quad	18.7	20.0	94	90-110		TOC ICV Std_00033
3	ICB	16:14	Total Organic Carbon - Quad	0.50				U	
17	CCV	19:54	Total Organic Carbon - Quad	24.1	25.0	96	90-110		TOC LCS Std_00040
18	CCB	20:09	Total Organic Carbon - Quad	0.50				U	
29	CCV	23:05	Total Organic Carbon - Quad	24.2	25.0	97	90-110		TOC LCS Std_00040
30	CCB	23:20	Total Organic Carbon - Quad	0.177				J	
41	CCV	02:06	Total Organic Carbon - Quad	24.3	25.0	97	90-110		TOC LCS Std_00040
42	CCB	02:21	Total Organic Carbon - Quad	0.189				J	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 417740 Date: 06/06/2018 19:48							
9060A	MB 280-417740/35	Total Organic Carbon - Quad	0.50	U	mg/L	1.0	1
9060A	MB 280-417740/35	TOC Result 4	0.50	U	mg/L	1.0	1
9060A	MB 280-417740/35	TOC Result 3	0.50	U	mg/L	1.0	1
9060A	MB 280-417740/35	TOC Result 2	0.50	U	mg/L	1.0	1
9060A	MB 280-417740/35	TOC Result 1	0.50	U	mg/L	1.0	1
Batch ID: 417882 Date: 06/07/2018 17:00							
9060A	MB 280-417882/6	Total Organic Carbon - Quad	0.50	U	mg/L	1.0	1
9060A	MB 280-417882/6	TOC Result 4	0.50	U	mg/L	1.0	1
9060A	MB 280-417882/6	TOC Result 3	0.50	U	mg/L	1.0	1
9060A	MB 280-417882/6	TOC Result 2	0.50	U	mg/L	1.0	1
9060A	MB 280-417882/6	TOC Result 1	0.50	U	mg/L	1.0	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 417740 Date: 06/06/2018 22:41											
9060A	280-109977-4	Total Organic Carbon - Quad	4.4		mg/L						J1
9060A	280-109977-4 MS	Total Organic Carbon - Quad	29.7		mg/L	30.0	84	88-112			J1
9060A	280-109977-4	TOC Result 4	4.3		mg/L						J1
9060A	280-109977-4 MS	TOC Result 4	29.2		mg/L	30.0	83	88-112			J1
9060A	280-109977-4	TOC Result 3	4.4		mg/L						J1
9060A	280-109977-4 MS	TOC Result 3	29.5		mg/L	30.0	84	88-112			J1
9060A	280-109977-4	TOC Result 2	4.4		mg/L						J1
9060A	280-109977-4 MS	TOC Result 2	30.2		mg/L	30.0	86	88-112			J1
9060A	280-109977-4	TOC Result 1	4.4		mg/L						J1
9060A	280-109977-4 MS	TOC Result 1	29.9		mg/L	30.0	85	88-112			J1

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 417740 Date: 06/06/2018 22:56											
9060A	280-109977-4 MSD	Total Organic Carbon - Quad	29.6		mg/L	30.0	84	88-112	0	15	J1
9060A	280-109977-4 MSD	TOC Result 4	29.3		mg/L	30.0	83	88-112	0	15	J1
9060A	280-109977-4 MSD	TOC Result 3	29.6		mg/L	30.0	84	88-112	0	15	J1
9060A	280-109977-4 MSD	TOC Result 2	30.1		mg/L	30.0	86	88-112	0	15	J1
9060A	280-109977-4 MSD	TOC Result 1	29.5		mg/L	30.0	84	88-112	1	15	J1

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 417740 Date: 06/06/2018 19:33											
						LCS Source: TOC LCS Std_00040					
9060A	LCS 280-417740/34	Total Organic Carbon - Quad	24.2		mg/L	25.0	97	88-112			
9060A	LCS 280-417740/34	TOC Result 4	24.2		mg/L	25.0	97	88-112			
9060A	LCS 280-417740/34	TOC Result 3	24.1		mg/L	25.0	96	88-112			
9060A	LCS 280-417740/34	TOC Result 2	24.4		mg/L	25.0	97	88-112			
9060A	LCS 280-417740/34	TOC Result 1	24.2		mg/L	25.0	97	88-112			
Batch ID: 417882 Date: 06/07/2018 16:28											
						LCS Source: TOC LCS Std_00040					
9060A	LCS 280-417882/4	Total Organic Carbon - Quad	24.1		mg/L	25.0	97	88-112	0	15	
9060A	LCS 280-417882/4	TOC Result 4	24.1		mg/L	25.0	97	88-112	1	15	
9060A	LCS 280-417882/4	TOC Result 3	23.7		mg/L	25.0	95	88-112	1	15	
9060A	LCS 280-417882/4	TOC Result 2	24.2		mg/L	25.0	97	88-112	1	15	
9060A	LCS 280-417882/4	TOC Result 1	24.5		mg/L	25.0	98	88-112	1	15	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 417882 Date: 06/07/2018 16:45											
						LCSD Source: TOC LCS Std_00040					
9060A	LCSD 280-417882/5	Total Organic Carbon - Quad	24.1		mg/L	25.0	96	88-112	0	15	
9060A	LCSD 280-417882/5	TOC Result 4	24.0		mg/L	25.0	96	88-112	1	15	
9060A	LCSD 280-417882/5	TOC Result 3	24.0		mg/L	25.0	96	88-112	1	15	
9060A	LCSD 280-417882/5	TOC Result 2	24.0		mg/L	25.0	96	88-112	1	15	
9060A	LCSD 280-417882/5	TOC Result 1	24.3		mg/L	25.0	97	88-112	1	15	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-109977-1

SDG Number:

Matrix: Water Instrument ID: WC_SHI2

Method: 9060A DL Date: 03/28/2011 11:39

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Total Organic Carbon - Quad		1	0.155

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-109977-1

SDG Number:

Matrix: Water Instrument ID: WC_SHI2

Method: 9060A XMDL Date: 03/28/2011 11:39

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Organic Carbon - Quad		1	0.155

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-109977-1

SDG Number:

Matrix: Water Instrument ID: WC_SHI3

Method: 9060A DL Date: 03/28/2011 11:39

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Total Organic Carbon - Quad		1	0.155

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-109977-1

SDG Number:

Matrix: Water Instrument ID: WC_SHI3

Method: 9060A XMDL Date: 03/28/2011 11:39

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Organic Carbon - Quad		1	0.155

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Instrument ID: WC_SHI2 Analysis Method: 9060A

Start Date: 06/06/2018 10:10 End Date: 06/07/2018 03:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				TOC1	TOC2	TOC3	TOC4	TOCQ																						
ICV 280-417740/1	1		10:10	X	X	X	X	X																						
ICB 280-417740/2	1		10:25					X																						
ZZZZZZ			10:40																											
ZZZZZZ			10:56																											
ZZZZZZ			11:10																											
ZZZZZZ			11:27																											
ZZZZZZ			11:42																											
ZZZZZZ			11:57																											
ZZZZZZ			12:16																											
ZZZZZZ			12:34																											
ZZZZZZ			13:01																											
ZZZZZZ			13:19																											
ZZZZZZ			13:44																											
ZZZZZZ			14:04																											
CCV 280-417740/15			14:18																											
CCB 280-417740/16			14:35																											
ZZZZZZ			14:52																											
ZZZZZZ			15:06																											
ZZZZZZ			15:23																											
ZZZZZZ			15:41																											
ZZZZZZ			16:01																											
ZZZZZZ			16:17																											
ZZZZZZ			16:32																											
ZZZZZZ			16:48																											
ZZZZZZ			17:03																											
ZZZZZZ			17:18																											
CCV 280-417740/27	1		17:33	X	X	X	X	X																						
CCB 280-417740/28	1		17:50					X																						
ZZZZZZ			18:16																											
ZZZZZZ			18:35																											
ZZZZZZ			18:49																											
ZZZZZZ			19:04																											
ZZZZZZ			19:18																											
LCS 280-417740/34	1	T	19:33	X	X	X	X	X																						
MB 280-417740/35	1	T	19:48					X																						
ZZZZZZ			20:03																											
ZZZZZZ			20:17																											
ZZZZZZ			20:34																											
CCV 280-417740/39	1		20:56	X	X	X	X	X																						
CCB 280-417740/40	1		21:11					X																						

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Instrument ID: WC_SHI2 Analysis Method: 9060A

Start Date: 06/06/2018 10:10 End Date: 06/07/2018 03:13

Lab Sample Id	D/F	Type	Time	Analytes																										
				TOC1	TOC2	TOC3	TOC4	TOCQ																						
ZZZZZZ			21:28																											
ZZZZZZ			21:42																											
280-109977-1	1	T	21:57					X																						
280-109977-3	1	T	22:12					X																						
280-109977-4	1	T	22:26					X																						
280-109977-4 MS	1	T	22:41	X	X	X	X	X																						
280-109977-4 MSD	1	T	22:56	X	X	X	X	X																						
280-109977-5	1	T	23:11					X																						
ZZZZZZ			23:25																											
ZZZZZZ			23:41																											
CCV 280-417740/51	1		23:55	X	X	X	X	X																						
CCB 280-417740/52	1		00:12					X																						
ZZZZZZ			00:27																											
ZZZZZZ			00:42																											
ZZZZZZ			00:57																											
ZZZZZZ			01:12																											
ZZZZZZ			01:28																											
ZZZZZZ			01:43																											
ZZZZZZ			01:58																											
ZZZZZZ			02:12																											
ZZZZZZ			02:27																											
ZZZZZZ			02:41																											
CCV 280-417740/63			02:56																											
CCB 280-417740/64			03:13																											

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Instrument ID: WC_SHI3 Analysis Method: 9060A

Start Date: 06/07/2018 14:53 End Date: 06/08/2018 08:14

Lab Sample Id	D/F	Type	Time	Analytes																										
				TOC1	TOC2	TOC3	TOC4	TOCQ																						
ZZZZZZ			14:53																											
ICV 280-417882/2	1		15:59	X	X	X	X	X																						
ICB 280-417882/3	1		16:14					X																						
LCS 280-417882/4	1	T	16:28	X	X	X	X	X																						
LCSD 280-417882/5	1	T	16:45	X	X	X	X	X																						
MB 280-417882/6	1	T	17:00					X																						
ZZZZZZ			17:15																											
ZZZZZZ			17:29																											
ZZZZZZ			17:46																											
ZZZZZZ			18:03																											
ZZZZZZ			18:18																											
ZZZZZZ			18:32																											
ZZZZZZ			18:49																											
ZZZZZZ			19:06																											
ZZZZZZ			19:20																											
ZZZZZZ			19:37																											
CCV 280-417882/17	1		19:54	X	X	X	X	X																						
CCB 280-417882/18	1		20:09					X																						
ZZZZZZ			20:24																											
ZZZZZZ			20:38																											
ZZZZZZ			20:53																											
ZZZZZZ			21:08																											
ZZZZZZ			21:24																											
ZZZZZZ			21:39																											
ZZZZZZ			21:56																											
ZZZZZZ			22:15																											
ZZZZZZ			22:29																											
ZZZZZZ			22:50																											
CCV 280-417882/29	1		23:05	X	X	X	X	X																						
CCB 280-417882/30	1		23:20					X																						
ZZZZZZ			23:35																											
ZZZZZZ			23:49																											
ZZZZZZ			00:06																											
ZZZZZZ			00:21																											
280-109977-2	1	T	00:36					X																						
ZZZZZZ			00:52																											
ZZZZZZ			01:07																											
ZZZZZZ			01:22																											
ZZZZZZ			01:37																											
ZZZZZZ			01:51																											

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Instrument ID: WC_SHI3 Analysis Method: 9060A

Start Date: 06/07/2018 14:53 End Date: 06/08/2018 08:14

Lab Sample Id	D/F	Type	Time	Analytes																									
				TOC1	TOC2	TOC3	TOC4	TOCQ																					
CCV 280-417882/41	1		02:06	X	X	X	X	X																					
CCB 280-417882/42	1		02:21					X																					
ZZZZZZ			02:36																										
ZZZZZZ			02:55																										
ZZZZZZ			03:12																										
ZZZZZZ			03:26																										
ZZZZZZ			03:41																										
ZZZZZZ			03:58																										
ZZZZZZ			04:15																										
ZZZZZZ			04:31																										
ZZZZZZ			04:46																										
CCV 280-417882/52			05:01																										
CCB 280-417882/53			05:16																										
ZZZZZZ			05:33																										
ZZZZZZ			05:49																										
ZZZZZZ			06:06																										
ZZZZZZ			06:23																										
ZZZZZZ			06:42																										
ZZZZZZ			06:56																										
ZZZZZZ			07:11																										
ZZZZZZ			07:26																										
ZZZZZZ			07:41																										
CCV 280-417882/63			07:59																										
CCB 280-417882/64			08:14																										

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Batch Number: 417740 Batch Start Date: 06/06/18 10:10 Batch Analyst: Duplin, Alysha 1

Batch Method: 9060A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	TOC ICV Std 00033	TOC LCS Std 00040			
ICV 280-417740/1		9060A		50 mL	1 mL				
CCV 280-417740/27		9060A		200 mL		5 mL			
LCS 280-417740/34		9060A		200 mL		5 mL			
CCV 280-417740/39		9060A		200 mL		5 mL			
280-109977-A-4 MS	STWRT-RPTSW03	9060A	T	50 mL		1.5 mL			
280-109977-A-4 MSD	STWRT-RPTSW03	9060A	T	50 mL		1.5 mL			
CCV 280-417740/51		9060A		200 mL		5 mL			

Batch Notes	
Acid ID	H2SO4_00179 0.2%H2SO4_00297
Combustion Catylyst ID	17001D-01
Pipette/Syringe/Dispenser ID	5000ad1

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-109977-1

SDG No.:

Batch Number: 417882 Batch Start Date: 06/07/18 14:53 Batch Analyst: Duplin, Alysha 1

Batch Method: 9060A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	TOC ICV Std 00033	TOC LCS Std 00040			
ICV 280-417882/2		9060A		50 mL	1 mL				
LCS 280-417882/4		9060A		200 mL		5 mL			
LCSD 280-417882/5		9060A		200 mL		5 mL			
CCV 280-417882/17		9060A		200 mL		5 mL			
CCV 280-417882/29		9060A		200 mL		5 mL			
CCV 280-417882/41		9060A		200 mL		5 mL			

Batch Notes	
Acid ID	H2SO4_00179 0.2%H2SO4_00297
Combustion Catylyst ID	17001D-01
Pipette/Syringe/Dispenser ID	5000ad1

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

pH AD 6/6/18

	Analysis	Sample Name	Manual Dilut	~~Result~~	Notes	Date / Time	Vial
1*	NPOC	ICV	1.000	< 2			1
2*	NPOC	ICB	1.000	< 2			2
3*	NPOC	LCS	1.000	< 2			3
4*	NPOC	MB	1.000	< 2			4
5*	NPOC	TIC	1.000	< 2			5
6*	NPOC	280-109781-b-16	1.000	< 2			6
7*	NPOC	MS 280-109781-b-16	1.000	< 2			7
8*	NPOC	MSD 280-109781-b-16	1.000	< 2			8
9*	NPOC	280-109781-b-2	1.000	< 2			9
10*	NPOC	280-109781-b-3	1.000	< 2			10
11*	NPOC	280-109781-b-4	2x ~~1.000~~	< 2	Turbid		11
12*	NPOC	280-109781-b-5	1.000	< 2			12
13*	NPOC	280-109781-b-6	1.000	< 2			13
14*	NPOC	280-109781-b-7	1.000	< 2			14
15*	NPOC	CCV	1.000	< 2			15
16*	NPOC	CCB	1.000	< 2			16
17*	NPOC	280-109781-b-8	1.000	< 2			17
18*	NPOC	280-109781-b-9	1.000	< 2			18
19*	NPOC	280-109781-b-10	1.000	< 2			19
20*	NPOC	280-109781-b-11	2x ~~1.000~~	< 2	Turbid		20
21*	NPOC	280-109781-b-12	1.000	< 2			21
22*	NPOC	280-109781-b-13	1.000	< 2			22
23*	NPOC	280-109781-b-14	1.000	< 2			23
24*	NPOC	280-109781-b-15	1.000	< 2			24
25*	NPOC	MS 280-109781-b-15	1.000	< 2			25
26*	NPOC	MSD 280-109781-b-15	1.000	< 2			26
27*	NPOC	CCV	1.000	< 2			27
28*	NPOC	CCB	1.000	< 2			28
29*	NPOC	280-109781-b-1	1.000	< 2			29
30*	NPOC	280-109781-b-17	1.000	< 2			30
31*	NPOC	280-109781-b-19	1.000	< 2			31
32*	NPOC	280-109781-b-20	1.000	< 2			32
33*	NPOC	280-109781-b-21	1.000	< 2			33
34*	NPOC	LCS	1.000	< 2			34
35*	NPOC	MB	1.000	< 2			35
36*	NPOC	TIC	1.000	< 2			36
37*	NPOC	280-109781-b-22	1.000	< 2			37
38*	NPOC	280-109781-b-23	1.000	< 2			38
39*	NPOC	CCV	1.000	< 2			39
40*	NPOC	CCB	1.000	< 2			40
41*	NPOC	280-109819-a-7	1.000	< 2			41
42*	NPOC	280-109819-a-8	1.000	< 2			42
43*	NPOC	280-109977-a-1	1.000	< 2			43
44*	NPOC	280-109977-a-3	1.000	< 2			44
45*	NPOC	280-109977-a-4	1.000	< 2			45
46*	NPOC	MS 280-109977-a-4	1.000	< 2			46
47*	NPOC	MSD 280-109977-a-4	1.000	< 2			47
48*	NPOC	280-109977-a-5	1.000	< 2			48
49*	NPOC	280-109832-a-1	1.000	< 2			49
50*	NPOC	280-109832-a-2	1.000	< 2			50
51*	NPOC	CCV	1.000	< 2			51

pH AD 6/6/18

	Analysis	Sample Name	Manual Diluti	~~Result~~	Notes	Date / Time	Vial
52*	NPOC	CCB	1.000	<2			52
53*	NPOC	280-109832-a-3	1.000	<2			53
54*	NPOC	MS 280-109832-a-3	1.000	<2			54
55*	NPOC	MSD C280-109832-a-3	1.000	<2			55
56*	NPOC	280-109832-a-4	1.000	<2			56
57*	NPOC	280-109832-a-5	1.000	<2			57
58*	NPOC	280-109832-a-6	1.000	<2			58
59*	NPOC	280-109832-a-10	1.000	<2			59
60*	NPOC	280-109832-a-11	1.000	<2			60
61*	NPOC	280-109832-a-12	1.000	<2			61
62*	NPOC	280-109832-a-13	1.000	<2			62
63*	NPOC	CCV	1.000	<2			63
64*	NPOC	CCB	1.000	<2			64

	Analysis	Sample Name	Manual Diluti	Result	Notes	Date / Time	Vial
1	NPOC	ICV	1.000	NPOC:20.86mg/		6/6/2018 10:17:34	1
2	NPOC	ICB	1.000	NPOC:-0.04989		6/6/2018 10:32:05	2
3	NPOC	LCS	1.000	NPOC:24.92mg/		6/6/2018 10:48:01	3
4	NPOC	MB	1.000	NPOC:-0.02463		6/6/2018 11:02:32	4
5	NPOC	TIC	1.000	NPOC:0.01195		6/6/2018 11:17:03	5
6	NPOC	280-109781-b-16	1.000	NPOC:1.397mg/		6/6/2018 11:33:39	6
7	NPOC	MS 280-109781-b-16	1.000	NPOC:25.61mg/		6/6/2018 11:49:09	7
8	NPOC	MSD 280-109781-b-16	1.000	NPOC:25.50mg/		6/6/2018 12:04:37	8
9	NPOC	280-109781-b-2	1.000	NPOC:91.11mg/		6/6/2018 12:22:49	9
10	NPOC	280-109781-b-3	1.000	NPOC:73.21mg/		6/6/2018 12:40:49	10
11	NPOC	280-109781-b-4	2.000	NPOC:524.9mg/		6/6/2018 1:08:17	11
12	NPOC	280-109781-b-5	1.000	NPOC:94.86mg/		6/6/2018 1:32:49	12
13	NPOC	280-109781-b-6	1.000	NPOC:119.2mg/		6/6/2018 1:51:39	13
14	NPOC	280-109781-b-7	1.000	NPOC:4.737mg/		6/6/2018 2:10:21	14
15	NPOC	CCV	1.000	NPOC:24.62mg/		6/6/2018 2:25:26	15
16	NPOC	CCB	1.000	NPOC:0.1840m		6/6/2018 2:44:07	16
17	NPOC	280-109781-b-8	1.000	NPOC:5.465mg/		6/6/2018 2:58:35	17
18	NPOC	280-109781-b-9	1.000	NPOC:1.617mg/		6/6/2018 3:15:11	18
19	NPOC	280-109781-b-10	1.000	NPOC:34.01mg/		6/6/2018 3:30:48	19
20	NPOC	280-109781-b-11	2.000	NPOC:191.0mg/		6/6/2018 3:50:46	20
21	NPOC	280-109781-b-12	1.000	NPOC:4.660mg/		6/6/2018 4:07:17	21
22	NPOC	280-109781-b-13	1.000	NPOC:3.948mg/		6/6/2018 4:23:53	22
23	NPOC	280-109781-b-14	1.000	NPOC:6.957mg/		6/6/2018 4:38:28	23
24	NPOC	280-109781-b-15	1.000	NPOC:2.810mg/		6/6/2018 4:55:04	24
25	NPOC	MS 280-109781-b-15	1.000	NPOC:27.53mg/		6/6/2018 5:10:08	25
26	NPOC	MSD 280-109781-b-15	1.000	NPOC:28.02mg/		6/6/2018 5:25:27	26
27	NPOC	CCV	1.000	NPOC:24.90mg/		6/6/2018 5:40:38	27
28	NPOC	CCB	1.000	NPOC:0.1116m		6/6/2018 5:57:14	28
29	NPOC	280-109781-b-1	1.000	NPOC:759.4mg/		6/6/2018 6:22:37	29
30	NPOC	280-109781-b-17	1.000	NPOC:1.317mg/		6/6/2018 6:41:17	30
31	NPOC	280-109781-b-19	1.000	NPOC:1.329mg/		6/6/2018 6:55:43	31
32	NPOC	280-109781-b-20	1.000	NPOC:1.768mg/		6/6/2018 7:10:34	32
33	NPOC	280-109781-b-21	1.000	NPOC:2.670mg/		6/6/2018 7:25:07	33
34	NPOC	LCS	1.000	NPOC:24.18mg/		6/6/2018 7:40:12	34
35	NPOC	MB	1.000	NPOC:0.06015		6/6/2018 7:54:44	35
36	NPOC	TIC	1.000	NPOC:0.07570		6/6/2018 8:09:16	36
37	NPOC	280-109781-b-22	1.000	NPOC:2.509mg/		6/6/2018 8:23:48	37
38	NPOC	280-109781-b-23	1.000	NPOC:109.9mg/		6/6/2018 8:48:30	38
39	NPOC	CCV	1.000	NPOC:25.30mg/		6/6/2018 9:03:34	39
40	NPOC	CCB	1.000	NPOC:0.3489m		6/6/2018 9:18:06	40
41	NPOC	280-109819-a-7	1.000	NPOC:1.606mg/		6/6/2018 9:34:43	41
42	NPOC	280-109819-a-8	1.000	NPOC:1.670mg/		6/6/2018 9:49:15	42
43	NPOC	280-109977-a-1	1.000	NPOC:3.842mg/		6/6/2018 10:03:47	43
44	NPOC	280-109977-a-3	1.000	NPOC:3.656mg/		6/6/2018 10:18:19	44
45	NPOC	280-109977-a-4	1.000	NPOC:4.365mg/		6/6/2018 10:32:51	45
46	NPOC	MS 280-109977-a-4	1.000	NPOC:29.69mg/		6/6/2018 10:47:50	46
47	NPOC	MSD 280-109977-a-4	1.000	NPOC:29.63mg/		6/6/2018 11:02:49	47
48	NPOC	280-109977-a-5	1.000	NPOC:4.301mg/		6/6/2018 11:17:21	48
49	NPOC	280-109832-a-1	1.000	NPOC:21.74mg/		6/6/2018 11:32:45	49
50	NPOC	280-109832-a-2	1.000	NPOC:1.103mg/		6/6/2018 11:47:17	50
51	NPOC	CCV	1.000	NPOC:24.54mg/		6/7/2018 12:02:26	51
52	NPOC	CCB	1.000	NPOC:0.09009		6/7/2018 12:19:03	52
53	NPOC	280-109832-a-3	1.000	NPOC:8.344mg/		6/7/2018 12:33:50	53

