

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-105600-1

TestAmerica Sample Delivery Group: DN0307

Client Project/Site: F18-015

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600, MS H8-41

Richland, Washington 99352

Attn: Mr. Scot Fitzgerald



Authorized for release by:

1/25/2018 8:47:41 PM

Darlene Bandy, Project Manager I

(303)736-0100

[darlene.bandy@testamericainc.com](mailto:darlene.bandy@testamericainc.com)



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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Job ID: 280-105600-1**

**Laboratory: TestAmerica Denver**

**Narrative**

## CASE NARRATIVE

**Client: CH2M Hill Plateau Remediation Company**

**Project: F18-015**

**Report Number: 280-105600-1**

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.

The laboratory is not able to achieve project specified Highest Allowable Practical Quantitation Limits (HAPQL limits) for Boron 6010D. All analytes met statistical limits, unless otherwise detailed in the individual sections below. As instructed by the client, the data is reported.

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 1/18/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.7° C.

### **Receipt Exceptions**

The chains of custody note that samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), and B3HD33 (280-105600-4) were field filtered. TestAmerica Denver's LIMS does not have an option for field filtered VOCs 8260B, Total Dissolved Solids 2540C or Total Suspended Solids 2540D. As instructed by the client, the "total" method chain was logged (SIR18-0406).

### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), B3HD34 (280-105600-3), B3HD33 (280-105600-4), B3HD46 (280-105600-5) and B3HD58 (280-105600-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 01/23/2018.

In batch 402404, the following volatile sample was analyzed with significant headspace in the sample container(s): B3HD34 (280-105600-3[MSD]). Significant headspace is defined as a bubble greater than 6 mm in diameter. This MSD result may be biased low. The parent sample and MS did not have headspace, and the MS/MSD spikes recovered within limits; therefore, the data is reported.

The chains of custody note that samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), and B3HD33 (280-105600-4) were field filtered. TestAmerica Denver's LIMS does not have an option for field filtered VOCs 8260B. As instructed by the client, the "total" method chain was logged (SIR18-0406). Please note that field filtering samples for volatiles analysis could cause some of the volatiles to be lost and thus could cause low-biased results.

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

### **DISSOLVED METALS (ICP)**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2) and B3HD33 (280-105600-4) were analyzed for Dissolved Metals (ICP) in accordance with EPA SW846 6010D. The samples were prepared on 01/22/2018 and analyzed on 01/23/2018.

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

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**Laboratory: TestAmerica Denver (Continued)**

The continuing calibration verification (CCV) associated with batch 280-402549 recovered above the upper control limit for Fe (115%, limit 110%). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following are associated: B3HD57 (280-105600-1), B3HD57 (280-105600-1[MS]), B3HD57 (280-105600-1[MSD]), B3HD45 (280-105600-2), B3HD33 (280-105600-4), (CCV 280-402549/49), (LCS 280-402360/2-A), (MB 280-402360/1-A), (280-105600-B-1-A PDS), (280-105600-B-1-A SD) and (280-105600-B-4-K MS).

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

**TOTAL METALS (ICP)**

Samples B3HD34 (280-105600-3), B3HD46 (280-105600-5) and B3HD58 (280-105600-6) were analyzed for Total Metals (ICP) in accordance with EPA SW846 6010D. The samples were prepared on 01/22/2018 and analyzed on 01/23/2018.

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

**DISSOLVED METALS (ICP-MS)**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2) and B3HD33 (280-105600-4) were analyzed for Dissolved Metals (ICP-MS) in accordance with SW846 6020B. The samples were prepared on 01/22/2018 and analyzed on 01/23/2018.

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

**TOTAL METALS (ICP/MS)**

Samples B3HD34 (280-105600-3), B3HD46 (280-105600-5) and B3HD58 (280-105600-6) were analyzed for Total Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 01/22/2018 and analyzed on 01/23/2018.

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

**DISSOLVED ALKALINITY**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2) and B3HD33 (280-105600-4) were analyzed for Dissolved Alkalinity in accordance with SM20 2320B. The samples were analyzed on 01/22/2018.

Alkalinity as CaCO<sub>3</sub> was detected in method blank MB 280-402461/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. Because the concentration in the method blank was not present at a level greater than the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged "C".

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

**ALKALINITY**

Samples B3HD34 (280-105600-3), B3HD46 (280-105600-5) and B3HD58 (280-105600-6) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 01/22/2018.

Alkalinity as CaCO<sub>3</sub> was detected in method blank MB 280-402461/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. Because the concentration in the method blank was not present at a level greater than the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged "C".

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

**TOTAL SUSPENDED SOLIDS**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), B3HD34 (280-105600-3), B3HD33 (280-105600-4), B3HD46 (280-105600-5) and B3HD58 (280-105600-6) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 01/22/2018.

The chains of custody note that samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), and B3HD33 (280-105600-4) were field



Client: CH2M Hill Plateau Remediation Company  
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**Laboratory: TestAmerica Denver (Continued)**

filtered. TestAmerica Denver's LIMS does not have an option for field filtered Total Suspended Solids 2540D. As instructed by the client, the "total" method chain was logged (SIR18-0406).

A lower initial volume was used for the following samples due to slow filtration and high suspended solids: B3HD34 (280-105600-3) and B3HD34 (280-105600-3[DU]). Elevated reporting limits (RLs) are provided.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample B3HD57 (280-105600-1), and the duplicate result was flagged "y". Sample non-homogeneity is suspected. The acceptable LCS data demonstrates that the analytical system was operating within control; therefore, corrective action is not needed. It is noted that the duplicate of sample B3HD34 (280-105600-3) was within control

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

**TOTAL DISSOLVED SOLIDS**

Samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), B3HD34 (280-105600-3), B3HD33 (280-105600-4) and B3HD58 (280-105600-6) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 01/22/2018.

The chains of custody note that samples B3HD57 (280-105600-1), B3HD45 (280-105600-2), and B3HD33 (280-105600-4) were field filtered. TestAmerica Denver's LIMS does not have an option for field filtered Total Dissolved Solids 2540C. As instructed by the client, the "total" method chain was logged (SIR18-0406).