	Analysis	Sample Name	Manual Diluti	Result	Notes	Date / Time	Vial
54	NPOC	MS 280-109832-a-3	1.000	NPOC:33.23mg/		6/7/2018 12:48:55	54
55	NPOC	MSD C280-109832-a-3	1.000	NPOC:33.20mg/		6/7/2018 1:04:02	55
56	NPOC	280-109832-a-4	1.000	NPOC:2.579mg/		6/7/2018 1:18:35	56
57	NPOC	280-109832-a-5	1.000	NPOC:6.247mg/		6/7/2018 1:35:13	57
58	NPOC	280-109832-a-6	1.000	NPOC:1.187mg/		6/7/2018 1:49:46	58
59	NPOC	280-109832-a-10	1.000	NPOC:6.048mg/		6/7/2018 2:04:19	59
60	NPOC	280-109832-a-11	1.000	NPOC:1.368mg/		6/7/2018 2:18:52	60
61	NPOC	280-109832-a-12	1.000	NPOC:4.639mg/		6/7/2018 2:33:25	61
62	NPOC	280-109832-a-13	1.000	NPOC:1.399mg/		6/7/2018 2:47:58	62
63	NPOC	CCV	1.000	NPOC:24.20mg/		6/7/2018 3:03:09	63
64	NPOC	CCB	1.000	NPOC:0.1037m		6/7/2018 3:19:47	64

Instr.Information

System SHI2
Instrument Options TOC/ASI/IC Unit/
Catalyst Regular Sensitivity

Sample

Sample Name: ICV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

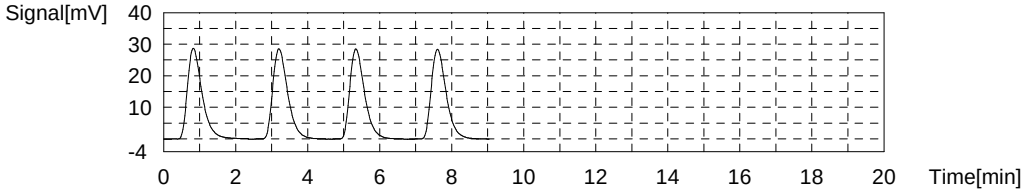
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:20.86mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.69	20.68mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:10:20 AM
2	83.20	21.06mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:12:39 AM
3	82.19	20.81mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:15:06 AM
4	82.55	20.90mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:17:34 AM

Mean Area 82.41
Mean Conc. 20.86mg/L



Sample

Sample Name: ICB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

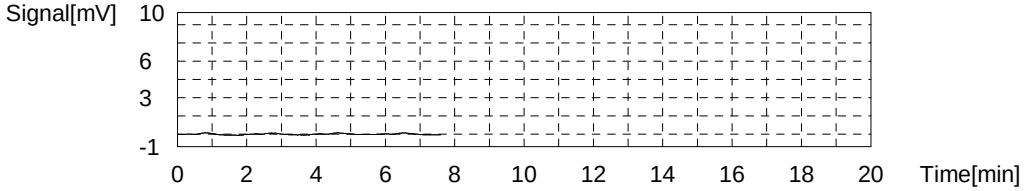
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:-0.04989mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.3782	-0.02503mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:25:49 AM
2	0.2380	-0.06073mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:27:55 AM
3	0.2354	-0.06140mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:30:00 AM
4	0.2708	-0.05238mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:32:05 AM

Mean Area 0.2806
Mean Conc. -0.04989mg/L



Sample

Sample Name: LCS
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

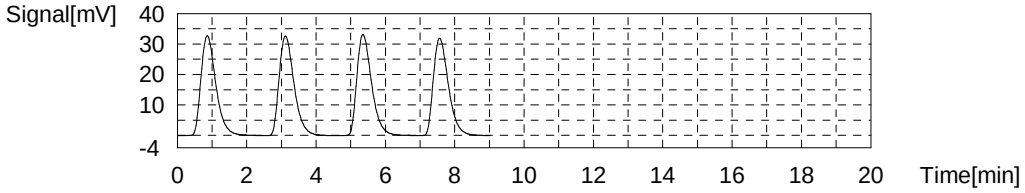
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.92mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	98.22	24.89mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:40:42 AM
2	98.83	25.04mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:43:08 AM
3	98.70	25.01mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:45:31 AM
4	97.53	24.71mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:48:01 AM

Mean Area 98.32
Mean Conc. 24.92mg/L



Sample

Sample Name: MB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

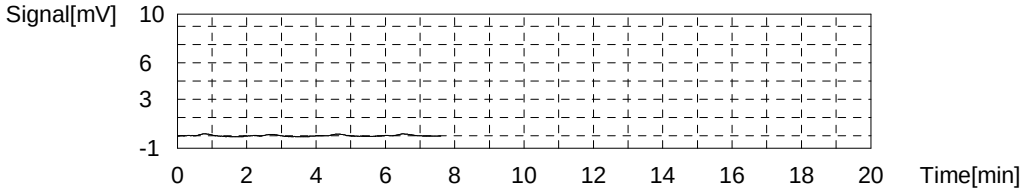
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:-0.02463mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4279	-0.01238mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:56:17 AM
2	0.3534	-0.03135mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:58:22 AM
3	0.3443	-0.03366mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:00:27 AM
4	0.3935	-0.02114mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:02:32 AM

Mean Area 0.3798
Mean Conc. -0.02463mg/L



Sample

Sample Name: TIC
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

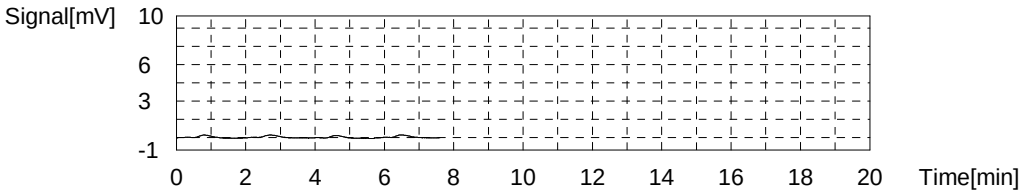
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.01195mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5640	0.02228mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:10:48 AM
2	0.5050	0.00726mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:12:53 AM
3	0.4980	0.00547mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:14:58 AM
4	0.5268	0.01281mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:17:03 AM

Mean Area 0.5234
Mean Conc. 0.01195mg/L



Sample

Sample Name: 280-109781-b-16
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

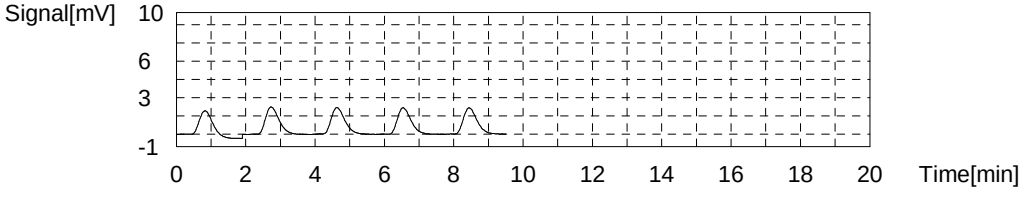
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.397mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.324	1.234mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:25:19 AM
2	6.069	1.424mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:27:24 AM
3	5.950	1.394mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:29:29 AM
4	5.927	1.388mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:31:34 AM
5	5.909	1.383mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:33:39 AM

Mean Area 5.964
Mean Conc. 1.397mg/L



Sample

Sample Name: MS 280-109781-b-16
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

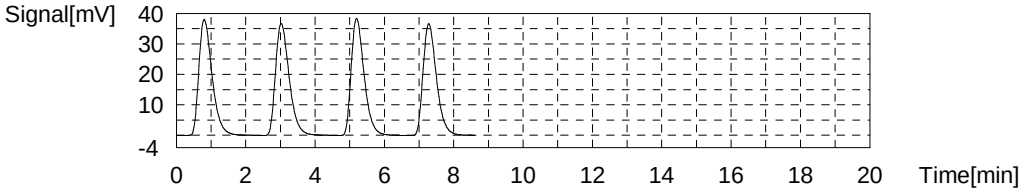
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.61mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.0	25.85mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:42:11 AM
2	101.9	25.83mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:44:34 AM
3	100.8	25.55mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:46:48 AM
4	99.48	25.21mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:49:09 AM

Mean Area 101.0
Mean Conc. 25.61mg/L



Sample

Sample Name: MSD 280-109781-b-16
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

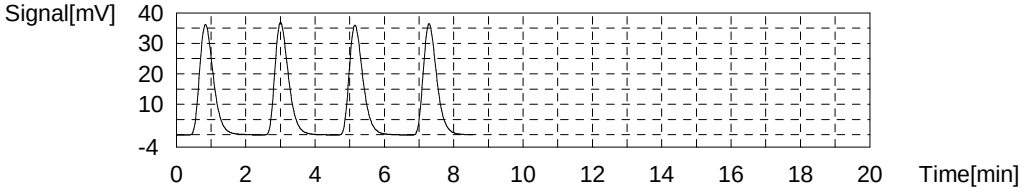
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.50mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.2	25.65mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:57:42 AM
2	101.7	25.78mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:00:01 PM
3	100.1	25.37mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:02:19 PM
4	99.42	25.20mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:04:37 PM

Mean Area 100.6
Mean Conc. 25.50mg/L



Sample

Sample Name: 280-109781-b-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

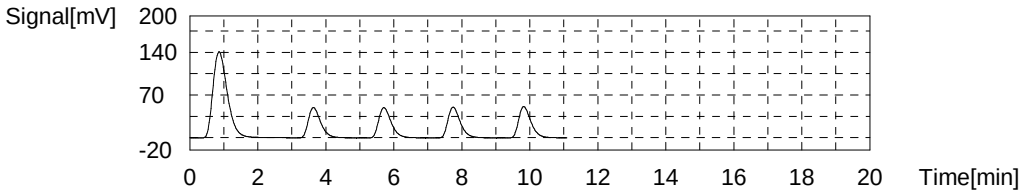
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:91.11mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	419.4	106.7mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:13:50 PM
2	127.3	89.92mg/L	18uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:16:04 PM
3	129.0	91.13mg/L	18uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:18:18 PM
4	129.3	91.34mg/L	18uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:20:34 PM
5	130.3	92.04mg/L	18uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:22:49 PM

Mean Area 129.0
Mean Conc. 91.11mg/L



Sample

Sample Name: 280-109781-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

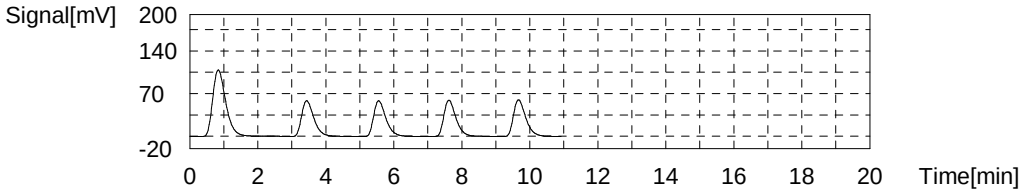
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:73.21mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	295.1	75.02mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:31:48 PM
2	148.9	72.79mg/L	26uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:34:07 PM
3	148.4	72.55mg/L	26uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:36:22 PM
4	148.6	72.65mg/L	26uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:38:35 PM
5	153.1	74.85mg/L	26uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:40:49 PM

Mean Area 149.8
Mean Conc. 73.21mg/L



Sample

Sample Name: 280-109781-b-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

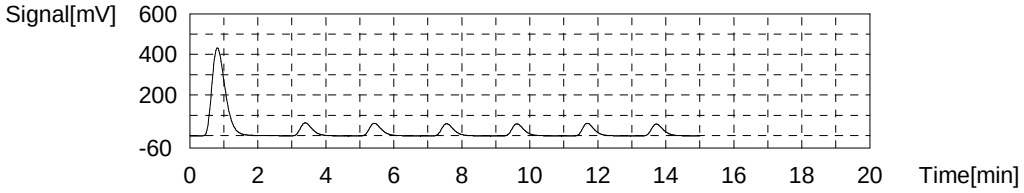
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	2.000	NPOC:524.9mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1195	608.4mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:49:47 PM
2	160.7	571.2mg/L	50uL	7	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:57:01 PM
3	157.3	559.1mg/L	50uL	7	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 12:59:19 PM
4	149.9	532.7mg/L	50uL	7		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:01:35 PM
5	146.5	520.6mg/L	50uL	7		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:03:50 PM
6	150.6	535.2mg/L	50uL	7		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:06:03 PM
7	143.9	511.3mg/L	50uL	7		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:08:17 PM

Mean Area 147.7
Mean Conc. 524.9mg/L



Sample

Sample Name: 280-109781-b-5
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

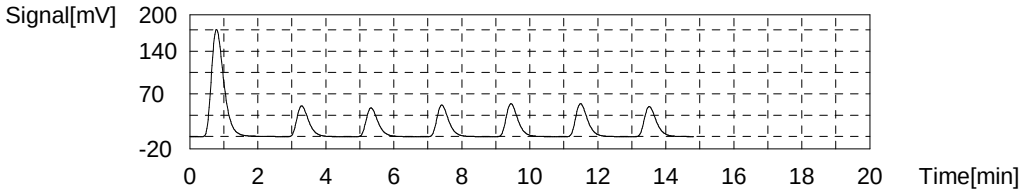
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:94.86mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	452.0	115.0mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:17:05 PM
2	124.3	92.97mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:19:18 PM
3	116.6	87.21mg/L	17uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:21:34 PM
4	126.8	94.85mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:23:47 PM
5	132.6	99.19mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:26:01 PM
6	133.9	100.2mg/L	17uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:28:13 PM
7	123.6	92.45mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:32:49 PM

Mean Area 126.8
Mean Conc. 94.86mg/L



Sample

Sample Name: 280-109781-b-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

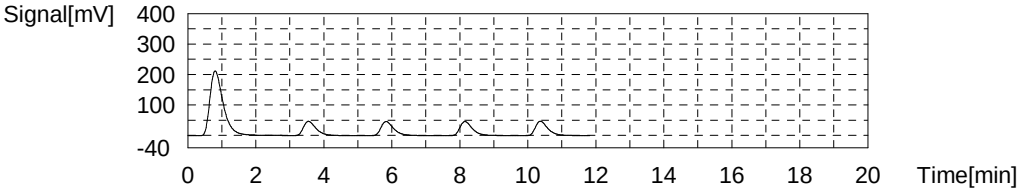
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:119.2mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	583.4	148.4mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:41:52 PM
2	123.3	120.6mg/L	13uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:44:20 PM
3	121.9	119.3mg/L	13uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:46:50 PM
4	119.8	117.2mg/L	13uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:49:14 PM
5	122.2	119.6mg/L	13uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:51:39 PM

Mean Area 121.8
Mean Conc. 119.2mg/L



Sample

Sample Name: 280-109781-b-7
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

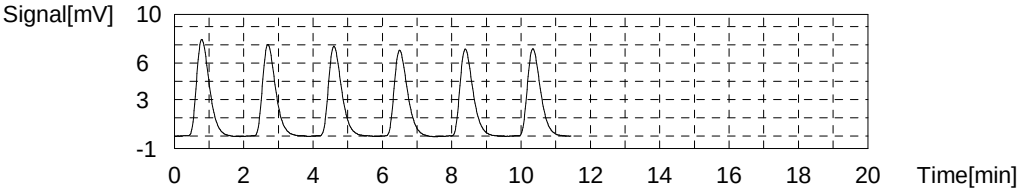
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.737mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.55	5.112mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 1:59:54 PM
2	19.71	4.898mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:01:59 PM
3	19.50	4.844mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:04:04 PM
4	18.91	4.694mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:06:09 PM
5	18.83	4.674mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:08:16 PM
6	19.07	4.735mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:10:21 PM

Mean Area 19.08
Mean Conc. 4.737mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

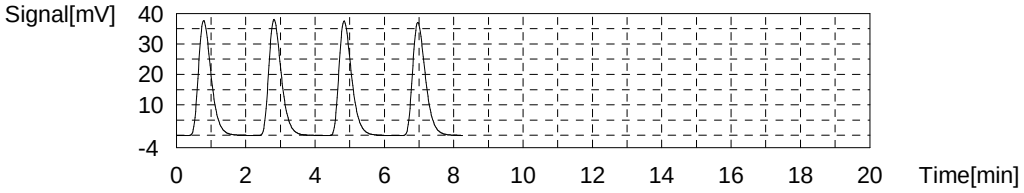
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.62mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	97.12	24.61mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:18:39 PM
2	97.53	24.71mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:20:52 PM
3	96.97	24.57mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:23:10 PM
4	96.95	24.57mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:25:26 PM

Mean Area 97.14
Mean Conc. 24.62mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

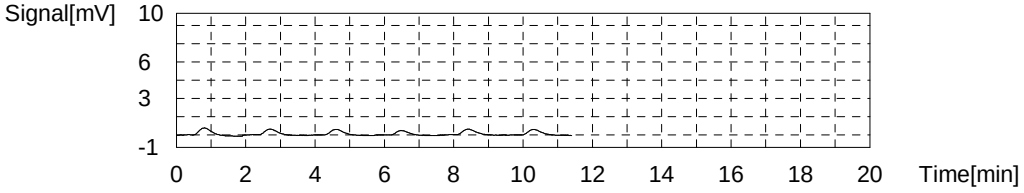
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1840mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.453	0.2487mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:33:42 PM
2	1.168	0.1761mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:35:47 PM
3	1.227	0.1911mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:37:52 PM
4	0.9354	0.1169mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:39:57 PM
5	1.178	0.1786mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:42:02 PM
6	1.224	0.1903mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:44:07 PM

Mean Area 1.199
Mean Conc. 0.1840mg/L



Sample

Sample Name: 280-109781-b-8
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

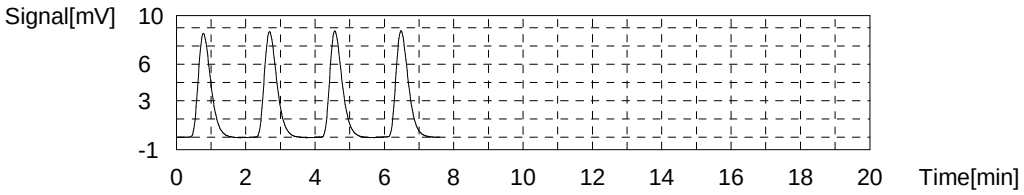
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:5.465mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.77	5.422mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:52:18 PM
2	22.19	5.529mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:54:24 PM
3	21.91	5.458mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:56:30 PM
4	21.88	5.450mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 2:58:35 PM

Mean Area 21.94
Mean Conc. 5.465mg/L



Sample

Sample Name: 280-109781-b-9
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

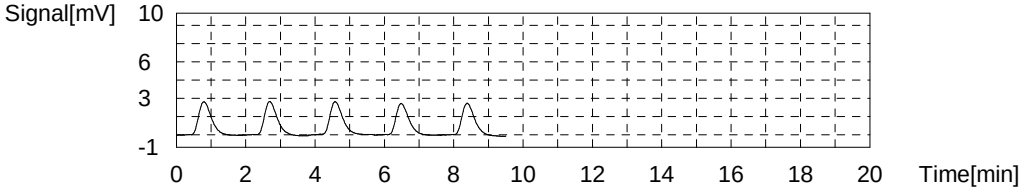
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.617mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.913	1.639mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:06:51 PM
2	6.936	1.645mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:08:56 PM
3	6.791	1.608mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:11:01 PM
4	6.523	1.540mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:13:06 PM
5	6.666	1.576mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:15:11 PM

Mean Area 6.827
Mean Conc. 1.617mg/L



Sample

Sample Name: 280-109781-b-10
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