Sample B3HD46 (280-105600-5) was reanalyzed using a lower initial volume due to constituent concentration. The reporting limit has been adjusted accordingly.

Insufficient volume was available for a sample duplicate for the re-analysis of sample B3HD46 (280-105600-5) in analysis batch 280-402581. A duplicate LCS (LCSD) was analyzed.

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

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Darlene Bandy  
Project Manager



<b>SAMPLE ISSUE RESOLUTION (SIR) REPORT</b>		<b>SIR Number:</b> SIR18-0406 <b>Rev. Number:</b> 0 <b>Date Initiated:</b> 01/22/2018
<b><u>SAMPLE EVENT INFORMATION</u></b>		
<b>SAF NUM(S):</b>	F18-015	
<b>LABORATORY:</b>	TADN	
<b><u>SAMPLING INFORMATION</u></b>		
<b>NUMBER OF SAMPLES:</b>	3	
<b>SAMPLE NUMBERS:</b>	B3HD33, B3HD45, B3HD57	
<b>SAMPLE MATRIX:</b>	WATER	
<b>SDG NUM(S):</b>		
<b><u>ISSUE BACKGROUND</u></b>		
<b>CLASS:</b>	Sample Management Issues	
<b>TYPE:</b>	Method Correction	
<b>DESCRIPTION:</b>	Chains of custody F18-015-027, F18-015-015, and F18-015-003 indicate that these samples were field filtered; however, TADN does not have a method chain set up in its LIMS for field filtered TDS 2540C, field filtered TSS 2540D, or field filtered VOCs 8260B.	
<b><u>RESOLUTION</u></b>		
<b>PROPOSED RESOLUTION:</b>	TADN proposes to log the standard analysis for these methods, and narrate that these samples are field filtered, or cancel these analyses.	
<b>FINAL RESOLUTION:</b>	Laboratory should report the results under the 'total' method chain and note in the case narrative that the chain indicates the samples were field filtered. SMR has the filtered status noted in the LIMS.	
<b>SUBMITTED BY:</b>		
BANDY, DF	_____	01/18/2018 _____
<b>ACCEPTED BY:</b>		
NAGEL, SE	_____	01/22/2018 _____



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 280-105600-1

SDG Number: DN0307

**Login Number: 105600**

**List Number: 1**

**Creator: True, Joshua A**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity wasn't checked or is < /= background as measured by a survey meter.	True	70 CPM
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	0.7, 0.7 C
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.	True	
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	



**CH2MHill Plateau Remediation Company**

**COLLECTOR** KATHY TURNER CHPRC  
**SAMPLING LOCATION** DNO307  
 V-9P3-1-SAM post-remediation Post 25 micron  
**ICE CHEST NO.** GWS-411  
**SHIPPED TO** TestAmerica Denver

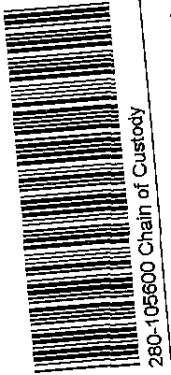
**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

**COMPANY CONTACT** SUMNER, LC  
**TELEPHONE NO.** 376-3922  
**PROJECT COORDINATOR** SUMNER, LC  
**SAF NO.** F18-015  
**PURCHASE ORDER/CHARGE CODE** 304235  
**BILL OF LADING/AIR BILL NO.** 7772 4021 2927

**PROJECT DESIGNATION** 200 West Pump & Treat - Special Modu-Tank Sampling - Water  
**FIELD LOGBOOK NO.** HMF-491-14  
**ACTUAL SAMPLE DEPTH** N/A  
**METHOD OF SHIPMENT** ORIGINAL  
**FEDERAL EXPRESS**

**F18-015-027** **PAGE 1 OF 1** **REQUIRED TAT** 7 Days

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS	SPECIAL HANDLING AND/OR STORAGE
A=Air DL=Drum L=Liquids DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HNO3 to pH <2 Cool <=6C	6 Months	G/P	1	500mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	
		HCl or H2SO4 to pH <2/Cool <=6C	14 Days	6Gs*	4	40mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
			7 Days				SEE ITEM (3) IN SPECIAL INSTRUCTIONS	



0.6, 0.6 to 1.0 BE#8 transferred by JT 1-18-18

**CHAIN OF POSSESSION**

RELINQUISHED BY/REMOVED FROM: KATHY TURNER CHPRC  
 DATE/TIME: JAN 17 2018 11:00  
 RECEIVED BY/STORED IN: Troy Bacon CHPRC  
 DATE/TIME: JAN 17 2018 11:50

FEDEX  
 Reed Potluff  
 1-18-18  
 0930

**SPECIAL INSTRUCTIONS**  
 (1) 6020\_METALS\_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium}; 6010\_METALS\_ICP: COMMON (Add-on) {Boron};  
 (2) 8260\_VOA\_GCMS: COMMON {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total)};  
 (3) 2540C\_TDS: COMMON {Total dissolved solids}; 2540D\_TSS: COMMON {Total suspended solids}; 2320\_ALKALINITY: COMMON {Alkalinity};

**FINAL SAMPLE DISPOSITION** DISPOSAL METHOD  
**DATE/TIME**

**FRIDAY** **1/19/2018**





CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-015-015	PAGE 1 OF 1
COLLECTOR KATHY TURNER CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	REQUIRED TAT 7 Days	
SAMPLING LOCATION 93 LBS D N O S O T MNF-1-16 post 5 miles	PROJECT DESIGNATION 200 West Pump & Treat - Special Modu-Tank Sampling - Water	SAF NO. F18-015		ORIGINAL	
ICE CHEST NO. GWS-411	FIELD LOGBOOK NO. HNF-N-491-1A	PURCHASE ORDER/CHARGE CODE 304235		METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO TestAmerica Denver		OFFSITE PROPERTY NO. 8972		BILL OF LADING/AIR BILL NO. 7712 4021 2927	

MATRIX*	PRESERVATION	HCl or H2SO4 to pH <2/Cool <=6C	Cool <=6C
A=Air DL=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	6 Months G/P	14 Days	7 Days
POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458-1.	HOLDING TIME	aggs*	G/P
SPECIAL HANDLING AND/OR STORAGE N/A	TYPE OF CONTAINER	4	1
	NO. OF CONTAINER(S)	500mL	1L
	VOLUME	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO. B3HD45	FILTERED Yes	WATER	MATRIX*
SAMPLE DATE JAN 17 2018 1045	SAMPLE TIME	✓	✓

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM KATHY TURNER CHPRC		DATE/TIME JAN 17 2018 1400	SIGN/ PRINT NAMES RECEIVED BY/STORED IN Troy Bacon CHPRC FEDEX	DATE/TIME JAN 17 2018 1550
KATHY TURNER CHPRC		DATE/TIME JAN 17 2018 1400	RECEIVED BY/STORED IN Troy Bacon CHPRC FedEx	DATE/TIME JAN 17 2018 1550
SPECIAL INSTRUCTIONS (1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium}; 6010_METALS_ICP: COMMON (Add-on) {Boron}; (2) 8260_VOA_GCMS: COMMON {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Trichloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total)}; (3) 2540C_TDS: COMMON {Total dissolved solids}; 2540D_TSS: COMMON {Total suspended solids}; 2320_ALKALINITY: COMMON {Alkalinity};		DISPOSED BY DATE/TIME		
FINAL SAMPLE DISPOSITION		DISPOSAL METHOD		
PRINTED ON 1/4/2018		TRVL NUM = TRVL-18-071		
FSR ID = FSR55843		A-6003-618 (REV 3)		



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-015-004	PAGE 1 OF 1
COLLECTOR <b>KATHY TURNER</b> CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	REQUIRED TAT 7 Days	
SAMPLING LOCATION Raw water from modutanks V-491-1-SAM	PROJECT DESIGNATION 200 West Pump & Treat - Special Modu-Tank Sampling - Water		SAF NO. F18-015	<b>ORIGINAL</b>	
ICE CHEST NO. 405 GWS-398 TEB R17-18	FIELD LOGBOOK NO. HWF.N.491-19	ACTUAL SAMPLE DEPTH N/A	PURCHASE ORDER/CHARGE CODE 304235	METHOD OF SHIPMENT FEDERAL EXPRESS	
SHIPPED TO TestAmerica Denver	OFFSITE PROPERTY NO. 8972	BILL OF LADING/AIR BILL NO. 7712 4021 3176			

MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION HI or H2SO4 to pH <2/Cool <=6C	HI or H2SO4 to pH <2/Cool <=6C
	HOLDING TIME 6 Months	7 Days	14 Days
	TYPE OF CONTAINER G/P	G/P	6Gs*
	NO. OF CONTAINER(S) 1	1	2
	VOLUME 500mL	1L	40mL
SPECIAL HANDLING AND/OR STORAGE N/A	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO. B3HD34	FILTERED N/A	MATRIX* WATER	
	SAMPLE DATE JAN 17 2018	SAMPLE TIME 1018	

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM KATHY TURNER CHPRC	SIGN/PRINT NAMES RECEIVED BY/STORED IN Troy Bacon CHPRC	DATE/TIME JAN 17 2018 1150
Troy Bacon CHPRC	RECEIVED BY/STORED IN FedEx	DATE/TIME 1-18-18 0930
DISPOSAL METHOD	DISPOSED BY	DATE/TIME
FINAL SAMPLE DISPOSITION PRINTED ON 1/17/2018	TRVL NUM = TRVL-18-071	A-6003-618 (REV 3)

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-015-003	PAGE 1 OF 1
COLLECTOR KATHY TURNER CHPRC	DU0307	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	REQUIRED TAT 7 Days
SAMPLING LOCATION Raw water from modubanks	V. 4 PL 1 - SAM	PROJECT DESIGNATION 200 West Pump & Treat - Special Modu-Tank Sampling - Water	SAF NO. F18-015	PURCHASE ORDER/CHARGE CODE 304235	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. 405	HWF-N 491-19	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH N/A	BILL OF LADING/AIR BILL NO. 7712 4021 3176	ORIGINAL
SHIPPED TO TestAmerica Denver	8972	OFFSITE PROPERTY NO.			

MATRIX*	PRESERVATION	HNO3 to pH <2	HCl or H2SO4 to pH <2/Cool <=6C	Cool <=6C
<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/1ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.				
<b>HOLDING TIME</b> 6 Months				7 Days
<b>TYPE OF CONTAINER</b> G/P				G/P
<b>NO. OF CONTAINER(S)</b> 1				1
<b>VOLUME</b> 500mL				1L
<b>SPECIAL HANDLING AND/OR STORAGE</b> N/A				SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME
B3HD33	Yes	WATER	JAN 17 2018	1019		Troy Bacon CHPRC Troy Bacon CHPRC JAN 17 2018 1150	
						FEDEX FedEx Troy Bacon CHPRC JAN 17 2018 1400	
						Rad Yoffmif 1-18-18 est 20	

**SPECIAL INSTRUCTIONS**  
 (1) 6020\_METALS\_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium}; 6010\_METALS\_ICP: COMMON (Add-on) {Boron};  
 (2) 8260\_VOA\_GCMS: COMMON {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total)};  
 (3) 2540C\_TDS: COMMON {Total dissolved solids}; 2540D\_TSS: COMMON {Total suspended solids}; 2320\_ALKALINITY: COMMON {Alkalinity};

FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-015-016	PAGE 1 OF 1
COLLECTOR KATHY TURNER CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	REQUIRED TAT 7 Days	
SAMPLING LOCATION 4411-3001 post 25 minutes	PROJECT DESIGNATION 200 West Pump & Treat - Special Modu-Tank Sampling - Water	SAF NO. F18-015			
ICE CHEST NO. GWS-300 1-18-18	FIELD LOGBOOK NO. F18-1491-1A	ACTUAL SAMPLE DEPTH NT	PURCHASE ORDER/CHARGE CODE 304235		
SHIPPED TO TestAmerica Denver		BILL OF LADING/AIR BILL NO. 771240213176			