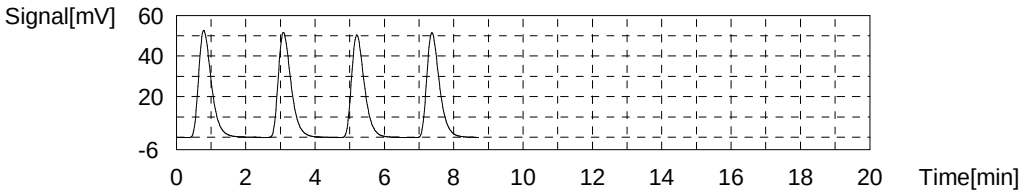
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:34.01mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.8	34.71mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:23:50 PM
2	134.2	34.05mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:26:07 PM
3	131.8	33.44mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:28:29 PM
4	133.3	33.82mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:30:48 PM

Mean Area 134.0
Mean Conc. 34.01mg/L



Sample

Sample Name: 280-109781-b-11
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

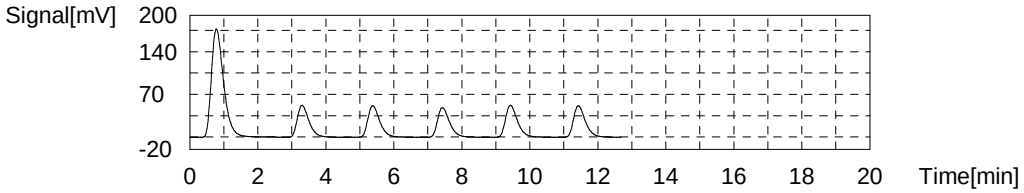
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	2.000	NPOC:191.0mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	448.7	228.3mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:39:42 PM
2	127.1	190.1mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:41:57 PM
3	127.0	190.0mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:44:11 PM
4	120.3	180.0mg/L	17uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:46:22 PM
5	129.5	193.7mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:48:33 PM
6	127.0	190.0mg/L	17uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:50:46 PM

Mean Area 127.7
Mean Conc. 191.0mg/L



Sample

Sample Name: 280-109781-b-12
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

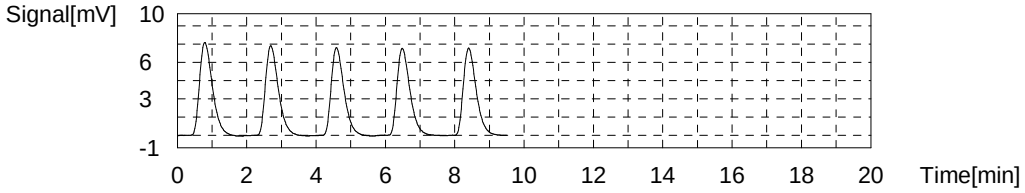
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.660mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.00	4.972mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 3:58:57 PM
2	19.25	4.781mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:01:02 PM
3	18.70	4.640mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:03:07 PM
4	18.59	4.612mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:05:12 PM
5	18.57	4.607mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:07:17 PM

Mean Area 18.78
Mean Conc. 4.660mg/L



Sample

Sample Name: 280-109781-b-13
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

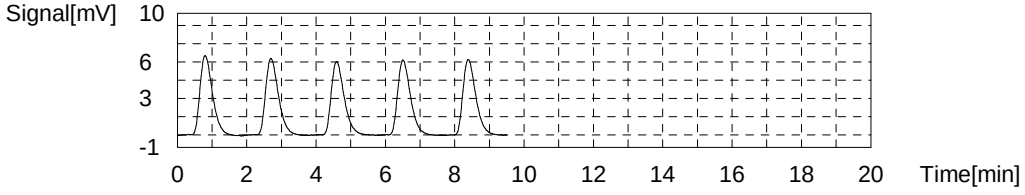
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.948mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.55	4.093mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:15:32 PM
2	16.27	4.022mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:17:38 PM
3	15.72	3.882mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:19:43 PM
4	15.88	3.922mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:21:48 PM
5	16.06	3.968mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:23:53 PM

Mean Area 15.98
Mean Conc. 3.948mg/L



Sample

Sample Name: 280-109781-b-14
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

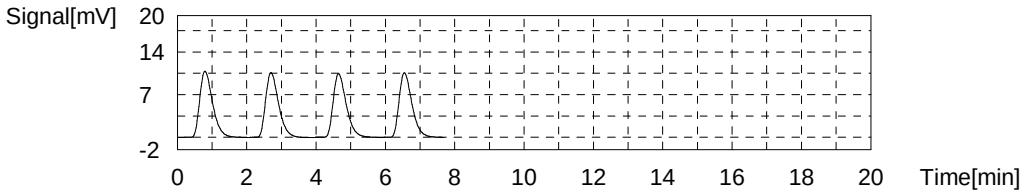
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.957mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.28	7.080mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:32:08 PM
2	27.90	6.983mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:34:16 PM
3	27.45	6.869mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:36:21 PM
4	27.56	6.897mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:38:28 PM

Mean Area 27.80
Mean Conc. 6.957mg/L



Sample

Sample Name: 280-109781-b-15
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

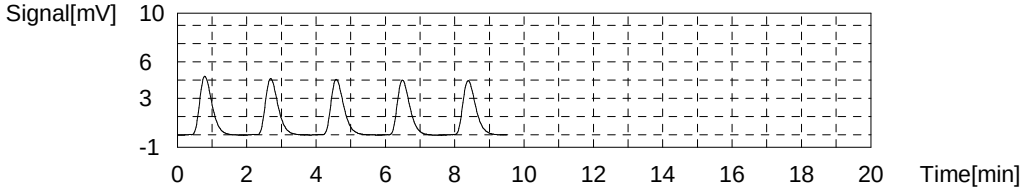
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.810mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.96	2.924mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:46:44 PM
2	11.66	2.848mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:48:49 PM
3	11.61	2.835mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:50:54 PM
4	11.34	2.766mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:52:59 PM
5	11.44	2.792mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 4:55:04 PM

Mean Area 11.51
Mean Conc. 2.810mg/L



Sample

Sample Name: MS 280-109781-b-15
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

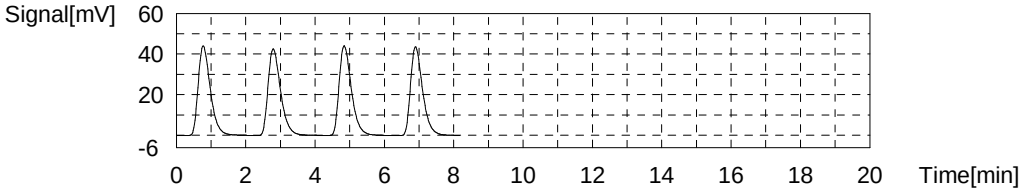
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:27.53mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.3	27.46mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:03:26 PM
2	108.7	27.56mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:05:40 PM
3	110.1	27.91mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:07:54 PM
4	107.3	27.20mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:10:08 PM

Mean Area 108.6
Mean Conc. 27.53mg/L



Sample

Sample Name: MSD 280-109781-b-15
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

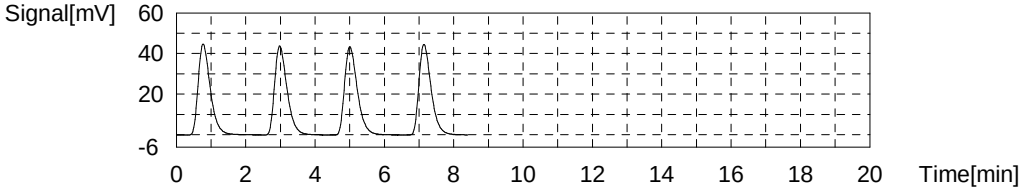
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:28.02mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.6	27.79mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:18:42 PM
2	110.2	27.94mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:20:54 PM
3	112.1	28.42mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:23:14 PM
4	110.1	27.91mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:25:27 PM

Mean Area 110.5
Mean Conc. 28.02mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

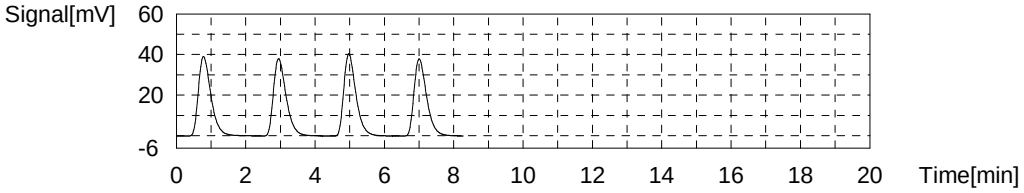
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.90mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.19	25.14mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:33:59 PM
2	97.71	24.76mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:36:12 PM
3	99.43	25.20mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:38:24 PM
4	96.75	24.52mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:40:38 PM

Mean Area 98.27
Mean Conc. 24.90mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

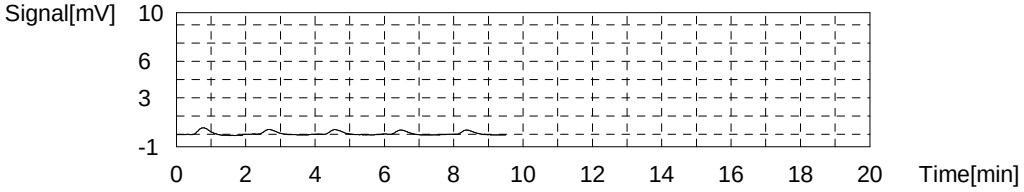
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1116mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.398	0.2347mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:48:54 PM
2	0.9627	0.1238mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:50:59 PM
3	0.9330	0.1162mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:53:04 PM
4	0.8872	0.1046mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:55:09 PM
5	0.8764	0.1018mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 5:57:14 PM

Mean Area 0.9148
Mean Conc. 0.1116mg/L



Sample

Sample Name: 280-109781-b-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

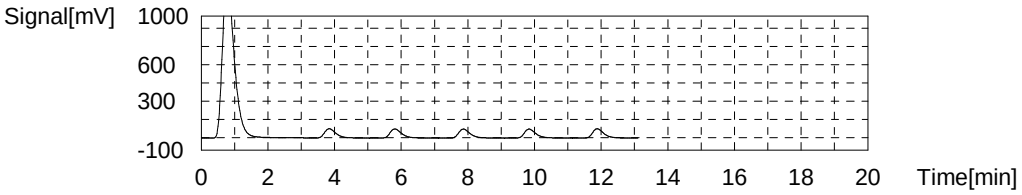
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:759.4mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3188	811.7mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:06:39 PM
2	182.8	789.3mg/L	50uL	17	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:13:50 PM
3	179.1	773.2mg/L	50uL	17		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:16:04 PM
4	173.8	750.3mg/L	50uL	17		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:18:14 PM
5	174.7	754.2mg/L	50uL	17		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:20:27 PM
6	176.0	759.8mg/L	50uL	17		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:22:37 PM

Mean Area 175.9
Mean Conc. 759.4mg/L



Sample

Sample Name: 280-109781-b-17
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

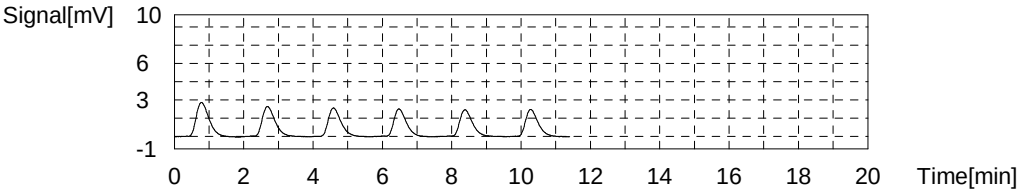
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.317mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.100	1.687mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:30:52 PM
2	6.190	1.455mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:32:57 PM
3	5.994	1.405mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:35:02 PM
4	5.576	1.299mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:37:07 PM
5	5.440	1.264mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:39:12 PM
6	5.582	1.300mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:41:17 PM

Mean Area 5.648
Mean Conc. 1.317mg/L



Sample

Sample Name: 280-109781-b-19
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

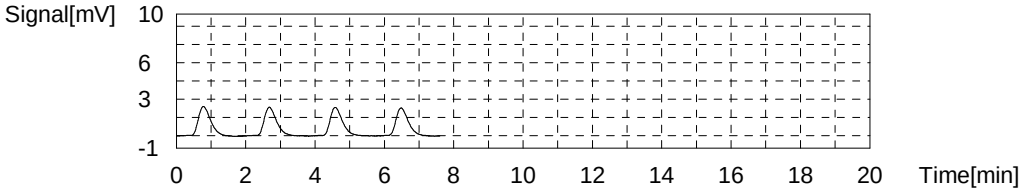
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.329mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.822	1.361mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:49:28 PM
2	5.698	1.330mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:51:33 PM
3	5.663	1.321mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:53:38 PM
4	5.601	1.305mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 6:55:43 PM

Mean Area 5.696
Mean Conc. 1.329mg/L



Sample

Sample Name: 280-109781-b-20
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

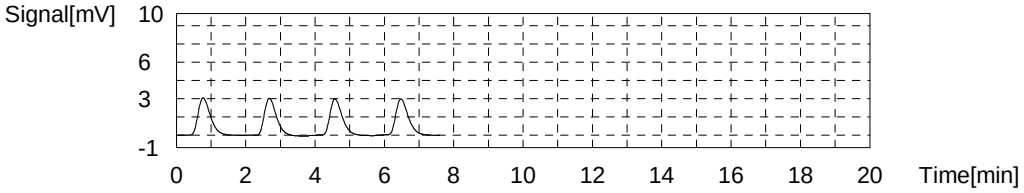
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.768mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.540	1.799mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:04:19 PM
2	7.383	1.759mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:06:24 PM
3	7.333	1.746mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:08:29 PM
4	7.419	1.768mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:10:34 PM

Mean Area 7.419
Mean Conc. 1.768mg/L



Sample

Sample Name: 280-109781-b-21
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

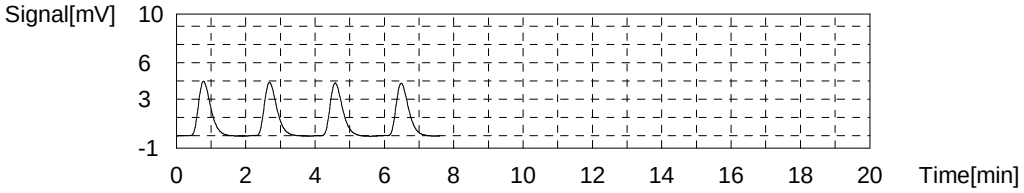
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.670mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.08	2.700mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:18:51 PM
2	11.06	2.695mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:20:56 PM
3	10.94	2.664mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:23:01 PM
4	10.76	2.619mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:25:07 PM

Mean Area 10.96
Mean Conc. 2.670mg/L



Sample

Sample Name: LCS
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

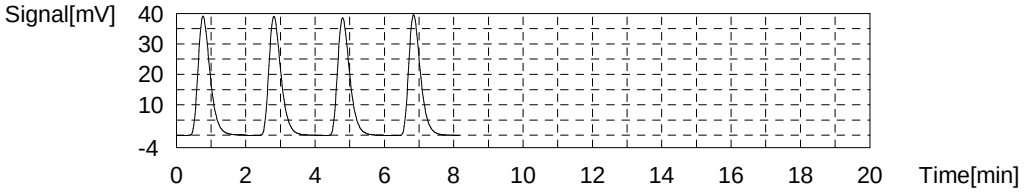
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.18mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	95.35	24.16mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:33:32 PM
2	96.11	24.35mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:35:41 PM
3	95.01	24.07mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:37:56 PM
4	95.33	24.15mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:40:12 PM

Mean Area 95.45
Mean Conc. 24.18mg/L



Sample

Sample Name: MB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

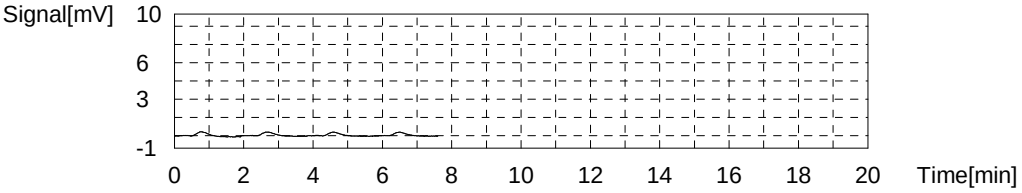
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.06015mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7819	0.07777mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:48:29 PM
2	0.7200	0.06200mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:50:34 PM
3	0.6749	0.05052mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:52:39 PM
4	0.6740	0.05029mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 7:54:44 PM

Mean Area 0.7127
Mean Conc. 0.06015mg/L



Sample

Sample Name: TIC
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

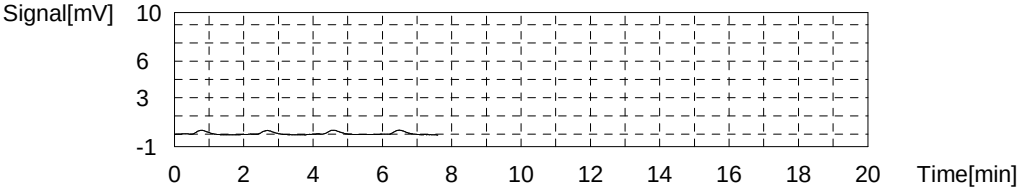
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.07570mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7490	0.06939mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:03:01 PM
2	0.7403	0.06717mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:05:06 PM
3	0.7828	0.07800mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:07:11 PM
4	0.8231	0.08826mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:09:16 PM

Mean Area 0.7738
Mean Conc. 0.07570mg/L



Sample

Sample Name: 280-109781-b-22
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

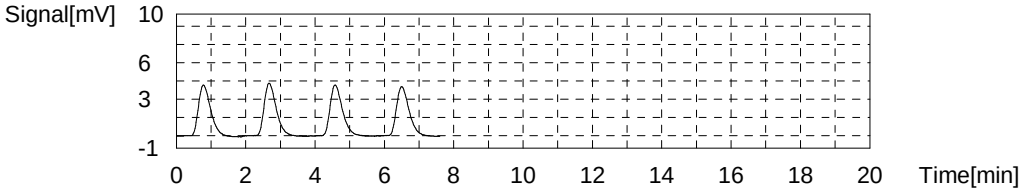
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.509mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.28	2.496mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:17:33 PM
2	10.51	2.555mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:19:38 PM
3	10.35	2.514mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:21:43 PM
4	10.18	2.471mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:23:48 PM

Mean Area 10.33
Mean Conc. 2.509mg/L



Sample

Sample Name: 280-109781-b-23
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

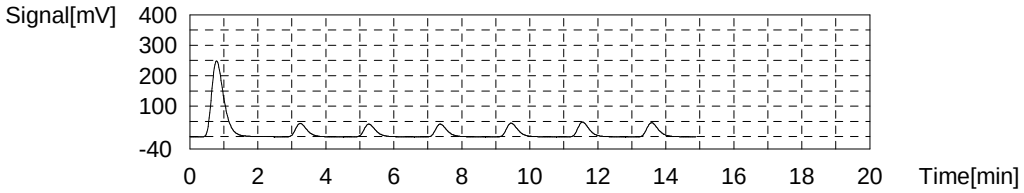
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:109.9mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	632.2	160.9mg/L	50uL	1	R	TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:32:40 PM
2	105.7	112.0mg/L	12uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:34:52 PM
3	100.9	106.9mg/L	12uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:37:09 PM
4	100.1	106.1mg/L	12uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:39:25 PM
5	107.9	114.4mg/L	12uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:41:42 PM
6	115.0	121.9mg/L	12uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:43:55 PM
7	112.8	119.6mg/L	12uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:48:30 PM

Mean Area 103.7
Mean Conc. 109.9mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

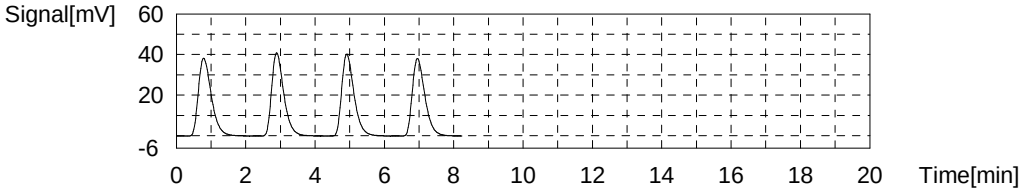
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.30mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	100.6	25.50mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:56:54 PM
2	100.7	25.52mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 8:59:06 PM
3	100.4	25.44mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:01:19 PM
4	97.66	24.75mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:03:34 PM

Mean Area 99.84
Mean Conc. 25.30mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

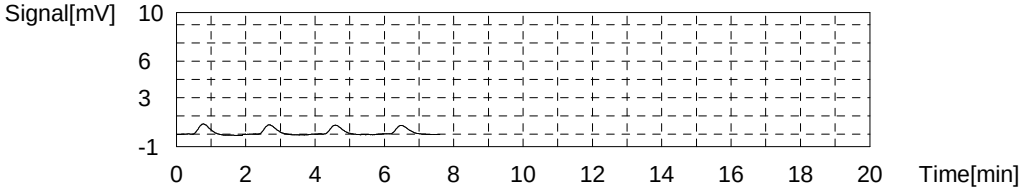
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.3489mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.960	0.3778mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:11:51 PM
2	1.845	0.3485mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:13:56 PM
3	1.813	0.3403mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:16:01 PM
4	1.769	0.3291mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:18:06 PM

Mean Area 1.847
Mean Conc. 0.3489mg/L



Sample

Sample Name: 280-109819-a-7
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

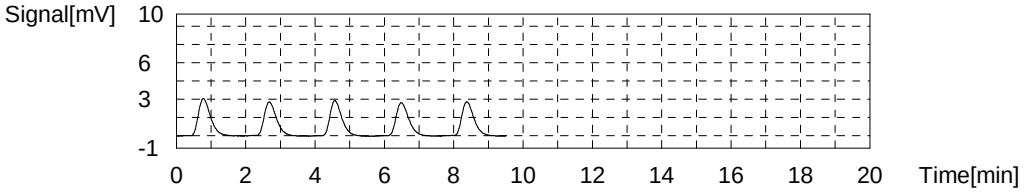
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.606mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.463	1.779mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:26:23 PM
2	6.735	1.594mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:28:28 PM
3	6.872	1.629mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:30:33 PM
4	6.829	1.618mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:32:38 PM
5	6.691	1.582mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:34:43 PM

Mean Area 6.782
Mean Conc. 1.606mg/L



Sample

Sample Name: 280-109819-a-8
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