MATRIX*	PRESERVATION	HNO3 to pH <2	HCl or H2SO4 to pH <2/Cool <=6C
POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			Cool <=6C
HOLDING TIME 6 Months	G/P	14 Days	7 Days
TYPE OF CONTAINER NO. OF CONTAINER(S)	4	ags*	G/P
VOLUME 500mL	1	40mL	1L
SPECIAL HANDLING AND/OR STORAGE N/A	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME
B3HD46	N/A	WATER	JAN 17 2018	1045

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM KATHY TURNER CHPRC	SIGN/ PRINT NAMES RECEIVED BY/STORED IN Troy Bacon CHPRC FEDEX	DATE/TIME JAN 17 2018 1150
TROY BACON CHPRC	RECEIVED BY Troy L. Bacon	DATE/TIME 1-18-18 0930
SPECIAL INSTRUCTIONS (1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium}; 6010_METALS_ICP: COMMON (Add-on) {Boron}; (2) 8260_VOA_GCMS: COMMON {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total)}; (3) 2540C_TDS: COMMON {Total dissolved solids}; 2540D_TSS: COMMON {Total suspended solids}; 2320_ALKALINITY: COMMON {Alkalinity};		
FINAL SAMPLE DISPOSITION PRINTED ON 1/4/2018	DISPOSAL METHOD TRVL NUM = TRVL-18-071	DATE/TIME A-6003-618 (REV 3)

**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F18-015-028 PAGE 1 OF 1

**REQUIRED TAT**  
7 Days

**ORIGINAL**  
METHOD OF SHIPMENT  
FEDERAL EXPRESS

**PROJECT COORDINATOR**  
SUMNER, LC

**PROJECT DESIGNATION**  
200 West Pump & Treat - Special Modu-Tank Sampling - Water

**COMPANY CONTACT**  
SUMNER, LC

**TELEPHONE NO.**  
376-3922

**SAF NO.**  
F18-015

**PURCHASE ORDER/CHARGE CODE**  
304235

**FIELD LOGBOOK NO.**  
HNF-491-10

**ACTUAL SAMPLE DEPTH**  
N/A

**OFFSITE PROPERTY NO.**  
0912

**BILL OF LADING/AIR BILL NO.**  
771240213174

**SHIPPED TO**  
TestAmerica Denver

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HNO3 to pH <2	HCl or H2SO4 to pH <2/Cool <=6C	Cool <=6C
A=Air DL=Drum L=Liquid DS=Drum S=Solids O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	*Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	6 Months	14 Days	7 Days	
		G/P	ags*	G/P	
		1	4	1	
		500mL	40mL	IL	
		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	
<b>SPECIAL HANDLING AND/OR STORAGE</b> N/A		<b>SAMPLE DATE</b> JAN 17 2018	<b>SAMPLE TIME</b> 0914		
<b>SAMPLE NO.</b> B3HD58	<b>FILTERED</b> N/A	<b>MATRIX*</b> WATER			

**SPECIAL INSTRUCTIONS**

(1) 6020 METALS\_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020 METALS\_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010 METALS\_ICP: COMMON {Calcium, Iron, Magnesium}; 6010 METALS\_ICP: COMMON (Add-on) {Boron}; (2) 8260\_VOA\_GCMS: COMMON {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total)}; (3) 2540C\_TDS: COMMON {Total dissolved solids}; 2540D\_TSS: COMMON {Total suspended solids}; 2320\_ALKALINITY: COMMON {Alkalinity};

**CHAIN OF POSSESSION**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME
KATHY TURNER CHPRC	JAN 17 2018 11:58	Troy Bacon CHPRC	JAN 17 2018 11:50
Troy Bacon CHPRC	JAN 17 2018 14:02	FEDEX	
Fede		Reed Polthoff	1-18-18 0930

**DISPOSED BY**

**FINAL SAMPLE DISPOSITION**

**DISPOSAL METHOD**

**DATE/TIME**

TRVL NUM = TRVL-18-071

FSR ID = FSR55844

PRINTED ON 1/4/2018

A-6003-618 (REV 3)



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### FedEx® Tracking

**771240212927**

Ship date:  
Wed 1/17/2018

Actual delivery:  
Thu 1/18/2018 9:23 am

Richland, WA US

**Delivered**

ARVADA, CO US

Signed for by: A GOMEZ

3 Piece shipment

#### Travel History

Date/Time	Activity	Location
<b>1/18/2018 - Thursday</b>		
9:23 am	Delivered	ARVADA, CO
9:08 am	On FedEx vehicle for delivery	ARVADA, CO
8:32 am	At local FedEx facility	ARVADA, CO
6:33 am	In transit	MEMPHIS, TN
6:27 am	At destination sort facility	DENVER, CO
6:23 am	In transit	MEMPHIS, TN
5:23 am	Departed FedEx location	MEMPHIS, TN
4:09 am	In transit	MEMPHIS, TN
12:29 am	Arrived at FedEx location	MEMPHIS, TN
<b>1/17/2018 - Wednesday</b>		
4:47 pm	Left FedEx origin facility	PASCO, WA
2:43 pm	Picked up	PASCO, WA
2:37 pm	Shipment information sent to FedEx	

#### Shipment Facts

<b>Tracking Number</b>	771240212927	<b>Service</b>	FedEx Priority Overnight
<b>Master tracking number</b>	771240212835	<b>Weight</b>	93 lbs / 42.18 kgs
<b>Signature services</b>	Direct signature required	<b>Delivered To</b>	Shipping/Receiving
<b>Total pieces</b>	3	<b>Total shipment weight</b>	93 lbs / 42.18 kgs
<b>Terms</b>	Third Party	<b>Shipper reference</b>	ptr# 8972
<b>Packaging</b>	Your Packaging	<b>Special handling section</b>	Deliver Weekday, Direct Signature Required
<b>Standard transit</b>	1/18/2018 by 10:30 am		

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FedEx® Tracking

**771240213176**

Ship date:		Actual delivery:	
Wed 1/17/2018		Thu 1/18/2018 9:23 am	
Richland, WA US	<b>Delivered</b>	ARVADA, CO US	
	<i>Signed for by A GOMEZ</i>		

3 Piece shipment

Travel History

Date/Time	Activity	Location
<b>- 1/18/2018 - Thursday</b>		
9:23 am	Delivered	ARVADA, CO
9:08 am	On FedEx vehicle for delivery	ARVADA, CO
8:32 am	At local FedEx facility	ARVADA, CO
6:33 am	In transit	MEMPHIS, TN
6:27 am	At destination sort facility	DENVER, CO
5:23 am	In transit	MEMPHIS, TN
5:23 am	Departed FedEx location	MEMPHIS, TN
4:09 am	In transit	MEMPHIS, TN
12:29 am	Arrived at FedEx location	MEMPHIS, TN
<b>- 1/17/2018 - Wednesday</b>		
4:47 pm	Left FedEx origin facility	PASCO, WA
2:43 pm	Picked up	PASCO, WA
2:37 pm	Shipment information sent to FedEx	

Shipment Facts

<b>Tracking Number</b>	771240213176	<b>Service</b>	FedEx Priority Overnight
<b>Master tracking number</b>	771240212835	<b>Weight</b>	84 lbs / 38.1 kgs
<b>Signature services</b>	Direct signature required	<b>Delivered To</b>	Shipping/Receiving
<b>Total pieces</b>	3	<b>Total shipment weight</b>	84 lbs / 38.1 kgs
<b>Terms</b>	Third Party	<b>Shipper reference</b>	pl# 8972
<b>Packaging</b>	Your Packaging	<b>Special handling section</b>	Deliver Weekday, Direct Signature Required
<b>Standard transit</b>	1/18/2018 by 10:30 am		

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Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

**Qualifiers**

**GC/MS VOA**

Qualifier	Qualifier Description
U	Analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

**GC/MS VOA TICs**

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.

**Metals**

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

**General Chemistry**

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
y	Duplicate analysis not within control limits.
U	Analyzed for but not detected.

**Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)



Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010D	Metals (ICP)	SW846	TAL DEN
6020B	Metals (ICP/MS)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN

**Protocol References:**

SM = "Standard Methods For The Examination Of Water And Wastewater",  
 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



Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-105600-1	B3HD57	Water	01/17/18 09:14	01/18/18 09:30
280-105600-2	B3HD45	Water	01/17/18 10:45	01/18/18 09:30
280-105600-3	B3HD34	Water	01/17/18 10:18	01/18/18 09:30
280-105600-4	B3HD33	Water	01/17/18 10:18	01/18/18 09:30
280-105600-5	B3HD46	Water	01/17/18 10:45	01/18/18 09:30
280-105600-6	B3HD58	Water	01/17/18 09:14	01/18/18 09:30



Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: B3HD57  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-1  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 10:36	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 10:36	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 10:36	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 10:36	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 10:36	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 10:36	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 10:36	1
Acetone	7.2	J	10	1.9	ug/L			01/23/18 10:36	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:36	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 10:36	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 10:36	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 10:36	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 10:36	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:36	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 10:36	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 10:36	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 10:36	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 10:36	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 10:36	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 10:36	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.4	N	ug/L		4.19			01/23/18 10:36	1
Isopropyl alcohol	88		ug/L		5.33	67-63-0		01/23/18 10:36	1
Unknown	1.6	N	ug/L		6.47			01/23/18 10:36	1
Unknown	53	N	ug/L		8.37			01/23/18 10:36	1
Dimethyl trisulfide	3.5	N J	ug/L		11.47	3658-80-8		01/23/18 10:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		01/23/18 10:36	1
4-Bromofluorobenzene (Surr)	84		70 - 130		01/23/18 10:36	1
Dibromofluoromethane (Surr)	103		70 - 130		01/23/18 10:36	1
Toluene-d8 (Surr)	101		70 - 130		01/23/18 10:36	1

Client Sample ID: B3HD45  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-2  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 13:25	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 13:25	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 13:25	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 13:25	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 13:25	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 13:25	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 13:25	1
Acetone	1.9	U	10	1.9	ug/L			01/23/18 13:25	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 13:25	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 13:25	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 13:25	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 13:25	1

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: B3HD45  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-2  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 13:25	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 13:25	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 13:25	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 13:25	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 13:25	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 13:25	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 13:25	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 13:25	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	2.4	N	ug/L		4.05			01/23/18 13:25	1
Unknown	1.4	N	ug/L		4.34			01/23/18 13:25	1
Unknown	1.9	N	ug/L		4.40			01/23/18 13:25	1
Unknown	1.7	N	ug/L		6.47			01/23/18 13:25	1
Disulfide, dimethyl	2.9	N J	ug/L		8.37	624-92-0		01/23/18 13:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 130		01/23/18 13:25	1
4-Bromofluorobenzene (Surr)	92		70 - 130		01/23/18 13:25	1
Dibromofluoromethane (Surr)	109		70 - 130		01/23/18 13:25	1
Toluene-d8 (Surr)	105		70 - 130		01/23/18 13:25	1

Client Sample ID: B3HD34  
Date Collected: 01/17/18 10:18  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-3  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 10:15	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 10:15	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 10:15	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 10:15	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 10:15	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 10:15	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 10:15	1
Acetone	3.5	J	10	1.9	ug/L			01/23/18 10:15	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:15	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 10:15	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 10:15	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 10:15	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 10:15	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:15	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 10:15	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 10:15	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 10:15	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 10:15	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 10:15	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 10:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.5	N	ug/L		4.18			01/23/18 10:15	1
Unknown	1.5	N	ug/L		6.47			01/23/18 10:15	1

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: B3HD34  
Date Collected: 01/17/18 10:18  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-3  
Matrix: Water