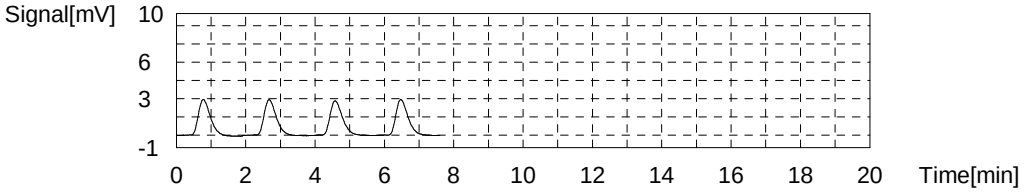
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.670mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.070	1.679mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:42:59 PM
2	7.050	1.674mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:45:04 PM
3	6.992	1.659mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:47:10 PM
4	7.027	1.668mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:49:15 PM

Mean Area 7.035
Mean Conc. 1.670mg/L



Sample

Sample Name: 280-109977-a-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

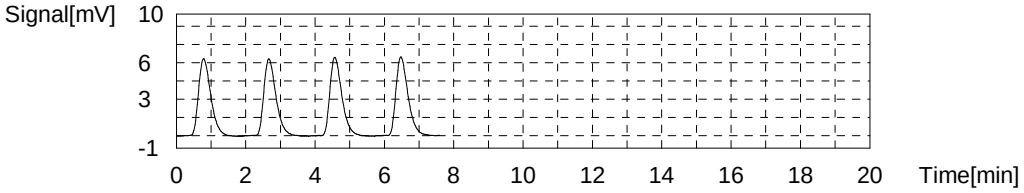
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.842mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.66	3.866mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:57:32 PM
2	15.31	3.777mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 9:59:37 PM
3	15.58	3.846mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:01:42 PM
4	15.71	3.879mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:03:47 PM

Mean Area 15.57
Mean Conc. 3.842mg/L



Sample

Sample Name: 280-109977-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

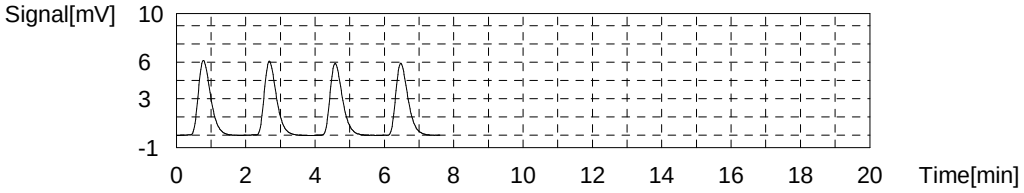
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.656mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.21	3.752mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:12:04 PM
2	14.88	3.668mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:14:09 PM
3	14.69	3.619mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:16:14 PM
4	14.56	3.586mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:18:19 PM

Mean Area 14.84
Mean Conc. 3.656mg/L



Sample

Sample Name: 280-109977-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

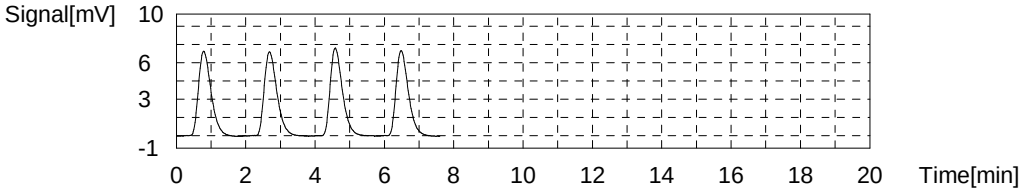
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.365mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.69	4.383mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:26:36 PM
2	17.61	4.363mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:28:41 PM
3	17.77	4.404mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:30:46 PM
4	17.41	4.312mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:32:51 PM

Mean Area 17.62
Mean Conc. 4.365mg/L



Sample

Sample Name: MS 280-109977-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

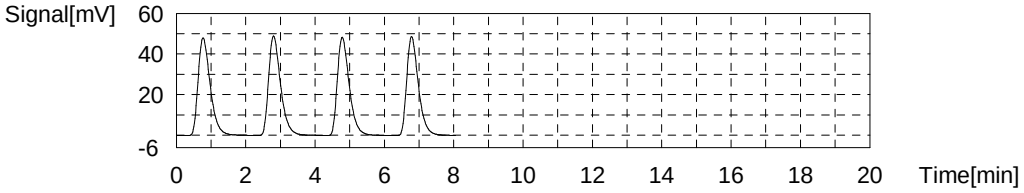
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:29.69mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.7	29.85mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:41:16 PM
2	119.1	30.21mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:43:26 PM
3	116.3	29.49mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:45:37 PM
4	115.2	29.21mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:47:50 PM

Mean Area 117.1
Mean Conc. 29.69mg/L



Sample

Sample Name: MSD 280-109977-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

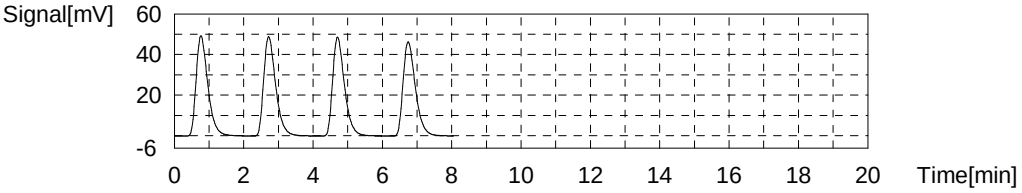
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:29.63mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	116.5	29.54mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:56:10 PM
2	118.6	30.08mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 10:58:20 PM
3	116.6	29.57mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:00:33 PM
4	115.6	29.32mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:02:49 PM

Mean Area 116.8
Mean Conc. 29.63mg/L



Sample

Sample Name: 280-109977-a-5
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

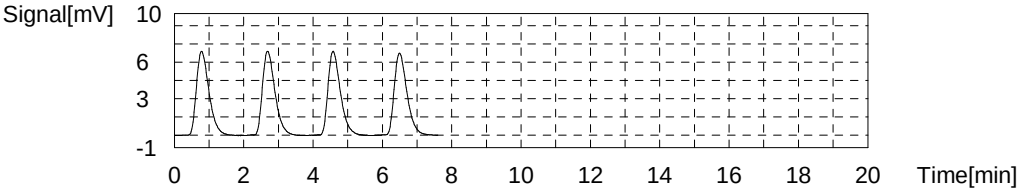
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.301mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.50	4.335mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:11:06 PM
2	17.38	4.304mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:13:11 PM
3	17.35	4.297mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:15:16 PM
4	17.24	4.269mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:17:21 PM

Mean Area 17.37
Mean Conc. 4.301mg/L



Sample

Sample Name: 280-109832-a-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

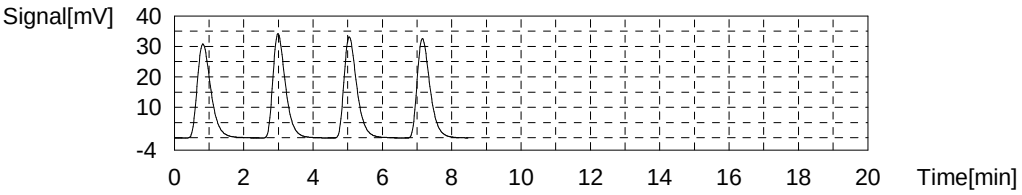
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:21.74mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	85.03	21.53mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:25:56 PM
2	87.13	22.07mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:28:10 PM
3	86.16	21.82mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:30:27 PM
4	85.15	21.56mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:32:45 PM

Mean Area 85.87
Mean Conc. 21.74mg/L



Sample

Sample Name: 280-109832-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

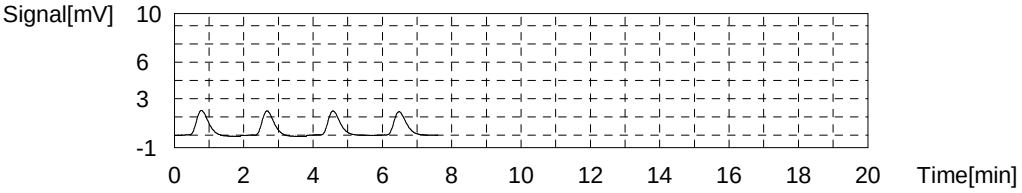
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.103mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.923	1.132mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:41:02 PM
2	4.790	1.098mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:43:07 PM
3	4.757	1.090mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:45:12 PM
4	4.767	1.093mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:47:17 PM

Mean Area 4.809
Mean Conc. 1.103mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

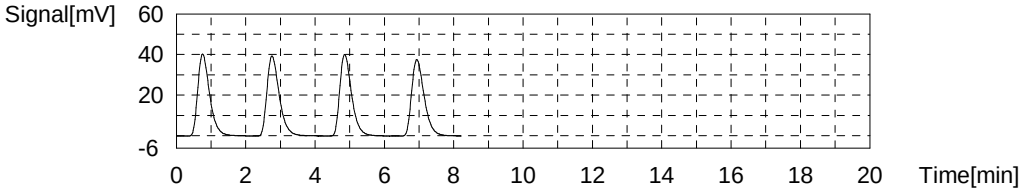
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.54mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	96.80	24.53mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:55:39 PM
2	98.03	24.84mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/6/2018 11:57:56 PM
3	96.54	24.46mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:00:11 AM
4	95.99	24.32mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:02:26 AM

Mean Area 96.84
Mean Conc. 24.54mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

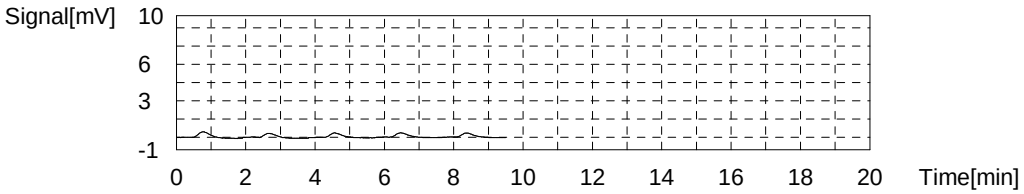
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.09009mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.089	0.1560mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:10:43 AM
2	0.7722	0.07530mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:12:48 AM
3	0.8544	0.09623mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:14:53 AM
4	0.8761	0.1018mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:16:58 AM
5	0.8184	0.08706mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:19:03 AM

Mean Area 0.8303
Mean Conc. 0.09009mg/L



Sample

Sample Name: 280-109832-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

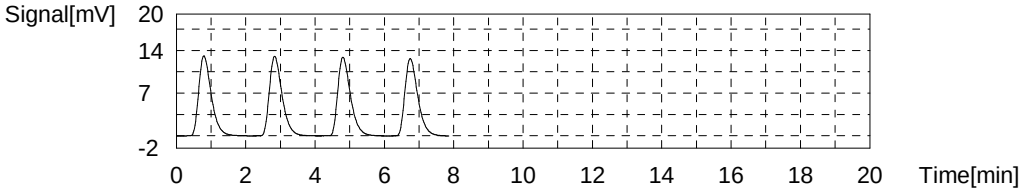
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:8.344mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	33.26	8.348mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:27:27 AM
2	33.55	8.422mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:29:38 AM
3	33.11	8.310mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:31:45 AM
4	33.05	8.295mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:33:50 AM

Mean Area 33.24
Mean Conc. 8.344mg/L



Sample

Sample Name: MS 280-109832-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

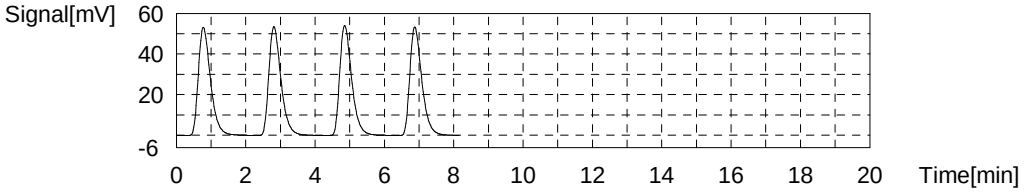
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:33.23mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	131.1	33.26mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:42:15 AM
2	131.8	33.44mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:44:29 AM
3	130.9	33.21mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:46:41 AM
4	130.1	33.01mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:48:55 AM

Mean Area 131.0
Mean Conc. 33.23mg/L



Sample

Sample Name: MSD C280-109832-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

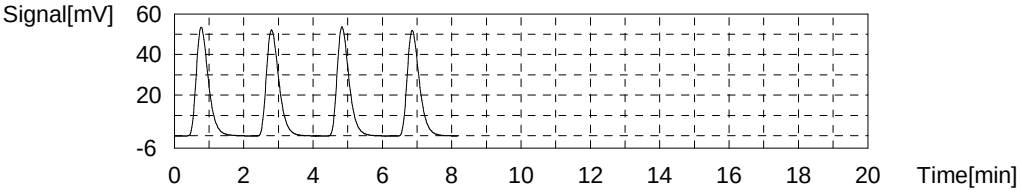
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:33.20mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	131.1	33.26mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:57:20 AM
2	133.1	33.77mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 12:59:34 AM
3	130.5	33.11mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:01:46 AM
4	128.8	32.68mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:04:02 AM

Mean Area 130.9
Mean Conc. 33.20mg/L



Sample

Sample Name: 280-109832-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

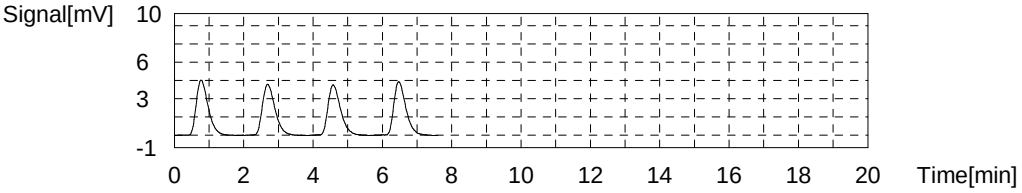
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.579mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.90	2.654mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:12:20 AM
2	10.53	2.560mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:14:25 AM
3	10.42	2.532mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:16:30 AM
4	10.57	2.570mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:18:35 AM

Mean Area 10.61
Mean Conc. 2.579mg/L



Sample

Sample Name: 280-109832-a-5
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

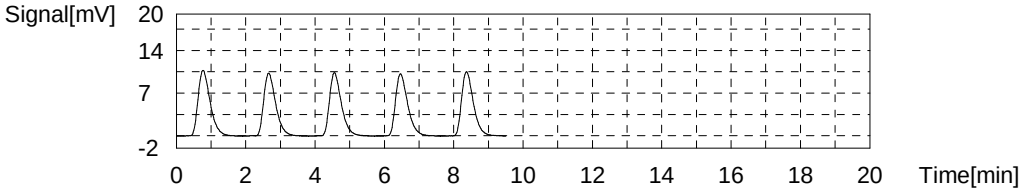
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.247mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.32	6.581mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:26:53 AM
2	24.91	6.222mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:28:58 AM
3	24.86	6.209mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:31:03 AM
4	25.05	6.257mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:33:08 AM
5	25.21	6.298mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:35:13 AM

Mean Area 25.01
Mean Conc. 6.247mg/L



Sample

Sample Name: 280-109832-a-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

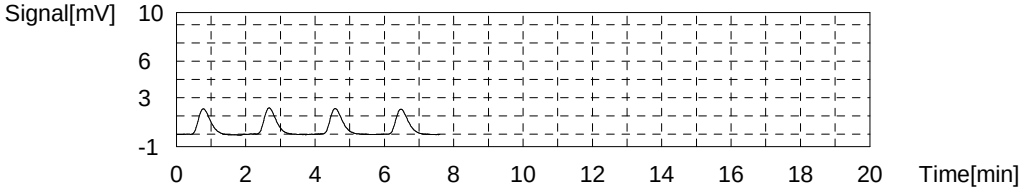
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.187mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.113	1.181mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:43:30 AM
2	5.171	1.195mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:45:35 AM
3	5.146	1.189mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:47:40 AM
4	5.115	1.181mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:49:46 AM

Mean Area 5.136
Mean Conc. 1.187mg/L



Sample

Sample Name: 280-109832-a-10
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

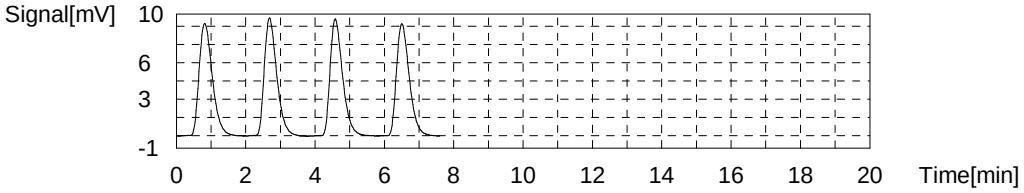
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.048mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.57	6.135mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 1:58:04 AM
2	24.36	6.082mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:00:09 AM
3	24.15	6.028mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:02:14 AM
4	23.83	5.947mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:04:19 AM

Mean Area 24.23
Mean Conc. 6.048mg/L



Sample

Sample Name: 280-109832-a-11
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

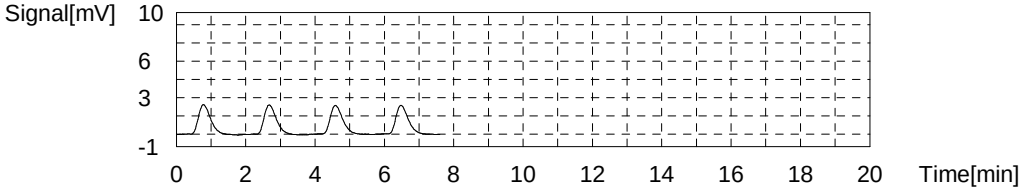
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.368mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.854	1.369mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:12:37 AM
2	5.904	1.382mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:14:42 AM
3	5.844	1.367mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:16:47 AM
4	5.788	1.353mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:18:52 AM

Mean Area 5.848
Mean Conc. 1.368mg/L



Sample

Sample Name: 280-109832-a-12
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

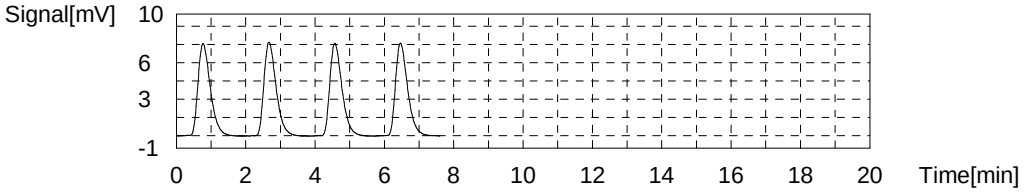
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.639mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.79	4.663mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:27:10 AM
2	18.87	4.684mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:29:15 AM
3	18.62	4.620mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:31:20 AM
4	18.50	4.590mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:33:25 AM

Mean Area 18.70
Mean Conc. 4.639mg/L



Sample

Sample Name: 280-109832-a-13
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

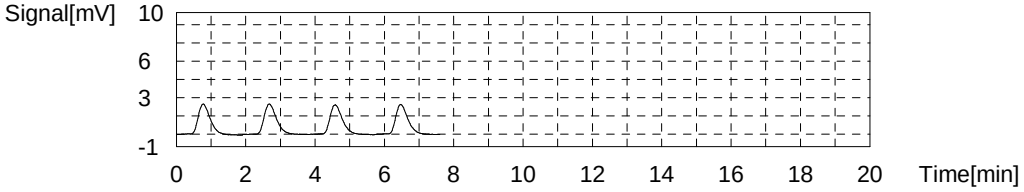
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.399mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.905	1.382mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:41:43 AM
2	6.136	1.441mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:43:48 AM
3	5.921	1.386mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:45:53 AM
4	5.913	1.384mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:47:58 AM

Mean Area 5.969
Mean Conc. 1.399mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

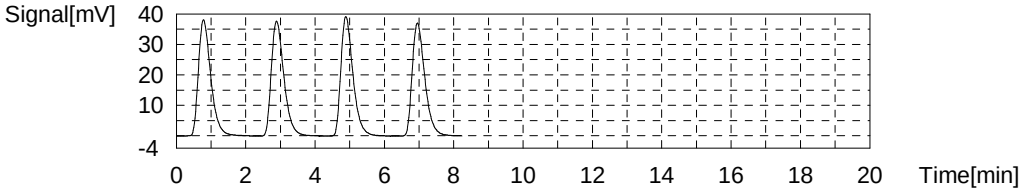
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.20mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	95.01	24.07mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:56:28 AM
2	96.12	24.35mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 2:58:40 AM
3	96.15	24.36mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:00:54 AM
4	94.80	24.02mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:03:09 AM

Mean Area 95.52
Mean Conc. 24.20mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

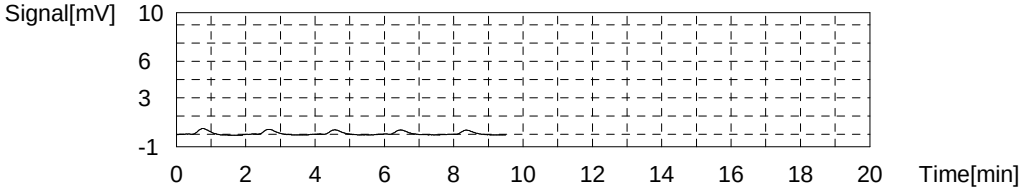
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1037mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.111	0.1616mg/L	50uL	1	E	TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:11:27 AM
2	0.9802	0.1283mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:13:32 AM
3	0.8685	0.09982mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:15:37 AM
4	0.8383	0.09213mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:17:42 AM
5	0.8472	0.09439mg/L	50uL	1		TOC2.2018_05_16_15_10_34.cal	6/7/2018 3:19:47 AM

Mean Area 0.8836
Mean Conc. 0.1037mg/L



TOC-V Cal Curve Information
C:¥TOC3201¥CalCurves¥TOC2.2018_05_16_15_10_34.cal

Date of Creation 4:13:34 PM 5/16/2018
User ad
System SHI2

Cal. Curve

Sample Name: CAL
Sample ID: Untitled
Object ID 0A-103108-41445340-133EE241DBEB-0000
Cal. Curve: TOC2.2018_05_16_15_10_34.cal
Status Completed
Comment:

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.4262	50uL	1	*******		5/16/2018 3:18:35 PM
2	0.3988	50uL	1	*******		5/16/2018 3:20:40 PM

Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 0.4125
SD Area 0.01937
CV Area 4.70%
Vial 1

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.211	50uL	1	*******		5/16/2018 3:28:59 PM
2	4.301	50uL	1	*******		5/16/2018 3:31:04 PM

Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 4.256
SD Area 0.06364
CV Area 1.50%
Vial 2

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.08	50uL	1	*******		5/16/2018 3:39:24 PM
2	20.12	50uL	1	*******		5/16/2018 3:41:29 PM

Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 20.10
SD Area 0.02828
CV Area 0.14%
Vial 3

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	39.97	50uL	1	*******		5/16/2018 3:49:54 PM
2	40.14	50uL	1	*******		5/16/2018 3:52:00 PM

Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 40.06
SD Area 0.1202
CV Area 0.30%
Vial 4

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.60	50uL	1	*******		5/16/2018 4:00:25 PM
2	98.60	50uL	1	*******		5/16/2018 4:02:43 PM

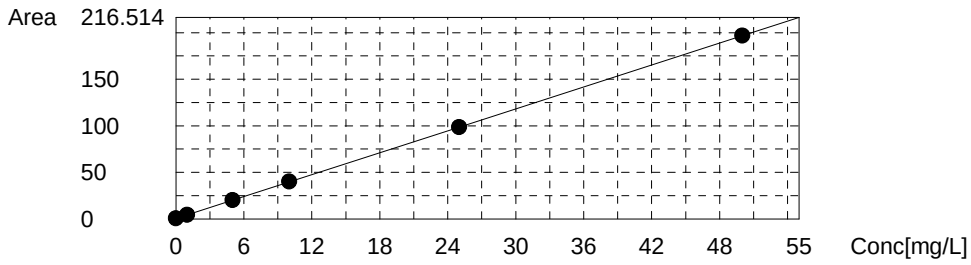
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 98.60
SD Area 0.000
CV Area 0.00%
Vial 5

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	196.3	50uL	1	*******		5/16/2018 4:11:13 PM
2	197.3	50uL	1	*******		5/16/2018 4:13:34 PM

Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 196.8
SD Area 0.7071
CV Area 0.36%
Vial 6

Slope: 3.927
Intercept 0.4765
r^2 1.0000
r 1.0000
Zero Shift No



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TOC Data Review Checklist

SOP No. NC-0006		Instrument ID: SHI2
LIMS Prep Batch#: N/A	LIMS Analytical Batch# 417740	ICAL Batch N/A
Analyst(s)/1st Reviewer/Date: 6/7/18		QC Type (circle): ~~Standard~~ LCSD DOD Q4 DoD Q5 QAPP_____ Other_____
Method (circle): ~~9060~~ 5310B		
Matrix (circle): ~~Water~~ Solid Waste Leachate		Circle all that apply: (Total) Field Filtered Lab Filtered

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable? (List NCM #)
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)			/	/	
2. Number of Points: 1st order: 5 standards; 2nd order: 6 standards	/			/	
3. Linearity and intercept: r ≥ 0.995 (r^2≥0.99) |x-intercept| < ½ RL	/			/	
4. ICV, second source: run before samples 90-110% recovery	/			/	
5. CCV: 10% frequency & closing 90-110% recovery	/			/	
6. TC and TIC Data entered correctly Identified in raw data Associated with correct QC			/	/	
7. ICB: run before samples, CCB: 10% frequency, & closing	/			/	
B. Client Sample and QC Sample Results					
8. Samples with results > linear range diluted and reanalyzed?	/			/	Comments:
9. On-instrument response of diluted sample is >10X |MB| on-instrument response	/			/	Comments:
C. Preparation/Matrix QC					
10. If samples are lab filtered, QC samples filtered?	/			/	
11. Method Blank: one per preparation batch	/			/	*If no, list blank ID & explain:*
12. LCS: one per preparation batch 90-110% recovery	/			/	*If no, list LCS ID & explain:*
13. MS/MSD or MS/Dup frequency (Determine correct frequency by method or reference SOP) A pair per 20 samples or a pair per 10 samples	/			/	*If no, list QC ID & explain:*

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
D. Raw Data & TALS Data Entry					
14. Raw Data/Run Log					
a. Unused data is clearly identified and reason not used is stated	✓			✓	
b. All cross outs are initialed and dated	✓			✓	
c. Out of control QC is clearly identified	✓			✓	
d. Any data that has a qualifier is commented on with appropriate action taken	✓			✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature f. Analyst initials/signature provided	✓			✓	
15. TALS Sample List					
a. LIMS Sample IDs / Containers are correct	✓			✓	
b. Method and matrix are correct	✓			✓	
c. Date and time match raw data	✓			✓	
d. Dilutions are correct	✓			✓	
e. Correct suffix (DU, MS, MSD) designated (where applicable)	✓			✓	
16. TALS Worksheet Tab is complete and correct	✓			✓	
17. Sample pH, presence of chlorine/sulfide recorded?	✓			✓	
18. NCM written for any samples needing preservation at the bench?	✓			✓	
19. TALS Reagent Tab is complete and correct	✓			✓	
20. TALS QC Links Tab is correct	✓			✓	
21. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓			✓	
b. All reported analytes are marked Primary or Secondary	✓			✓	
22. TALS Batch Information Screen documentation is complete	✓			✓	
23. Historical Data Checker: Check historical data. Print charts for outliers. Take corrective action as appropriate	✓			✓	
24. TALS Status set to appropriate review level	✓			✓	
E. Final Report and NCMs (2nd level review only)				✓	
25. Were all job/project requirements met?				✓	
26. Results for samples and QC correct on final report?				✓	
27. Are all necessary scanned documents in TALS?				✓	
28. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?				✓	

Comments: _____

2nd Reviewer: _____ **Review Date:** 6/8/18

pH 6/7/18 AD

9060 TOC

	Analysis	Sample Name	Manual Dilut	Result	Notes	Date / Time	Vial
1*	NPOC	CAL 110716	1.000	<2			1, 2, 3, 4, 5, 6
2*	NPOC	ICV	1.000	<2			7
3*	NPOC	ICB	1.000	<2			8
4*	NPOC	LCS	1.000	<2			9
5*	NPOC	LCSD	1.000	<2			10
6*	NPOC	MB	1.000	<2			11
7*	NPOC	TIC	1.000	<2			12
8*	NPOC	280-109842-b-1	1.000	<2			13
9*	NPOC	280-109842-b-2	1.000	<2			14
10*	NPOC	280-109842-b-3	1.000	<2			15
11*	NPOC	MS 280-109842-b-3	1.000	<2			16
12*	NPOC	MSD 280-109842-b-3	1.000	<2			17
13*	NPOC	280-109842-b-4	1.000	<2			18
14*	NPOC	280-109842-b-5	1.000	<2			19
15*	NPOC	280-109842-b-6	1.000	<2			20
16*	NPOC	280-109842-b-7	1.000	<2			21
17*	NPOC	CCV	1.000	<2			22
18*	NPOC	CCB	1.000	<2			23
19*	NPOC	280-109842-b-8	1.000	<2			24
20*	NPOC	280-109842-b-9	1.000	<2			25
21*	NPOC	MS 280-109842-b-9	1.000	<2			26
22*	NPOC	MSD 280-109842-b-9	1.000	<2			27
23*	NPOC	280-109842-b-10	1.000	<2			28
24*	NPOC	280-109842-b-11	1.000	<2			29
25*	NPOC	280-109842-b-12	1.000	<2			30
26*	NPOC	280-109842-b-13	1.000	<2			31
27*	NPOC	280-109842-b-14	1.000	<2			32
28*	NPOC	280-109842-b-15	1.000	<2			33
29*	NPOC	CCV	1.000	<2			34
30*	NPOC	CCB	1.000	<2			35
31*	NPOC	280-109848-b-1	1.000	<2			36
32*	NPOC	280-109851-a-3	1.000	<2			37
33*	NPOC	280-109851-a-4	1.000	<2			38
34*	NPOC	280-109856-i-6	Sx ~~1.000~~	<2	color		39
35*	NPOC	280-109977-a-2	1.000	<2			40
36*	NPOC	LCS	1.000	<2			41
37*	NPOC	LCSD	1.000	<2			42
38*	NPOC	MB	1.000	<2			43
39*	NPOC	TIC	1.000	<2			44
40*	NPOC	280-109865-c-1	1.000	<2			45
41*	NPOC	CCV	1.000	<2			46
42*	NPOC	CCB	1.000	<2			47
43*	NPOC	280-109888-g-1	1.000	<2			48
44*	NPOC	280-109888-g-6	1.000	<2			49
45*	NPOC	280-109888-g-7	1.000	<2			50
46*	NPOC	280-109851-a-2	1.000	<2			51
47*	NPOC	MS 280-109851-a-2	1.000	<2			52
48*	NPOC	280-109895-b-4	1.000	<2			53
49*	NPOC	280-109906-a-2	1.000	<2			54
50*	NPOC	280-109906-a-6	1.000	<2			55
51*	NPOC	280-109906-a-8	1.000	<2			56

pH AD 6/7/18

	Analysis	Sample Name	Manual Diluti	Result	Notes	Date / Time	Vial
52*	NPOC	CCV	1.000	< 2			57
53*	NPOC	CCB	1.000	< 2			58
54*	NPOC	280-109907-a-2	1.000	< 2			59
55*	NPOC	280-109907-a-3	1.000	< 2			60
56*	NPOC	280-109907-a-4	1.000	< 2			61
57*	NPOC	280-109907-a-5	1.000	< 2			62
58*	NPOC	280-110124-b-7	1.000	< 2			63
59*	NPOC	280-109895-b-3	1.000	< 2			64
60*	NPOC	MS 280-109895-b-3	1.000	< 2			65
61*	NPOC	MSD 280-109895-b-3	1.000	< 2			66
62*	NPOC	MSD 280-109851-a-2	1.000	< 2			67
63*	NPOC	CCV	1.000	< 2			68
64*	NPOC	CCB	1.000	< 2			69

	Analysis	Sample Name	Manual Diluti	Result	Notes	Date / Time	Vial
1	NPOC	CAL 110716	1.000		Cal Curve O	6/7/2018 3:50:52 P	1, 2, 3, 4, 5, 6
2	NPOC	ICV	1.000	NPOC:18.73mg/L		6/7/2018 4:05:34 P	7
3	NPOC	ICB	1.000	NPOC:0.1292mg/L		6/7/2018 4:20:17 P	8
4	NPOC	LCS	1.000	NPOC:24.12mg/L		6/7/2018 4:37:04 P	9
5	NPOC	LCSD	1.000	NPOC:24.07mg/L		6/7/2018 4:51:50 P	10
6	NPOC	MB	1.000	NPOC:0.1299mg/L		6/7/2018 5:06:33 P	11
7	NPOC	TIC	1.000	NPOC:0.1799mg/L		6/7/2018 5:21:16 P	12
8	NPOC	280-109842-b-1	1.000	NPOC:2.215mg/L		6/7/2018 5:35:59 P	13
9	NPOC	280-109842-b-2	1.000	NPOC:1.281mg/L		6/7/2018 5:52:46 P	14
10	NPOC	280-109842-b-3	1.000	NPOC:1.583mg/L		6/7/2018 6:09:32 P	15
11	NPOC	MS 280-109842-b-3	1.000	NPOC:25.27mg/L		6/7/2018 6:24:14 P	16
12	NPOC	MSD 280-109842-b-3	1.000	NPOC:25.34mg/L		6/7/2018 6:38:57 P	17
13	NPOC	280-109842-b-4	1.000	NPOC:1.939mg/L		6/7/2018 6:57:48 P	18
14	NPOC	280-109842-b-5	1.000	NPOC:6.747mg/L		6/7/2018 7:12:25 P	19
15	NPOC	280-109842-b-6	1.000	NPOC:1.613mg/L		6/7/2018 7:27:08 P	20
16	NPOC	280-109842-b-7	1.000	NPOC:1.755mg/L		6/7/2018 7:45:59 P	21
17	NPOC	CCV	1.000	NPOC:24.09mg/L		6/7/2018 8:00:47 P	22
18	NPOC	CCB	1.000	NPOC:0.1424mg/L		6/7/2018 8:15:30 P	23
19	NPOC	280-109842-b-8	1.000	NPOC:3.521mg/L		6/7/2018 8:30:13 P	24
20	NPOC	280-109842-b-9	1.000	NPOC:3.679mg/L		6/7/2018 8:44:56 P	25
21	NPOC	MS 280-109842-b-9	1.000	NPOC:27.39mg/L		6/7/2018 8:59:39 P	26
22	NPOC	MSD 280-109842-b-9	1.000	NPOC:27.52mg/L		6/7/2018 9:14:22 P	27
23	NPOC	280-109842-b-10	1.000	NPOC:1.382mg/L		6/7/2018 9:31:09 P	28
24	NPOC	280-109842-b-11	1.000	NPOC:4.426mg/L		6/7/2018 9:45:51 P	29
25	NPOC	280-109842-b-12	1.000	NPOC:1.423mg/L		6/7/2018 10:04:42	30
26	NPOC	280-109842-b-13	1.000	NPOC:1.291mg/L		6/7/2018 10:21:23	31
27	NPOC	280-109842-b-14	1.000	NPOC:1.722mg/L		6/7/2018 10:40:14	32
28	NPOC	280-109842-b-15	1.000	NPOC:2.207mg/L		6/7/2018 10:56:55	33
29	NPOC	CCV	1.000	NPOC:24.25mg/L		6/7/2018 11:11:49	34
30	NPOC	CCB	1.000	NPOC:0.1774mg/L		6/7/2018 11:26:33	35
31	NPOC	280-109848-b-1	1.000	NPOC:1.525mg/L		6/7/2018 11:41:17	36
32	NPOC	280-109851-a-3	1.000	NPOC:6.753mg/L		6/7/2018 11:58:05	37
33	NPOC	280-109851-a-4	1.000	NPOC:5.009mg/L		6/8/2018 12:12:48	38
34	NPOC	280-109856-i-6	1.000	NPOC:37.70mg/L		6/8/2018 12:27:32	39
35	NPOC	280-109977-a-2	1.000	NPOC:5.406mg/L		6/8/2018 12:44:20	40
36	NPOC	LCS	1.000	NPOC:24.37mg/L		6/8/2018 12:59:11	41
37	NPOC	LCSD	1.000	NPOC:24.39mg/L		6/8/2018 1:13:55 A	42
38	NPOC	MB	1.000	NPOC:0.2161mg/L		6/8/2018 1:28:39 A	43
39	NPOC	TIC	1.000	NPOC:0.2260mg/L		6/8/2018 1:43:23 A	44
40	NPOC	280-109865-c-1	1.000	NPOC:9.269mg/L		6/8/2018 1:58:12 A	45
41	NPOC	CCV	1.000	NPOC:24.33mg/L		6/8/2018 2:13:15 A	46
42	NPOC	CCB	1.000	NPOC:0.1885mg/L		6/8/2018 2:27:59 A	47
43	NPOC	280-109888-g-1	1.000	NPOC:1.014mg/L		6/8/2018 2:46:51 A	48
44	NPOC	280-109888-g-6	1.000	NPOC:0.8953mg/L		6/8/2018 3:03:33 A	49
45	NPOC	280-109888-g-7	1.000	NPOC:0.3078mg/L		6/8/2018 3:18:16 A	50
46	NPOC	280-109851-a-2	1.000	NPOC:6.856mg/L		6/8/2018 3:33:00 A	51
47	NPOC	MS 280-109851-a-2	1.000	NPOC:31.22mg/L		6/8/2018 3:47:46 A	52
48	NPOC	280-109895-b-4	1.000	NPOC:0.2242mg/L		6/8/2018 4:04:34 A	53
49	NPOC	280-109906-a-2	1.000	NPOC:1.502mg/L		6/8/2018 4:21:21 A	54
50	NPOC	280-109906-a-6	1.000	NPOC:3.189mg/L		6/8/2018 4:38:08 A	55
51	NPOC	280-109906-a-8	1.000	NPOC:24.55mg/L		6/8/2018 4:52:55 A	56
52	NPOC	CCV	1.000	NPOC:24.64mg/L		6/8/2018 5:07:40 A	57
53	NPOC	CCB	1.000	NPOC:0.1903mg/L		6/8/2018 5:22:25 A	58

	Analysis	Sample Name	Manual Diluti	Result	Notes	Date / Time	Vial
54	NPOC	280-109907-a-2	1.000	NPOC:65.14mg/L		6/8/2018 5:39:13 A	59
55	NPOC	280-109907-a-3	1.000	NPOC:1.319mg/L		6/8/2018 5:56:01 A	60
56	NPOC	280-109907-a-4	1.000	NPOC:67.36mg/L		6/8/2018 6:12:48 A	61
57	NPOC	280-109907-a-5	1.000	NPOC:2.726mg/L		6/8/2018 6:29:37 A	62
58	NPOC	280-110124-b-7	1.000	NPOC:1.794mg/L		6/8/2018 6:48:28 A	63
59	NPOC	280-109895-b-3	1.000	NPOC:0.5273mg/L		6/8/2018 7:03:07 A	64
60	NPOC	MS 280-109895-b-3	1.000	NPOC:25.26mg/L		6/8/2018 7:17:52 A	65
61	NPOC	MSD 280-109895-b-3	1.000	NPOC:24.96mg/L		6/8/2018 7:32:37 A	66
62	NPOC	MSD 280-109851-a-2	1.000	NPOC:31.42mg/L		6/8/2018 7:51:29 A	67
63	NPOC	CCV	1.000	NPOC:24.36mg/L		6/8/2018 8:06:16 A	68
64	NPOC	CCB	1.000	NPOC:0.2112mg/L		6/8/2018 8:21:01 A	69

Instr.Information

System	TOC-V cpn 3
Instrument Options	TOC/ASI/
Catalyst	Regular Sensitivity

Cal. Curve

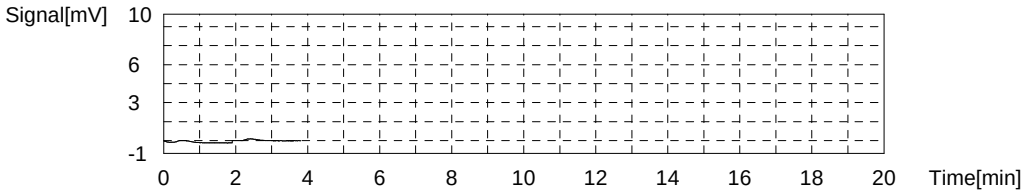
Sample Name:	CAL 110716
Sample ID:	Untitled
Cal. Curve:	TOC3.2018_06_07_14_45_57.cal
Status	Completed

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.3429	50uL	1	*******		6/7/2018 2:53:38 PM
2	0.2825	50uL	1	*******		6/7/2018 2:55:42 PM

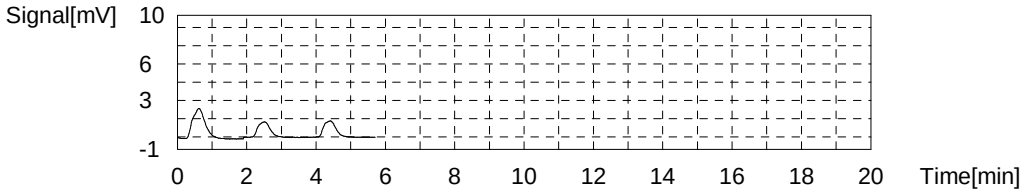
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 0.3127



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.249	50uL	1	*******	E	6/7/2018 3:04:16 PM
2	3.035	50uL	1	*******		6/7/2018 3:06:20 PM
3	3.180	50uL	1	*******		6/7/2018 3:08:24 PM

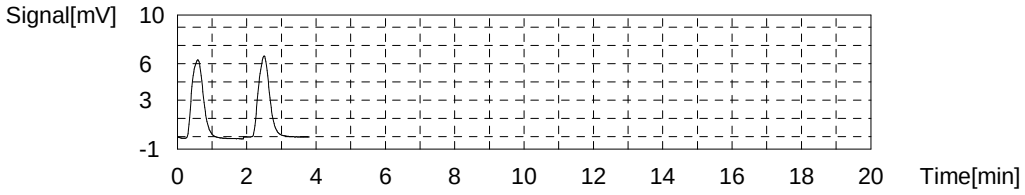
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 3.107



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.78	50uL	1	*******		6/7/2018 3:16:53 PM
2	14.65	50uL	1	*******		6/7/2018 3:18:57 PM

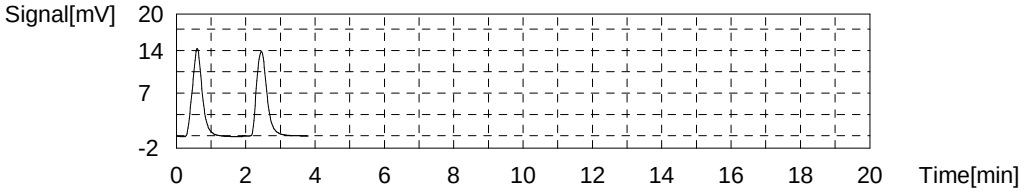
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 14.72



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	28.71	50uL	1	*******		6/7/2018 3:27:31 PM
2	28.55	50uL	1	*******		6/7/2018 3:29:35 PM

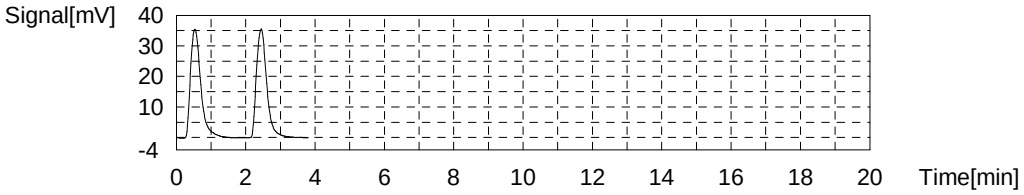
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 28.63



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	74.16	50uL	1	*******		6/7/2018 3:38:09 PM
2	72.65	50uL	1	*******		6/7/2018 3:40:13 PM

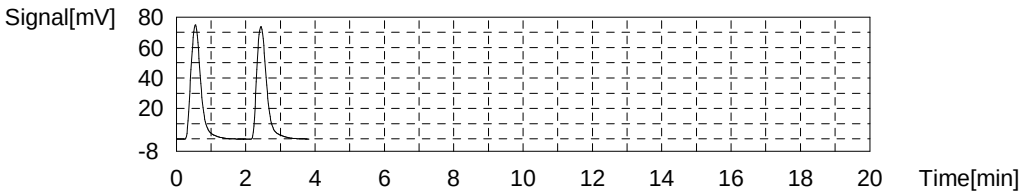
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 73.41