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	11	N	ug/L		8.37			01/23/18 10:15	1
Cyclotetrasiloxane, octamethyl-	8.9	N J	ug/L		10.37	556-67-2		01/23/18 10:15	1
Unknown	4.2	N	ug/L		12.12			01/23/18 10:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 130					01/23/18 10:15	1
4-Bromofluorobenzene (Surr)	88		70 - 130					01/23/18 10:15	1
Dibromofluoromethane (Surr)	97		70 - 130					01/23/18 10:15	1
Toluene-d8 (Surr)	95		70 - 130					01/23/18 10:15	1

Client Sample ID: B3HD33  
Date Collected: 01/17/18 10:18  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-4  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 10:58	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 10:58	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 10:58	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 10:58	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 10:58	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 10:58	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 10:58	1
Acetone	1.9	U	10	1.9	ug/L			01/23/18 10:58	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:58	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 10:58	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 10:58	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 10:58	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 10:58	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 10:58	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 10:58	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 10:58	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 10:58	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 10:58	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 10:58	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 10:58	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.3	N	ug/L		4.39			01/23/18 10:58	1
Unknown	1.6	N	ug/L		6.47			01/23/18 10:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 130					01/23/18 10:58	1
4-Bromofluorobenzene (Surr)	87		70 - 130					01/23/18 10:58	1
Dibromofluoromethane (Surr)	103		70 - 130					01/23/18 10:58	1
Toluene-d8 (Surr)	95		70 - 130					01/23/18 10:58	1

Client Sample ID: B3HD46  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-5  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 13:46	1

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: B3HD46  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-5  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 13:46	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 13:46	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 13:46	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 13:46	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 13:46	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 13:46	1
Acetone	1.9	U	10	1.9	ug/L			01/23/18 13:46	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 13:46	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 13:46	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 13:46	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 13:46	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 13:46	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 13:46	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 13:46	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 13:46	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 13:46	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 13:46	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 13:46	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 13:46	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.7	N	ug/L		6.47			01/23/18 13:46	1
Disulfide, dimethyl	3.1	N J	ug/L		8.37	624-92-0		01/23/18 13:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		01/23/18 13:46	1
4-Bromofluorobenzene (Surr)	82		70 - 130		01/23/18 13:46	1
Dibromofluoromethane (Surr)	97		70 - 130		01/23/18 13:46	1
Toluene-d8 (Surr)	93		70 - 130		01/23/18 13:46	1

Client Sample ID: B3HD58  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-6  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 14:08	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 14:08	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 14:08	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 14:08	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 14:08	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 14:08	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 14:08	1
Acetone	4.1	J	10	1.9	ug/L			01/23/18 14:08	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 14:08	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 14:08	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 14:08	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 14:08	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 14:08	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 14:08	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 14:08	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 14:08	1

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Client Sample ID: B3HD58  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-6  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 14:08	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 14:08	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 14:08	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 14:08	1
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.7	N	ug/L		6.47			01/23/18 14:08	1
Disulfide, dimethyl	48	N J	ug/L		8.37	624-92-0		01/23/18 14:08	1
Dimethyl trisulfide	3.7	N J	ug/L		11.47	3658-80-8		01/23/18 14:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 130					01/23/18 14:08	1
4-Bromofluorobenzene (Surr)	82		70 - 130					01/23/18 14:08	1
Dibromofluoromethane (Surr)	96		70 - 130					01/23/18 14:08	1
Toluene-d8 (Surr)	94		70 - 130					01/23/18 14:08	1

**Method: 6010D - Metals (ICP)**

Client Sample ID: B3HD34  
Date Collected: 01/17/18 10:18  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-3  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	138		100	4.4	ug/L		01/22/18 14:38	01/23/18 15:11	1
Calcium	23600		200	34.5	ug/L		01/22/18 14:38	01/23/18 15:11	1
Iron	139		100	22.0	ug/L		01/22/18 14:38	01/23/18 15:11	1
Magnesium	27300		200	10.7	ug/L		01/22/18 14:38	01/23/18 15:11	1

Client Sample ID: B3HD46  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-5  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140		100	4.4	ug/L		01/22/18 14:38	01/23/18 15:23	1
Calcium	23800		200	34.5	ug/L		01/22/18 14:38	01/23/18 15:23	1
Iron	46.4	B	100	22.0	ug/L		01/22/18 14:38	01/23/18 15:23	1
Magnesium	27700		200	10.7	ug/L		01/22/18 14:38	01/23/18 15:23	1

Client Sample ID: B3HD58  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-6  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	139		100	4.4	ug/L		01/22/18 14:38	01/23/18 15:26	1
Calcium	26100		200	34.5	ug/L		01/22/18 14:38	01/23/18 15:26	1
Iron	53.8	B	100	22.0	ug/L		01/22/18 14:38	01/23/18 15:26	1
Magnesium	29200		200	10.7	ug/L		01/22/18 14:38	01/23/18 15:26	1

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: 6010D - Metals (ICP) - Dissolved**

**Client Sample ID: B3HD57**  
**Date Collected: 01/17/18 09:14**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140		100	4.4	ug/L		01/22/18 14:38	01/23/18 14:33	1
Calcium	23900		200	34.5	ug/L		01/22/18 14:38	01/23/18 14:33	1
Iron	22.0	U	100	22.0	ug/L		01/22/18 14:38	01/23/18 14:33	1
Magnesium	27600		200	10.7	ug/L		01/22/18 14:38	01/23/18 14:33	1

**Client Sample ID: B3HD45**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	137		100	4.4	ug/L		01/22/18 14:38	01/23/18 14:46	1
Calcium	23000		200	34.5	ug/L		01/22/18 14:38	01/23/18 14:46	1
Iron	22.0	U	100	22.0	ug/L		01/22/18 14:38	01/23/18 14:46	1
Magnesium	27400		200	10.7	ug/L		01/22/18 14:38	01/23/18 14:46	1

**Client Sample ID: B3HD33**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	129		100	4.4	ug/L		01/22/18 14:38	01/23/18 14:48	1
Calcium	22000		200	34.5	ug/L		01/22/18 14:38	01/23/18 14:48	1
Iron	22.0	U	100	22.0	ug/L		01/22/18 14:38	01/23/18 14:48	1
Magnesium	26000		200	10.7	ug/L		01/22/18 14:38	01/23/18 14:48	1