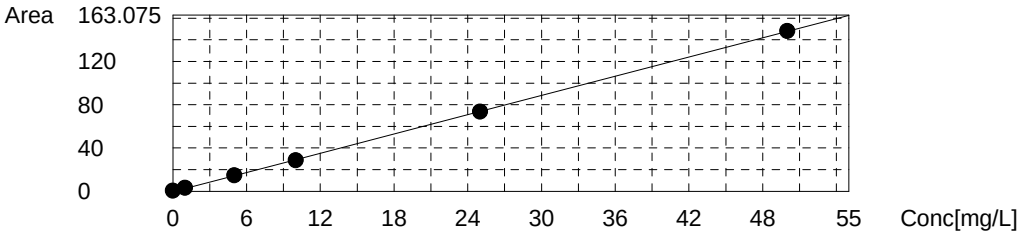
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	150.1	50uL	1	*******		6/7/2018 3:48:48 PM
2	146.4	50uL	1	*******		6/7/2018 3:50:52 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 148.3



Slope: 2.961
Intercept -0.1720
r^2 0.9999
r 1.0000
Zero Shift No



Sample

Sample Name: ICV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

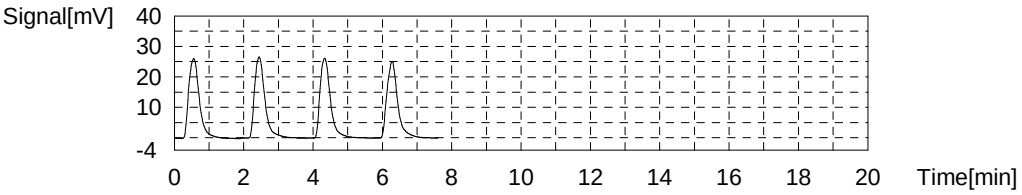
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:18.73mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	56.78	19.23mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 3:59:22 PM
2	55.40	18.77mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:01:26 PM
3	54.36	18.42mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:03:30 PM
4	54.59	18.49mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:05:34 PM

Mean Area 55.28
Mean Conc. 18.73mg/L



Sample

Sample Name: ICB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

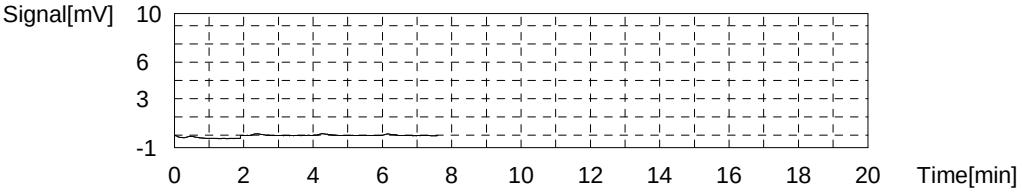
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1292mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2134	0.1302mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:14:05 PM
2	0.2156	0.1309mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:16:09 PM
3	0.2141	0.1304mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:18:13 PM
4	0.1993	0.1254mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:20:17 PM

Mean Area 0.2106
Mean Conc. 0.1292mg/L



Sample

Sample Name: LCS
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

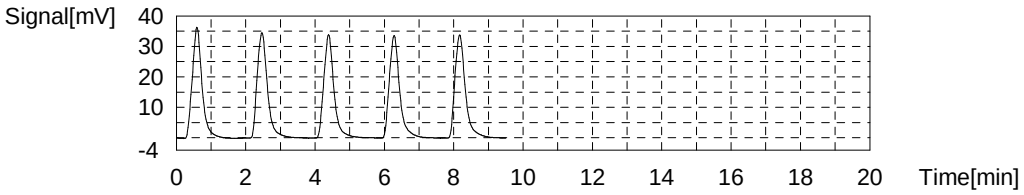
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.12mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.30	24.48mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:28:48 PM
2	71.39	24.17mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:30:52 PM
3	68.84	23.31mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:32:56 PM
4	70.08	23.73mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:35:00 PM
5	71.27	24.13mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:37:04 PM

Mean Area 71.26
Mean Conc. 24.12mg/L



Sample

Sample Name: LCSD
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

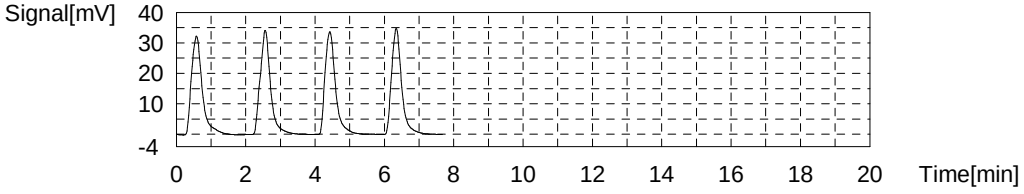
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.07mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.88	24.33mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:45:38 PM
2	70.87	23.99mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:47:42 PM
3	70.87	23.99mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:49:46 PM
4	70.81	23.97mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 4:51:50 PM

Mean Area 71.11
Mean Conc. 24.07mg/L



Sample

Sample Name: MB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

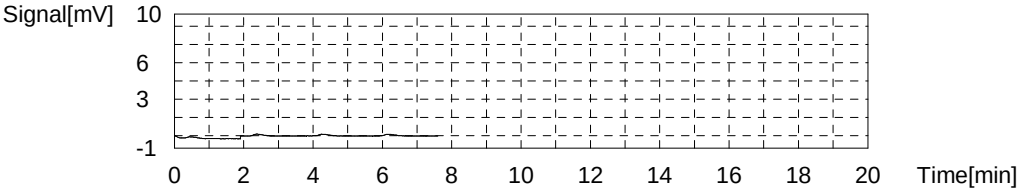
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1299mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.1725	0.1164mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:00:21 PM
2	0.2503	0.1426mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:02:25 PM
3	0.1978	0.1249mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:04:29 PM
4	0.2294	0.1356mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:06:33 PM

Mean Area 0.2125
Mean Conc. 0.1299mg/L



Sample

Sample Name: TIC
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

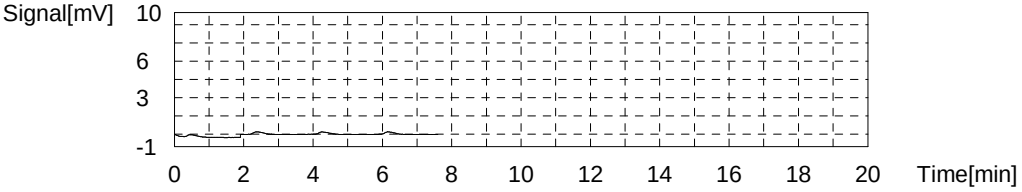
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1799mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2694	0.1491mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:15:04 PM
2	0.3985	0.1927mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:17:08 PM
3	0.3882	0.1892mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:19:12 PM
4	0.3859	0.1884mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:21:16 PM

Mean Area 0.3605
Mean Conc. 0.1799mg/L



Sample

Sample Name: 280-109842-b-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

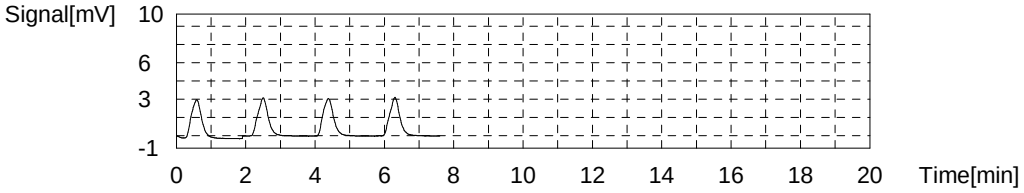
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.215mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.421	2.227mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:29:47 PM
2	6.393	2.217mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:31:51 PM
3	6.421	2.227mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:33:55 PM
4	6.312	2.190mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:35:59 PM

Mean Area 6.387
Mean Conc. 2.215mg/L



Sample

Sample Name: 280-109842-b-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

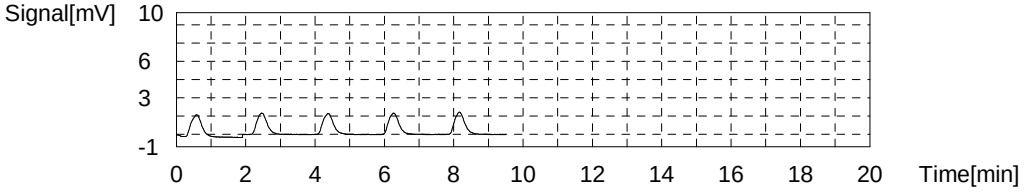
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.281mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.782	1.335mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:44:30 PM
2	3.570	1.264mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:46:34 PM
3	3.565	1.262mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:48:38 PM
4	3.631	1.284mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:50:42 PM
5	3.722	1.315mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 5:52:46 PM

Mean Area 3.622
Mean Conc. 1.281mg/L



Sample

Sample Name: 280-109842-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

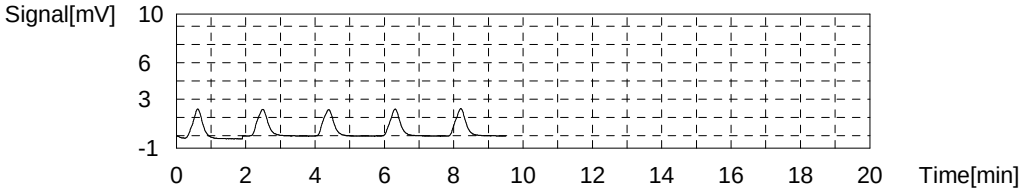
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.583mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.688	1.641mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:01:16 PM
2	4.543	1.592mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:03:20 PM
3	4.509	1.581mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:05:24 PM
4	4.448	1.560mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:07:28 PM
5	4.560	1.598mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:09:32 PM

Mean Area 4.515
Mean Conc. 1.583mg/L



Sample

Sample Name: MS 280-109842-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

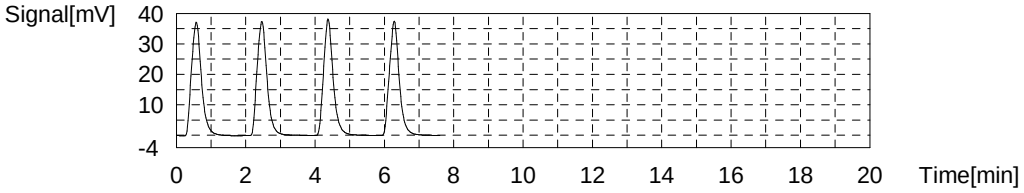
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.27mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	75.75	25.64mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:18:02 PM
2	74.60	25.25mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:20:06 PM
3	73.79	24.98mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:22:10 PM
4	74.50	25.22mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:24:14 PM

Mean Area 74.66
Mean Conc. 25.27mg/L



Sample

Sample Name: MSD 280-109842-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

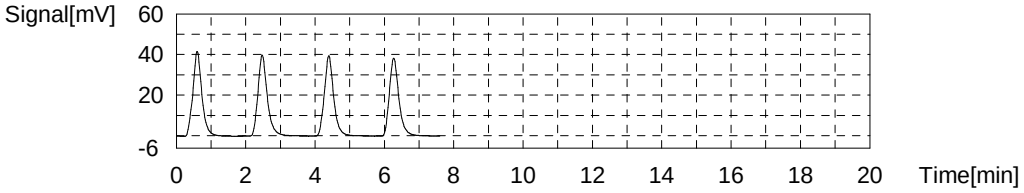
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.34mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.65	25.94mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:32:45 PM
2	75.34	25.50mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:34:49 PM
3	73.90	25.02mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:36:53 PM
4	73.54	24.89mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:38:57 PM

Mean Area 74.86
Mean Conc. 25.34mg/L



Sample

Sample Name: 280-109842-b-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

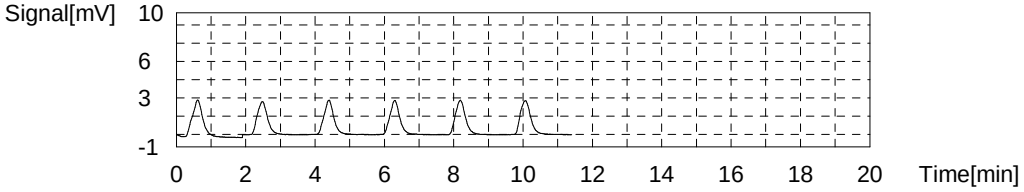
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.939mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.409	2.223mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:47:28 PM
2	5.574	1.941mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:49:32 PM
3	5.496	1.914mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:51:36 PM
4	5.477	1.908mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:53:40 PM
5	5.732	1.994mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:55:44 PM
6	5.751	2.000mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 6:57:48 PM

Mean Area 5.570
Mean Conc. 1.939mg/L



Sample

Sample Name: 280-109842-b-5
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

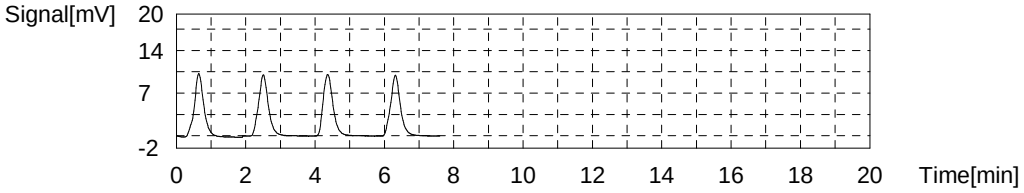
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.747mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.92	6.786mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:06:13 PM
2	19.75	6.728mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:08:17 PM
3	19.88	6.772mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:10:21 PM
4	19.67	6.701mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:12:25 PM

Mean Area 19.81
Mean Conc. 6.747mg/L



Sample

Sample Name: 280-109842-b-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

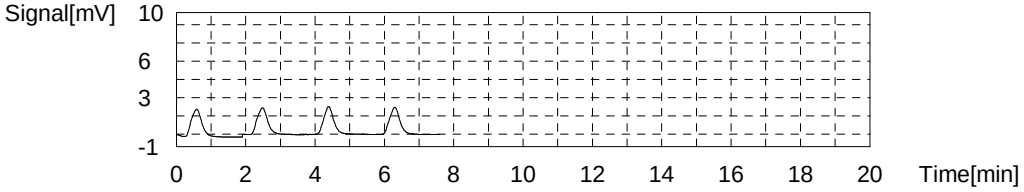
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.613mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.687	1.641mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:20:56 PM
2	4.606	1.614mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:23:00 PM
3	4.507	1.580mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:25:04 PM
4	4.612	1.616mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:27:08 PM

Mean Area 4.603
Mean Conc. 1.613mg/L



Sample

Sample Name: 280-109842-b-7
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

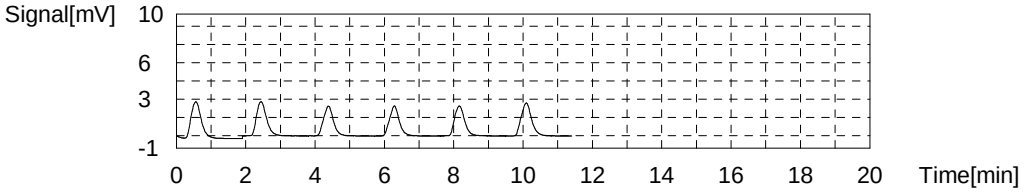
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.755mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.058	2.104mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:35:39 PM
2	5.554	1.934mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:37:43 PM
3	4.810	1.683mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:39:47 PM
4	4.802	1.680mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:41:51 PM
5	4.928	1.722mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:43:55 PM
6	5.674	1.974mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:45:59 PM

Mean Area 5.024
Mean Conc. 1.755mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

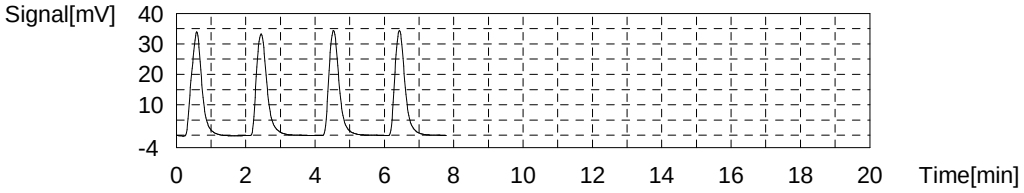
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.09mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.90	24.34mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:54:24 PM
2	71.45	24.19mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:56:39 PM
3	70.93	24.01mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 7:58:43 PM
4	70.32	23.81mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:00:47 PM

Mean Area 71.15
Mean Conc. 24.09mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

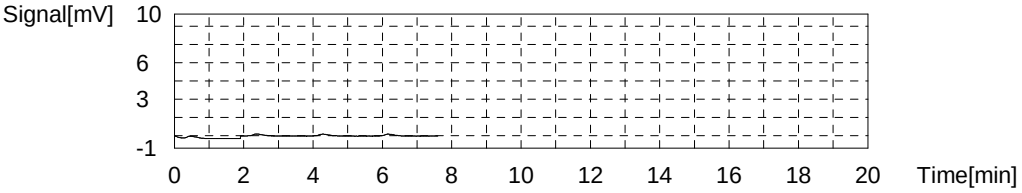
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1424mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2579	0.1452mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:09:18 PM
2	0.2612	0.1463mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:11:22 PM
3	0.2292	0.1355mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:13:26 PM
4	0.2501	0.1426mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:15:30 PM

Mean Area 0.2496
Mean Conc. 0.1424mg/L



Sample

Sample Name: 280-109842-b-8
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

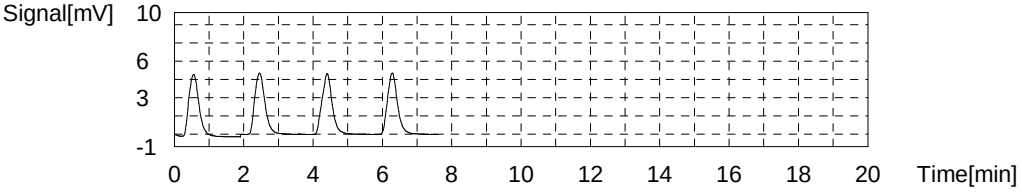
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.521mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.31	3.540mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:24:01 PM
2	10.30	3.537mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:26:05 PM
3	10.23	3.513mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:28:09 PM
4	10.18	3.496mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:30:13 PM

Mean Area 10.25
Mean Conc. 3.521mg/L



Sample

Sample Name: 280-109842-b-9
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

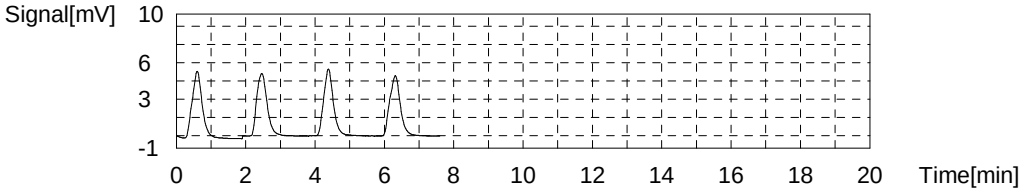
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.679mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.03	3.783mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:38:44 PM
2	10.67	3.662mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:40:48 PM
3	10.60	3.638mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:42:52 PM
4	10.59	3.635mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:44:56 PM

Mean Area 10.72
Mean Conc. 3.679mg/L



Sample

Sample Name: MS 280-109842-b-9
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

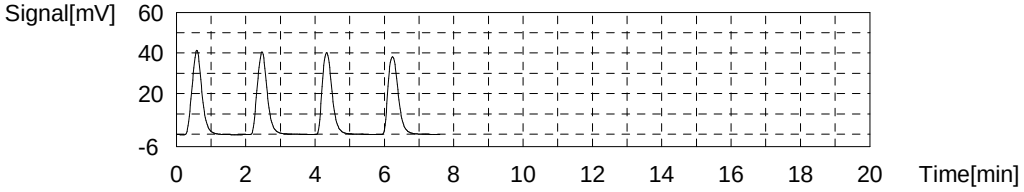
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:27.39mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	82.72	27.99mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:53:27 PM
2	81.33	27.53mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:55:31 PM
3	80.06	27.10mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:57:35 PM
4	79.58	26.93mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 8:59:39 PM

Mean Area 80.92
Mean Conc. 27.39mg/L



Sample

Sample Name: MSD 280-109842-b-9
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

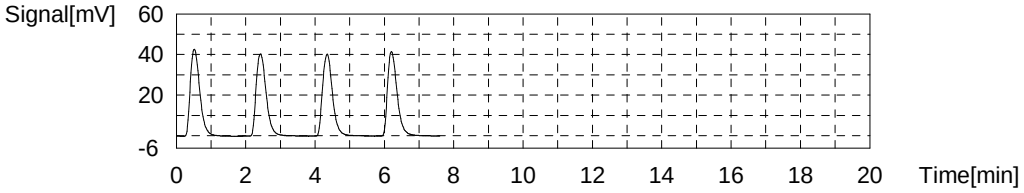
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:27.52mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	82.74	28.00mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:08:10 PM
2	81.51	27.59mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:10:14 PM
3	80.74	27.33mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:12:18 PM
4	80.28	27.17mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:14:22 PM

Mean Area 81.32
Mean Conc. 27.52mg/L



Sample

Sample Name: 280-109842-b-10
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

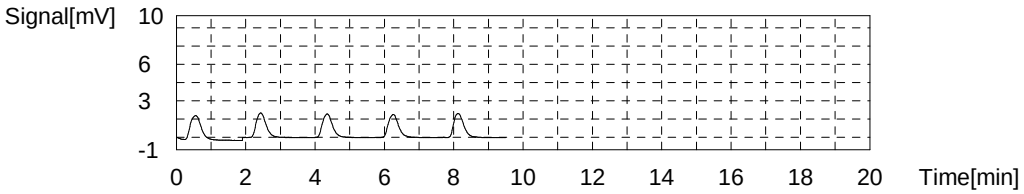
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.382mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.202	1.477mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:22:53 PM
2	4.000	1.409mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:24:57 PM
3	3.884	1.370mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:27:01 PM
4	3.838	1.354mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:29:05 PM
5	3.964	1.397mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:31:09 PM

Mean Area 3.922
Mean Conc. 1.382mg/L



Sample

Sample Name: 280-109842-b-11
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