**Method: 6020B - Metals (ICP/MS)**

**Client Sample ID: B3HD34**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	55.6		50.0	9.2	ug/L		01/22/18 14:38	01/23/18 11:35	1
Cobalt	18.6		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 11:35	1
Chromium	0.77	B	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 11:35	1
Copper	1.6	B	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 11:35	1
Manganese	128		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 11:35	1
Molybdenum	20.5		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 11:35	1
Nickel	10.8		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 11:35	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 11:35	1
Uranium	0.30	B	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 11:35	1
Zinc	7.3	B	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 11:35	1

**Client Sample ID: B3HD46**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	27.6	B	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 11:54	1
Cobalt	8.2		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 11:54	1
Chromium	0.57	B	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 11:54	1
Copper	1.5	B	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 11:54	1
Manganese	88.2		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 11:54	1
Molybdenum	19.5		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 11:54	1

TestAmerica Denver



Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 6020B - Metals (ICP/MS) (Continued)

Client Sample ID: B3HD46  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-5  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	9.6		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 11:54	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 11:54	1
Uranium	0.27	B	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 11:54	1
Zinc	3.2	B	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 11:54	1

Client Sample ID: B3HD58  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-6  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	13.9	B	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 11:58	1
Cobalt	13.4		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 11:58	1
Chromium	0.61	B	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 11:58	1
Copper	2.4		2.0	0.56	ug/L		01/22/18 14:38	01/23/18 11:58	1
Manganese	145		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 11:58	1
Molybdenum	19.9		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 11:58	1
Nickel	12.6		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 11:58	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 11:58	1
Uranium	0.23	B	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 11:58	1
Zinc	2.8	B	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 11:58	1

Method: 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: B3HD57  
Date Collected: 01/17/18 09:14  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-1  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 10:37	1
Chromium	0.50	U	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 10:37	1
Cobalt	6.3		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 10:37	1
Copper	0.84	B	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 10:37	1
Manganese	92.5		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 10:37	1
Molybdenum	20.9		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 10:37	1
Nickel	11.1		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 10:37	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 10:37	1
Uranium	0.21	B	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 10:37	1
Zinc	2.0	U	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 10:37	1

Client Sample ID: B3HD45  
Date Collected: 01/17/18 10:45  
Date Received: 01/18/18 09:30

Lab Sample ID: 280-105600-2  
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 10:56	1
Chromium	0.50	U	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 10:56	1
Cobalt	4.8		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 10:56	1
Copper	0.71	B	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 10:56	1
Manganese	62.4		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 10:56	1
Molybdenum	19.3		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 10:56	1
Nickel	9.1		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 10:56	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 10:56	1
Uranium	0.25	B	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 10:56	1

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: 6020B - Metals (ICP/MS) - Dissolved (Continued)**

**Client Sample ID: B3HD45**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	2.0	U	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 10:56	1

**Client Sample ID: B3HD33**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 11:08	1
Chromium	0.50	U	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 11:08	1
<b>Cobalt</b>	<b>4.5</b>		1.0	0.054	ug/L		01/22/18 14:38	01/23/18 11:08	1
Copper	0.56	U	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 11:08	1
<b>Manganese</b>	<b>54.9</b>		1.0	0.31	ug/L		01/22/18 14:38	01/23/18 11:08	1
<b>Molybdenum</b>	<b>18.7</b>		2.0	0.14	ug/L		01/22/18 14:38	01/23/18 11:08	1
<b>Nickel</b>	<b>9.5</b>		2.0	0.30	ug/L		01/22/18 14:38	01/23/18 11:08	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 11:08	1
<b>Uranium</b>	<b>0.21</b>	<b>B</b>	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 11:08	1
Zinc	2.0	U	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 11:08	1

**General Chemistry**

**Client Sample ID: B3HD57**  
**Date Collected: 01/17/18 09:14**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<b>710000</b>		10000	4700	ug/L			01/22/18 08:36	1
Total Suspended Solids	<b>2400</b>	<b>B y</b>	4000	1100	ug/L			01/22/18 08:31	1

**Client Sample ID: B3HD45**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<b>670000</b>		10000	4700	ug/L			01/22/18 08:36	1
Total Suspended Solids	1100	U	4000	1100	ug/L			01/22/18 08:31	1

**Client Sample ID: B3HD34**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-3**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	<b>130000</b>		5000	1070	ug/L			01/22/18 13:43	1
Total Dissolved Solids	<b>694000</b>		10000	4700	ug/L			01/22/18 08:36	1
Total Suspended Solids	<b>60000</b>		7690	2120	ug/L			01/22/18 08:31	1

**Client Sample ID: B3HD33**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<b>687000</b>		10000	4700	ug/L			01/22/18 08:36	1
Total Suspended Solids	1100	U	4000	1100	ug/L			01/22/18 08:31	1

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**General Chemistry**

**Client Sample ID: B3HD46**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-5**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	128000		5000	1070	ug/L			01/22/18 14:03	1
Total Dissolved Solids	652000		40000	18800	ug/L			01/24/18 08:58	1
Total Suspended Solids	112000		4000	1100	ug/L			01/22/18 08:31	1

**Client Sample ID: B3HD58**  
**Date Collected: 01/17/18 09:14**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	132000		5000	1070	ug/L			01/22/18 13:56	1
Total Dissolved Solids	691000		10000	4700	ug/L			01/22/18 08:36	1
Total Suspended Solids	26000		4000	1100	ug/L			01/22/18 08:31	1

**General Chemistry - Dissolved**

**Client Sample ID: B3HD57**  
**Date Collected: 01/17/18 09:14**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	143000		5000	1070	ug/L			01/22/18 14:23	1

**Client Sample ID: B3HD45**  
**Date Collected: 01/17/18 10:45**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	129000		5000	1070	ug/L			01/22/18 14:17	1