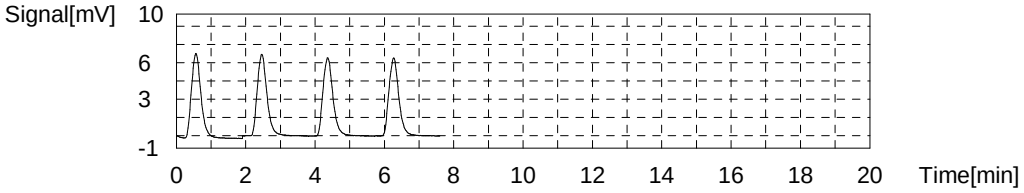
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:4.426mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.27	4.540mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:39:39 PM
2	12.94	4.428mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:41:43 PM
3	12.86	4.401mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:43:47 PM
4	12.66	4.334mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:45:51 PM

Mean Area 12.93
Mean Conc. 4.426mg/L



Sample

Sample Name: 280-109842-b-12
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

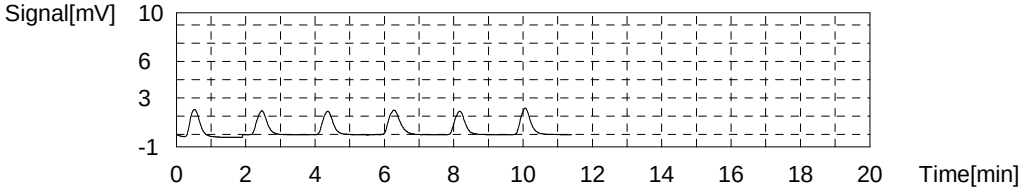
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.423mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.344	1.525mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:54:22 PM
2	3.979	1.402mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:56:26 PM
3	3.888	1.371mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 9:58:30 PM
4	4.638	1.624mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:00:34 PM
5	3.963	1.396mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:02:38 PM
6	4.336	1.522mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:04:42 PM

Mean Area 4.042
Mean Conc. 1.423mg/L



Sample

Sample Name: 280-109842-b-13
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

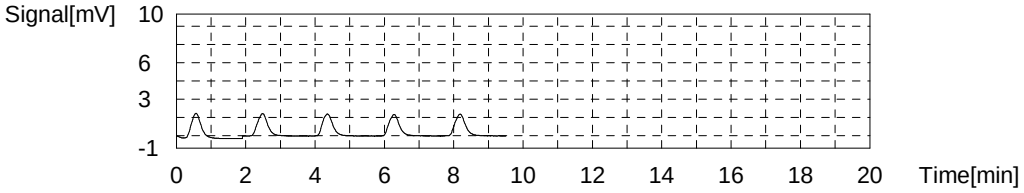
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.291mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.947	1.391mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:13:07 PM
2	3.696	1.306mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:15:11 PM
3	3.622	1.281mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:17:15 PM
4	3.614	1.279mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:19:19 PM
5	3.672	1.298mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:21:23 PM

Mean Area 3.651
Mean Conc. 1.291mg/L



Sample

Sample Name: 280-109842-b-14
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

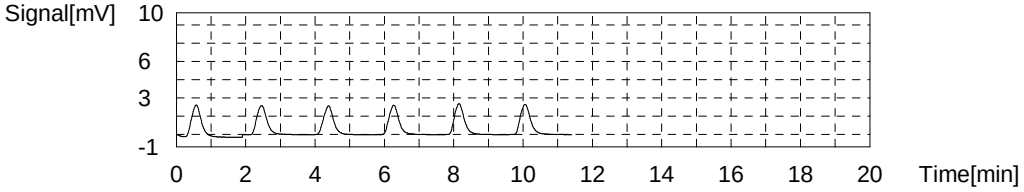
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.722mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.031	1.757mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:29:54 PM
2	4.776	1.671mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:31:58 PM
3	4.652	1.629mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:34:02 PM
4	4.745	1.661mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:36:06 PM
5	4.923	1.721mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:38:10 PM
6	4.981	1.740mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:40:14 PM

Mean Area 4.928
Mean Conc. 1.722mg/L



Sample

Sample Name: 280-109842-b-15
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

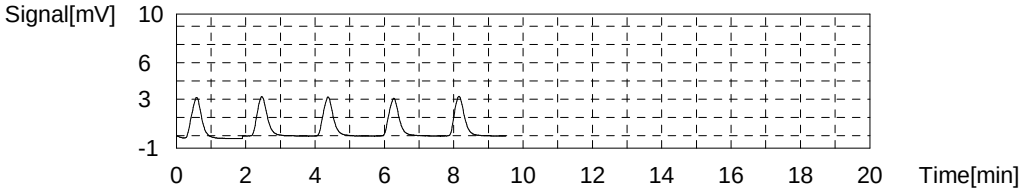
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.207mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.664	2.309mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:48:39 PM
2	6.445	2.235mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:50:43 PM
3	6.400	2.220mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:52:47 PM
4	6.211	2.156mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:54:51 PM
5	6.390	2.216mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 10:56:55 PM

Mean Area 6.362
Mean Conc. 2.207mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

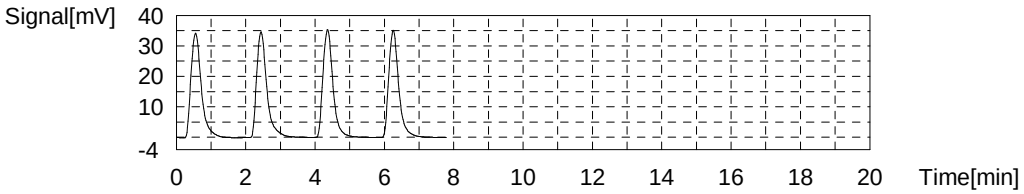
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.25mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.64	24.59mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:05:26 PM
2	71.22	24.11mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:07:30 PM
3	71.41	24.17mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:09:34 PM
4	71.21	24.11mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:11:49 PM

Mean Area 71.62
Mean Conc. 24.25mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

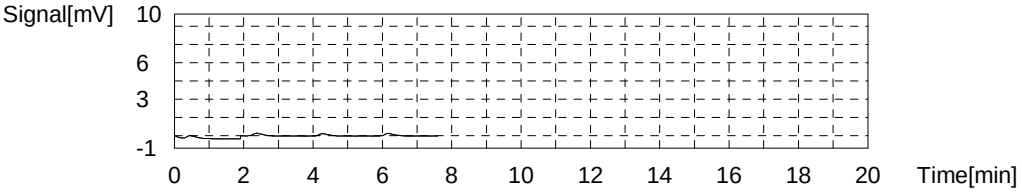
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1774mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.3207	0.1664mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:20:21 PM
2	0.3938	0.1911mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:22:25 PM
3	0.3312	0.1700mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:24:29 PM
4	0.3672	0.1821mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:26:33 PM

Mean Area 0.3532
Mean Conc. 0.1774mg/L



Sample

Sample Name: 280-109848-b-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

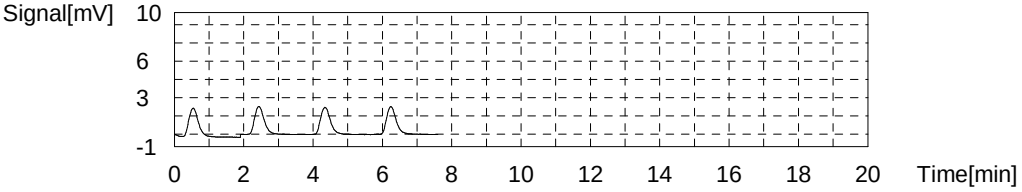
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.525mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.349	1.527mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:35:05 PM
2	4.383	1.538mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:37:09 PM
3	4.342	1.524mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:39:13 PM
4	4.303	1.511mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:41:17 PM

Mean Area 4.344
Mean Conc. 1.525mg/L



Sample

Sample Name: 280-109851-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

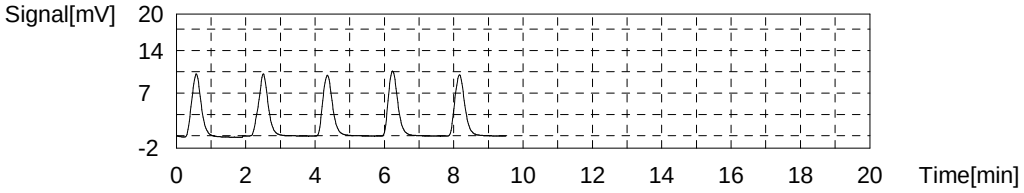
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.753mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.05	6.829mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:49:49 PM
2	19.66	6.698mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:51:53 PM
3	19.50	6.644mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:53:57 PM
4	20.46	6.968mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:56:01 PM
5	20.08	6.840mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/7/2018 11:58:05 PM

Mean Area 19.82
Mean Conc. 6.753mg/L



Sample

Sample Name: 280-109851-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

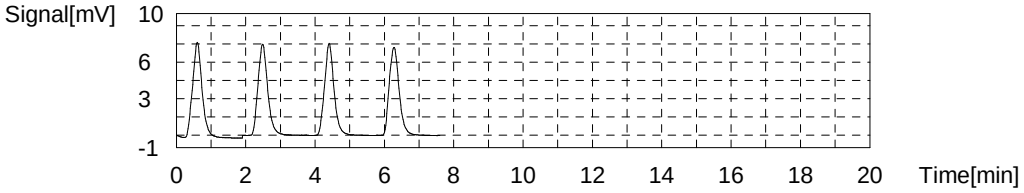
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:5.009mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.03	5.134mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:06:36 AM
2	14.67	5.012mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:08:40 AM
3	14.38	4.915mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:10:44 AM
4	14.56	4.975mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:12:48 AM

Mean Area 14.66
Mean Conc. 5.009mg/L



Sample

Sample Name: 280-109856-i-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

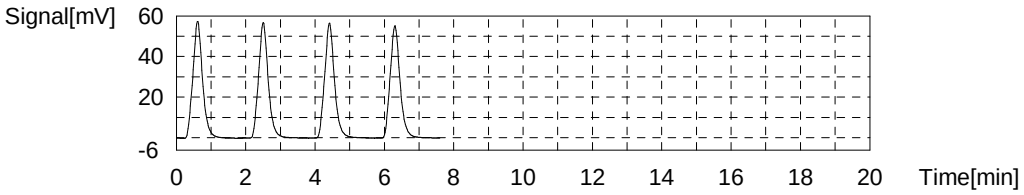
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:37.70mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.2	38.29mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:21:20 AM
2	110.5	37.38mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:23:24 AM
3	111.9	37.85mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:25:28 AM
4	110.2	37.28mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:27:32 AM

Mean Area 111.5
Mean Conc. 37.70mg/L



Sample

Sample Name: 280-109977-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

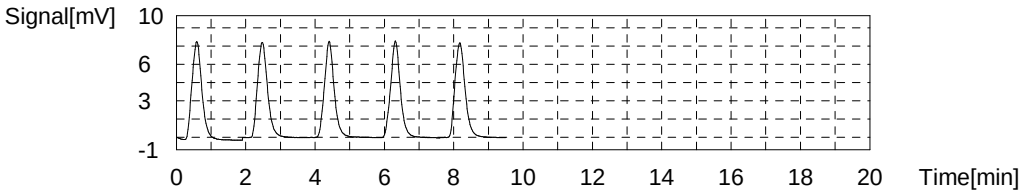
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:5.406mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.09	5.492mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:36:04 AM
2	15.83	5.404mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:38:08 AM
3	15.34	5.239mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:40:12 AM
4	15.53	5.303mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:42:16 AM
5	15.89	5.425mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:44:20 AM

Mean Area 15.84
Mean Conc. 5.406mg/L



Sample

Sample Name: LCS
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

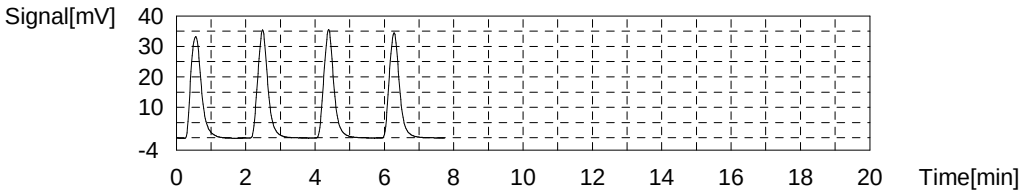
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.37mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.76	24.63mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:52:51 AM
2	72.01	24.38mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:54:55 AM
3	71.84	24.32mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:56:59 AM
4	71.33	24.15mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 12:59:11 AM

Mean Area 71.98
Mean Conc. 24.37mg/L



Sample

Sample Name: LCSD
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

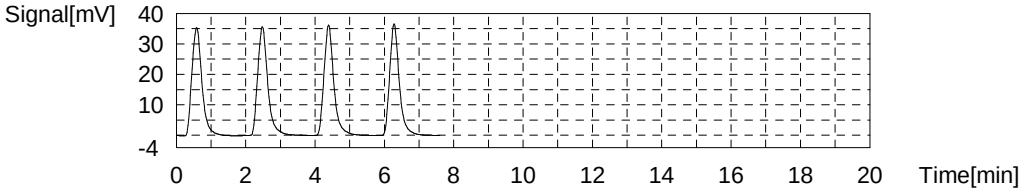
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.39mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.90	24.68mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:07:43 AM
2	72.29	24.47mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:09:47 AM
3	71.88	24.33mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:11:51 AM
4	71.06	24.06mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:13:55 AM

Mean Area 72.03
Mean Conc. 24.39mg/L



Sample

Sample Name: MB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

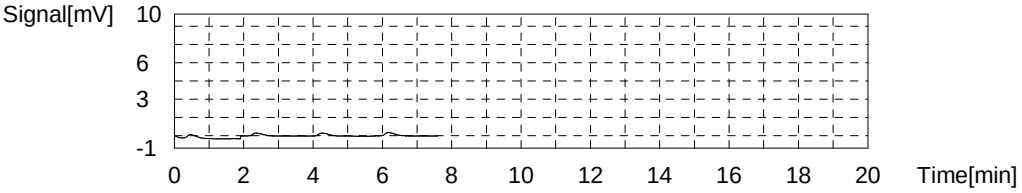
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2161mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4746	0.2184mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:22:27 AM
2	0.4265	0.2021mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:24:31 AM
3	0.4437	0.2080mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:26:35 AM
4	0.5265	0.2359mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:28:39 AM

Mean Area 0.4678
Mean Conc. 0.2161mg/L



Sample

Sample Name: TIC
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

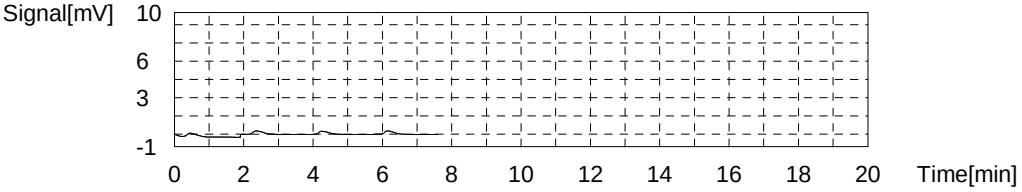
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2260mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4514	0.2106mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:37:11 AM
2	0.5374	0.2396mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:39:15 AM
3	0.4965	0.2258mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:41:19 AM
4	0.5032	0.2280mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:43:23 AM

Mean Area 0.4971
Mean Conc. 0.2260mg/L



Sample

Sample Name: 280-109865-c-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

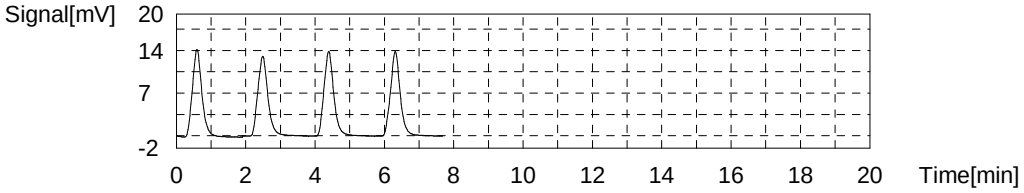
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.269mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.76	9.433mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:51:55 AM
2	26.61	9.045mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:53:59 AM
3	27.27	9.268mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:56:03 AM
4	27.45	9.329mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 1:58:12 AM

Mean Area 27.27
Mean Conc. 9.269mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

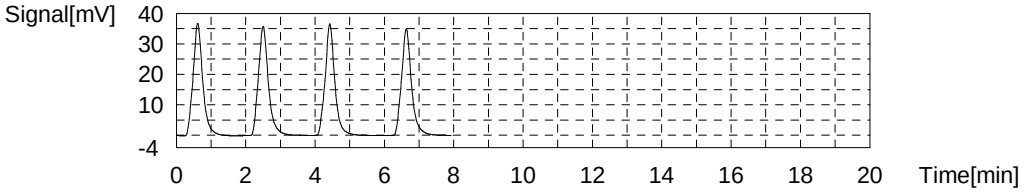
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.33mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	73.00	24.71mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:06:44 AM
2	72.29	24.47mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:08:48 AM
3	71.62	24.25mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:11:11 AM
4	70.53	23.88mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:13:15 AM

Mean Area 71.86
Mean Conc. 24.33mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

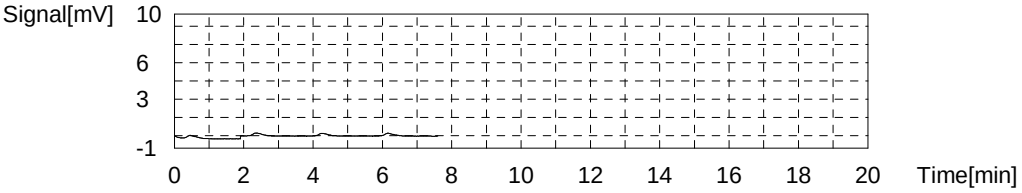
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1885mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.3808	0.1867mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:21:47 AM
2	0.3940	0.1912mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:23:51 AM
3	0.3961	0.1919mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:25:55 AM
4	0.3739	0.1844mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:27:59 AM

Mean Area 0.3862
Mean Conc. 0.1885mg/L



Sample

Sample Name: 280-109888-g-1
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

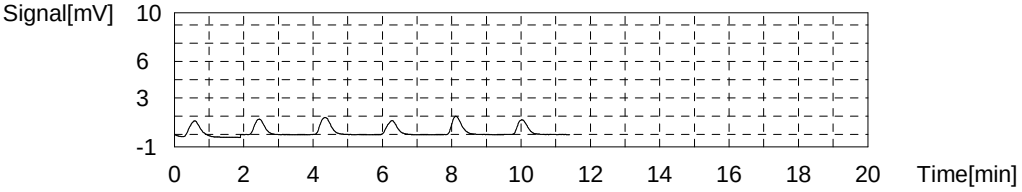
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.014mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.911	1.041mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:36:31 AM
2	2.523	0.9102mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:38:35 AM
3	2.930	1.048mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:40:39 AM
4	2.406	0.8707mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:42:43 AM
5	2.960	1.058mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:44:47 AM
6	2.389	0.8649mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:46:51 AM

Mean Area 2.831
Mean Conc. 1.014mg/L



Sample

Sample Name: 280-109888-g-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

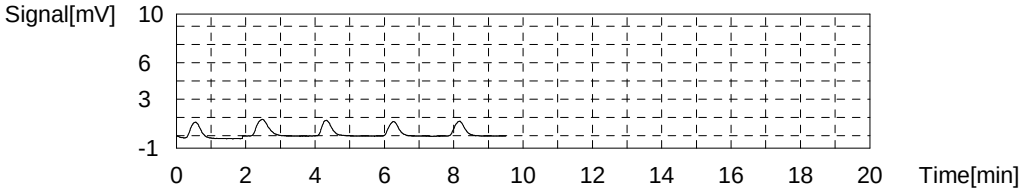
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.8953mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.606	0.9382mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:55:17 AM
2	3.212	1.143mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:57:21 AM
3	2.442	0.8828mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 2:59:25 AM
4	2.375	0.8602mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:01:29 AM
5	2.493	0.9000mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:03:33 AM

Mean Area 2.479
Mean Conc. 0.8953mg/L



Sample

Sample Name: 280-109888-g-7
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

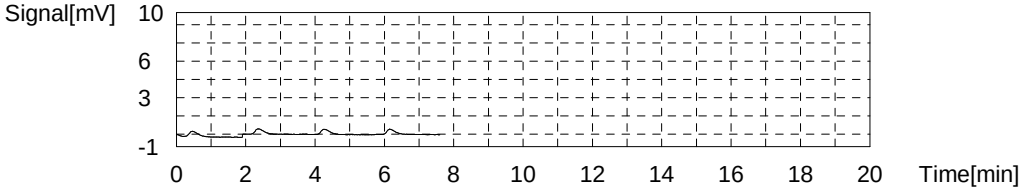
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.3078mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7309	0.3049mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:12:04 AM
2	0.7785	0.3210mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:14:08 AM
3	0.7368	0.3069mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:16:12 AM
4	0.7115	0.2984mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:18:16 AM

Mean Area 0.7394
Mean Conc. 0.3078mg/L



Sample

Sample Name: 280-109851-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

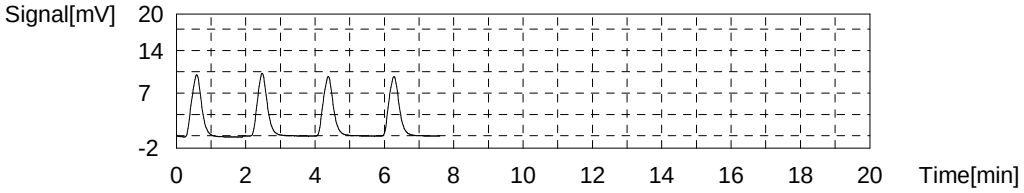
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:6.856mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.58	7.008mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:26:48 AM
2	20.20	6.880mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:28:52 AM
3	19.71	6.715mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:30:56 AM
4	20.02	6.819mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:33:00 AM

Mean Area 20.13
Mean Conc. 6.856mg/L



Sample

Sample Name: MS 280-109851-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

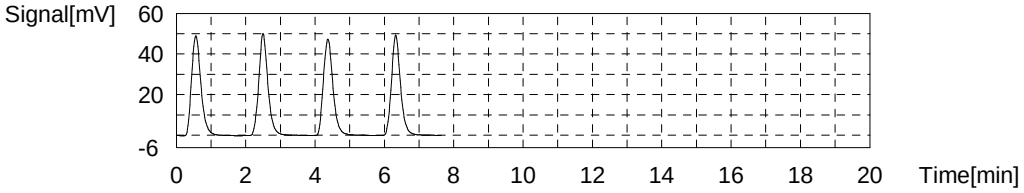
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:31.22mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	94.16	31.86mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:41:32 AM
2	92.28	31.22mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:43:36 AM
3	92.32	31.24mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:45:42 AM
4	90.38	30.58mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:47:46 AM

Mean Area 92.28
Mean Conc. 31.22mg/L



Sample

Sample Name: 280-109895-b-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

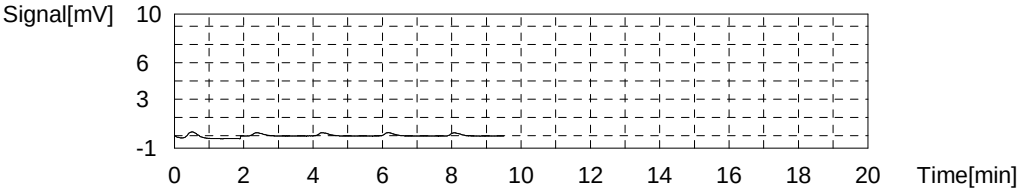
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2242mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9803	0.3892mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:56:18 AM
2	0.4936	0.2248mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 3:58:22 AM
3	0.5036	0.2282mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:00:26 AM
4	0.4797	0.2201mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:02:30 AM
5	0.4908	0.2239mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:04:34 AM

Mean Area 0.4919
Mean Conc. 0.2242mg/L



Sample

Sample Name: 280-109906-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

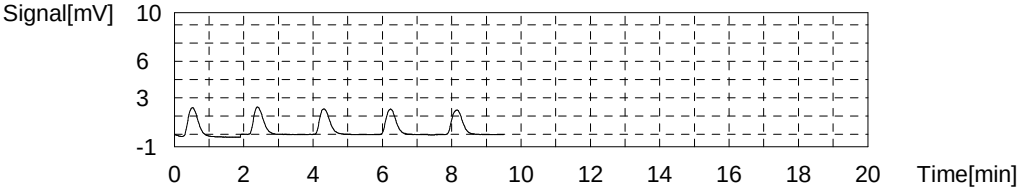
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.502mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.729	1.655mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:13:05 AM
2	4.341	1.524mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:15:09 AM
3	4.243	1.491mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:17:13 AM
4	4.203	1.478mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:19:17 AM
5	4.318	1.516mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:21:21 AM

Mean Area 4.276
Mean Conc. 1.502mg/L



Sample

Sample Name: 280-109906-a-6
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

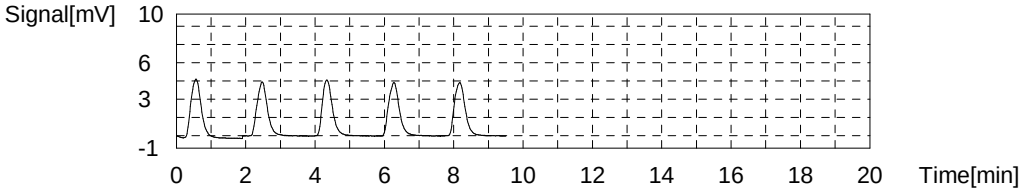
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.189mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.03	3.445mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:29:52 AM
2	9.138	3.144mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:31:56 AM
3	9.187	3.161mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:34:00 AM
4	9.371	3.223mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:36:04 AM
5	9.385	3.228mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:38:08 AM

Mean Area 9.270
Mean Conc. 3.189mg/L



Sample

Sample Name: 280-109906-a-8
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

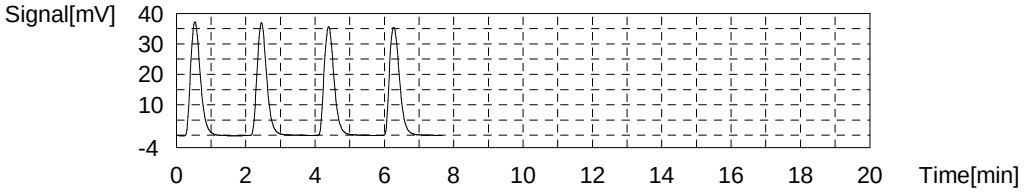
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.55mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	74.30	25.15mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:46:40 AM
2	72.11	24.41mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:48:47 AM
3	71.45	24.19mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:50:51 AM
4	72.26	24.46mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 4:52:55 AM

Mean Area 72.53
Mean Conc. 24.55mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

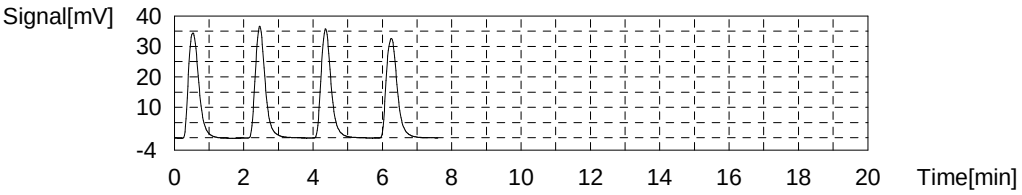
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.64mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	73.44	24.86mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:01:28 AM
2	72.96	24.70mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:03:32 AM
3	72.33	24.49mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:05:36 AM
4	72.42	24.52mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:07:40 AM

Mean Area 72.79
Mean Conc. 24.64mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

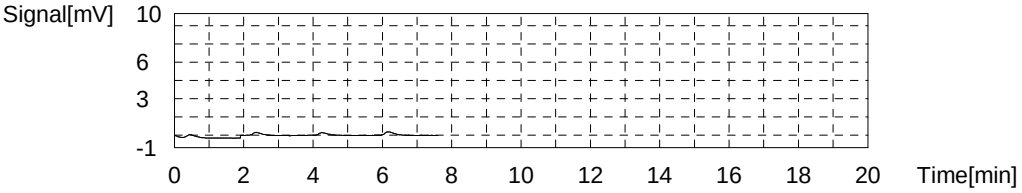
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1903mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.3481	0.1757mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:16:13 AM
2	0.3757	0.1850mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:18:17 AM
3	0.3577	0.1789mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:20:21 AM
4	0.4839	0.2215mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:22:25 AM

Mean Area 0.3914
Mean Conc. 0.1903mg/L



Sample

Sample Name: 280-109907-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

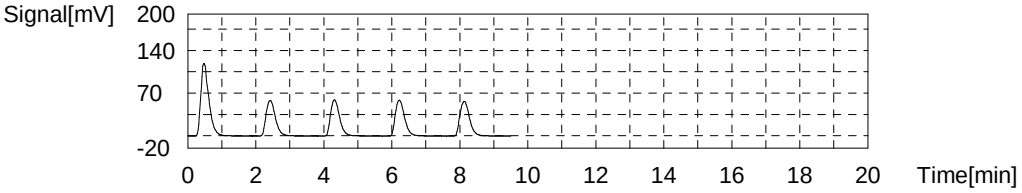
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:65.14mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	199.3	67.37mg/L	50uL	1	R	TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:30:58 AM
2	112.5	65.56mg/L	29uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:33:02 AM
3	110.3	64.28mg/L	29uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:35:06 AM
4	112.3	65.45mg/L	29uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:37:09 AM
5	112.0	65.27mg/L	29uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:39:13 AM

Mean Area 111.8
Mean Conc. 65.14mg/L



Sample

Sample Name: 280-109907-a-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

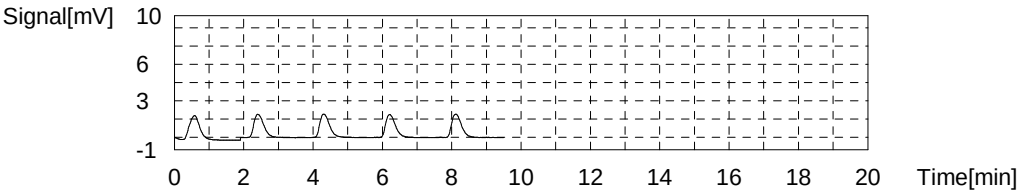
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.319mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.096	1.441mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:47:45 AM
2	3.770	1.331mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:49:49 AM
3	3.702	1.308mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:51:53 AM
4	3.688	1.304mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:53:57 AM
5	3.775	1.333mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 5:56:01 AM

Mean Area 3.734
Mean Conc. 1.319mg/L



Sample

Sample Name: 280-109907-a-4
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

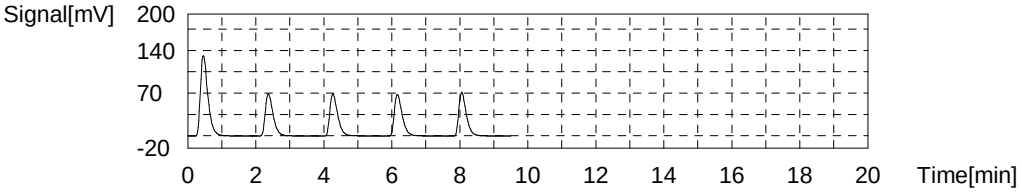
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:67.36mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	204.6	69.16mg/L	50uL	1	R	TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:04:33 AM
2	111.7	67.42mg/L	28uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:06:37 AM
3	112.0	67.60mg/L	28uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:08:41 AM
4	111.0	67.00mg/L	28uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:10:44 AM
5	111.7	67.42mg/L	28uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:12:48 AM

Mean Area 111.6
Mean Conc. 67.36mg/L



Sample

Sample Name: 280-109907-a-5
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

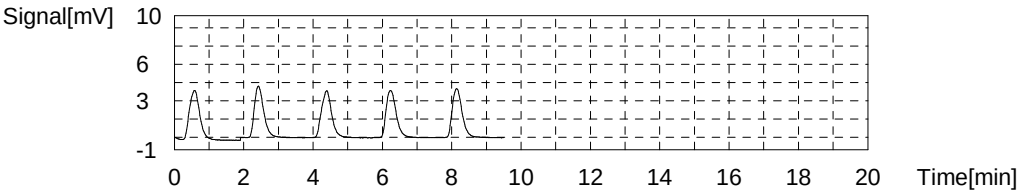
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.726mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.401	2.895mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:21:21 AM
2	7.965	2.748mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:23:25 AM
3	7.835	2.704mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:25:29 AM
4	7.820	2.699mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:27:33 AM
5	7.980	2.753mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:29:37 AM

Mean Area 7.900
Mean Conc. 2.726mg/L



Sample

Sample Name: 280-110124-b-7
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

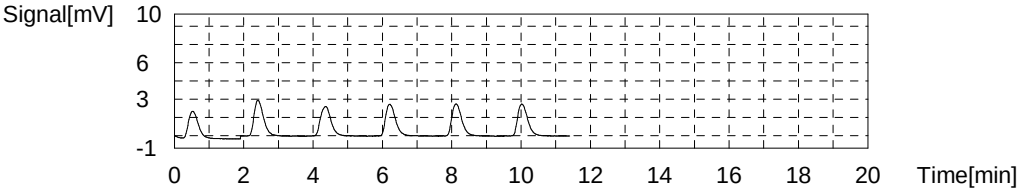
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.794mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.304	1.512mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:38:09 AM
2	5.524	1.924mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:40:13 AM
3	5.041	1.761mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:42:17 AM
4	5.110	1.784mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:44:21 AM
5	5.229	1.824mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:46:25 AM
6	5.181	1.808mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:48:28 AM

Mean Area 5.140
Mean Conc. 1.794mg/L



Sample

Sample Name: 280-109895-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

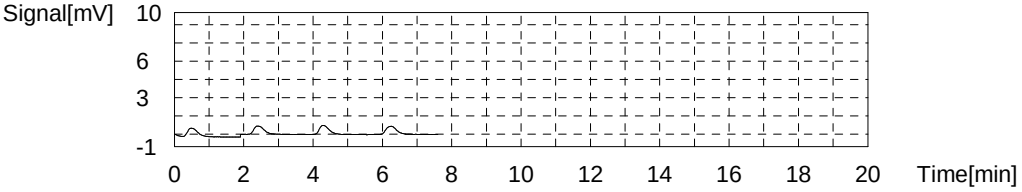
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.5273mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.348	0.5134mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:56:55 AM
2	1.383	0.5252mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 6:58:59 AM
3	1.433	0.5421mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:01:03 AM
4	1.393	0.5286mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:03:07 AM

Mean Area 1.389
Mean Conc. 0.5273mg/L



Sample

Sample Name: MS 280-109895-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

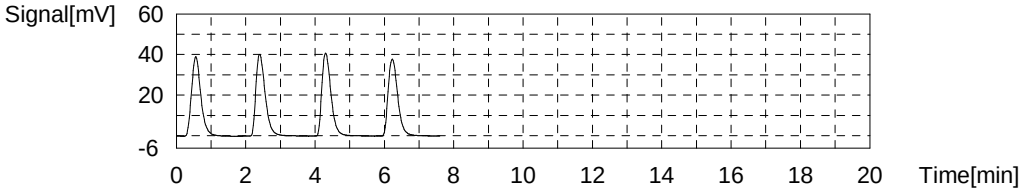
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:25.26mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	74.41	25.19mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:11:40 AM
2	75.50	25.56mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:13:44 AM
3	74.88	25.35mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:15:48 AM
4	73.69	24.94mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:17:52 AM

Mean Area 74.62
Mean Conc. 25.26mg/L



Sample

Sample Name: MSD 280-109895-b-3
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

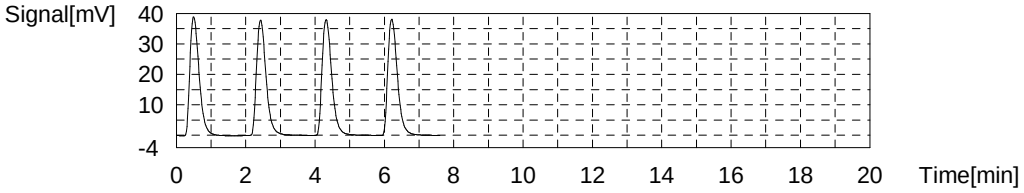
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.96mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	73.67	24.94mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:26:25 AM
2	72.96	24.70mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:28:29 AM
3	74.39	25.18mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:30:33 AM
4	73.92	25.02mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:32:37 AM

Mean Area 73.73
Mean Conc. 24.96mg/L



Sample

Sample Name: MSD 280-109851-a-2
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

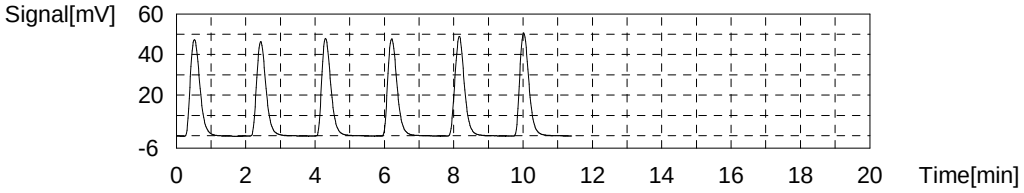
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:31.42mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	92.95	31.45mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:41:10 AM
2	87.72	29.68mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:43:14 AM
3	88.20	29.85mg/L	50uL	1	E	TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:45:18 AM
4	90.46	30.61mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:47:22 AM
5	94.14	31.85mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:49:26 AM
6	93.90	31.77mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:51:29 AM

Mean Area 92.86
Mean Conc. 31.42mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

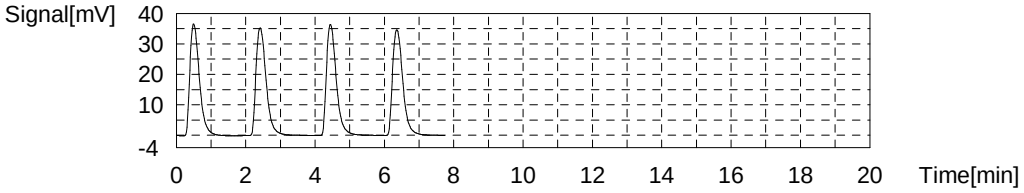
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.36mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.20	24.10mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 7:59:56 AM
2	72.26	24.46mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:02:08 AM
3	72.41	24.51mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:04:12 AM
4	71.94	24.35mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:06:16 AM

Mean Area 71.95
Mean Conc. 24.36mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: NPOC.met
Status Completed
Chk. Result

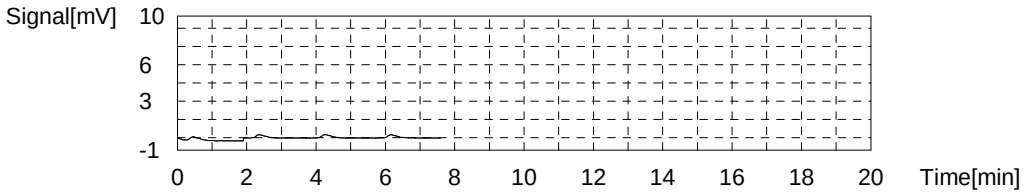
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2112mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4754	0.2187mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:14:49 AM
2	0.4484	0.2095mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:16:53 AM
3	0.4607	0.2137mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:18:57 AM
4	0.4282	0.2027mg/L	50uL	1		TOC3.2018_06_07_14_45_57.cal	6/8/2018 8:21:01 AM

Mean Area	0.4532
Mean Conc.	0.2112mg/L



TOC-V Cal Curve Information
C:¥TOC3201¥CalCurves¥TOC3.2018_06_07_14_45_57.cal

Date of Creation 3:50:52 PM 6/7/2018
User AD
System TOC-V cpn 3

Cal. Curve

Sample Name: CAL 110716
Sample ID: Untitled
Object ID 0A-103108-04335027-133EE7F1E14D-0000
Cal. Curve: TOC3.2018_06_07_14_45_57.cal
Status Completed
Comment:

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.3429	50uL	1	*******		6/7/2018 2:53:38 PM
2	0.2825	50uL	1	*******		6/7/2018 2:55:42 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 0.3127
SD Area 0.04271
CV Area 13.66%
Vial 1

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.249	50uL	1	*******	E	6/7/2018 3:04:16 PM
2	3.035	50uL	1	*******		6/7/2018 3:06:20 PM
3	3.180	50uL	1	*******		6/7/2018 3:08:24 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 3.107
SD Area 0.1025
CV Area 3.30%
Vial 2

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.78	50uL	1	*******		6/7/2018 3:16:53 PM
2	14.65	50uL	1	*******		6/7/2018 3:18:57 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 14.72
SD Area 0.09192
CV Area 0.62%
Vial 3

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	28.71	50uL	1	*******		6/7/2018 3:27:31 PM
2	28.55	50uL	1	*******		6/7/2018 3:29:35 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 28.63
SD Area 0.1131
CV Area 0.40%
Vial 4

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	74.16	50uL	1	*******		6/7/2018 3:38:09 PM
2	72.65	50uL	1	*******		6/7/2018 3:40:13 PM

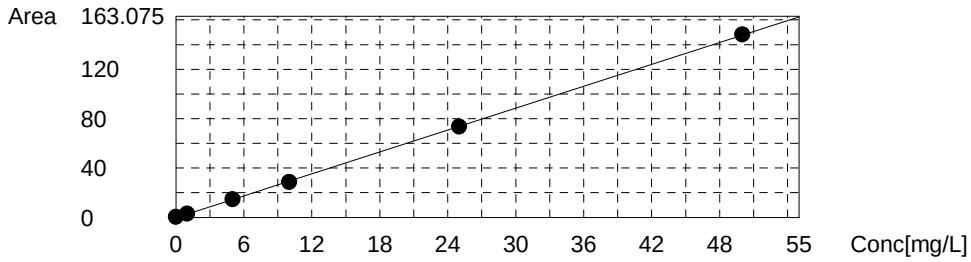
Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 73.41
SD Area 1.068
CV Area 1.45%
Vial 5

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	150.1	50uL	1	*******		6/7/2018 3:48:48 PM
2	146.4	50uL	1	*******		6/7/2018 3:50:52 PM

Acid Add. 0.000%
Sp. Time 90.00sec
Mean Area 148.3
SD Area 2.616
CV Area 1.76%
Vial 6

Slope: 2.961
Intercept -0.1720
r^2 0.9999
r 1.0000
Zero Shift No



Shipping and Receiving Documents

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
285 Davidson Ave, Suite 405
Somerset, NJ, 08873
732-302-9500

SHIP TO.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Atten: Stephanie Rothmeyer
Lab Phone# 303-736-0182

CHAIN OF CUSTODY

DATE: 5/18/2018
COC #: STWRT180518A
PAGE: 1 OF 1

Project Name:	Stewart ANGB	Project Contact:	Kerry Doyle	Bill To: Amec Foster Wheeler Environment & Infrastructure	Disposal Instructions: LAB
Project Number:	291330006	Phone Number:	828-337-6408	9210 Sky Park Court #200	Shipment Method: FEDEX
Project Manager:	Kerry Hull	Project Phase:	01	San Diego, CA 92123	Waybill Number: 772268983700

Sample Information						Methods for Analysis	RUSH					
No.	Sample ID	Date & Time Sampled	Matrix	Sample Type	MS/MSD	TOC 9060A	24 Hour	48 Hour	72 Hour	5 Day (TAT)	TOTAL BOTTLES	HOLD All Analyses
1	STWRT-LWSW01	05/15/18 10:50	WS	N	N	X					1	
2	STWRT-RPSW21	05/16/18 10:30	WS	N	N	X					1	
3	STWRT-RPTSW02	05/15/18 14:50	WS	N	N	X					1	
4	STWRT-RPTSW03	05/15/18 14:25	WS	N	N	X					1	
5	STWRT-SSSW03	05/15/18 10:10	WS	N	N	X					1	
6												
7												
8												
9												
10												
11												
12												

280-109977 Chain of Custody

Sampler's Signature:		Date: 5/18/18	Time: 1235
Relinquished By/Affiliation:	WOOD	Date: 5/19/18	Time: 1235
Received By: Michael T. Dodd	TA-Denver	Date: 5/19/18	Time: 8:40
Relinquished By/Affiliation:	TA-Denver	Date:	Time:
Received By:		Date:	Time:
Relinquished By/Affiliation:		Date:	Time:
Received By (LAB):		Date:	Time:

5/19/19

For Lab Use

Does COC match samples:	Y or N
Broken Container:	Y or N
COC seal intact:	Y or N
Other problems:	Y or N
WSDOT contacted:	Y or N
Date contacted:	
Cooler Temperature at receipt:	°C

Comments:
X=Analyze H=Hold Analysis Request

NUMBER OF COOLERS SENT: 1

Analyte List:

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 280-109977-1

Login Number: 109977
List Number: 1
Creator: Dedio, Michael T

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Received broken. Transferred to new containers with minimal or no sample loss.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	