**Client Sample ID: B3HD33**  
**Date Collected: 01/17/18 10:18**  
**Date Received: 01/18/18 09:30**

**Lab Sample ID: 280-105600-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	128000		5000	1070	ug/L			01/22/18 14:10	1

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

**Lab Sample ID: MB 280-402404/6**  
**Matrix: Water**  
**Analysis Batch: 402404**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			01/23/18 08:46	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			01/23/18 08:46	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			01/23/18 08:46	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			01/23/18 08:46	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			01/23/18 08:46	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			01/23/18 08:46	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			01/23/18 08:46	1
Acetone	1.9	U	10	1.9	ug/L			01/23/18 08:46	1
Benzene	0.16	U	1.0	0.16	ug/L			01/23/18 08:46	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			01/23/18 08:46	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			01/23/18 08:46	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			01/23/18 08:46	1
Chloroform	0.16	U	1.0	0.16	ug/L			01/23/18 08:46	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			01/23/18 08:46	1
Methylene Chloride	0.32	U	2.0	0.32	ug/L			01/23/18 08:46	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			01/23/18 08:46	1
Toluene	0.17	U	1.0	0.17	ug/L			01/23/18 08:46	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			01/23/18 08:46	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			01/23/18 08:46	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			01/23/18 08:46	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	1.75	N	ug/L		4.46			01/23/18 08:46	1
Unknown	1.50	N	ug/L		6.47			01/23/18 08:46	1
Cyclotetrasiloxane, octamethyl-	10.2	N J	ug/L		10.37	556-67-2		01/23/18 08:46	1
Unknown	4.35	N	ug/L		12.12			01/23/18 08:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		01/23/18 08:46	1
4-Bromofluorobenzene (Surr)	93		70 - 130		01/23/18 08:46	1
Dibromofluoromethane (Surr)	104		70 - 130		01/23/18 08:46	1
Toluene-d8 (Surr)	98		70 - 130		01/23/18 08:46	1

**Lab Sample ID: LCS 280-402404/4**  
**Matrix: Water**  
**Analysis Batch: 402404**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	5.00	4.65		ug/L		93	70 - 130
1,1,2-Trichloroethane	5.00	4.53		ug/L		91	70 - 130
1,1-Dichloroethane	5.00	4.50		ug/L		90	70 - 130
1,1-Dichloroethene	5.00	4.30		ug/L		86	70 - 130
1,2-Dichloroethane	5.00	4.82		ug/L		96	70 - 130
2-Butanone (MEK)	20.0	19.2		ug/L		96	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	18.1		ug/L		91	70 - 130
Acetone	20.0	20.2		ug/L		101	70 - 130
Benzene	5.00	4.50		ug/L		90	70 - 130

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-402404/4  
Matrix: Water  
Analysis Batch: 402404

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon disulfide	5.00	4.39		ug/L		88	70 - 130
Carbon tetrachloride	5.00	4.71		ug/L		94	70 - 130
Chlorobenzene	5.00	4.27		ug/L		85	70 - 130
Chloroform	5.00	4.63		ug/L		93	70 - 130
Ethylbenzene	5.00	4.07		ug/L		81	70 - 130
Methylene Chloride	5.00	3.94		ug/L		79	70 - 130
Tetrachloroethene	5.00	4.18		ug/L		84	70 - 130
Toluene	5.00	4.43		ug/L		89	70 - 130
Trichloroethene	5.00	4.45		ug/L		89	70 - 130
Vinyl chloride	5.00	4.11		ug/L		82	70 - 130
Xylenes, Total	10.0	7.94		ug/L		79	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	90		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
Toluene-d8 (Surr)	93		70 - 130

Lab Sample ID: 280-105600-1 MS  
Matrix: Water  
Analysis Batch: 402404

Client Sample ID: B3HD57  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.16	U	5.00	5.24		ug/L		105	70 - 130
1,1,2-Trichloroethane	0.27	U	5.00	5.04		ug/L		101	70 - 130
1,1-Dichloroethane	0.22	U	5.00	5.01		ug/L		100	70 - 130
1,1-Dichloroethene	0.23	U	5.00	4.76		ug/L		95	70 - 130
1,2-Dichloroethane	0.13	U	5.00	5.49		ug/L		110	70 - 130
2-Butanone (MEK)	2.0	U	20.0	20.7		ug/L		104	70 - 130
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	18.9		ug/L		95	70 - 130
Acetone	7.2	J	20.0	27.9		ug/L		103	70 - 130
Benzene	0.16	U	5.00	4.97		ug/L		99	70 - 130
Carbon disulfide	0.45	U	5.00	4.98		ug/L		100	70 - 130
Carbon tetrachloride	0.19	U	5.00	5.21		ug/L		104	70 - 130
Chlorobenzene	0.17	U	5.00	4.78		ug/L		96	70 - 130
Chloroform	0.16	U	5.00	5.20		ug/L		104	70 - 130
Ethylbenzene	0.16	U	5.00	4.58		ug/L		92	70 - 130
Methylene Chloride	0.32	U	5.00	4.07		ug/L		81	70 - 130
Tetrachloroethene	0.20	U	5.00	4.75		ug/L		95	70 - 130
Toluene	0.17	U	5.00	5.02		ug/L		100	70 - 130
Trichloroethene	0.16	U	5.00	4.94		ug/L		99	70 - 130
Vinyl chloride	0.10	U	5.00	5.09		ug/L		102	70 - 130
Xylenes, Total	0.19	U	10.0	8.91		ug/L		89	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	87		70 - 130

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-105600-1 MS  
Matrix: Water  
Analysis Batch: 402404

Client Sample ID: B3HD57  
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	99		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Lab Sample ID: 280-105600-1 MSD  
Matrix: Water  
Analysis Batch: 402404

Client Sample ID: B3HD57  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.16	U	5.00	5.15		ug/L		103	70 - 130	2	20
1,1,2-Trichloroethane	0.27	U	5.00	5.52		ug/L		110	70 - 130	9	20
1,1-Dichloroethane	0.22	U	5.00	5.17		ug/L		103	70 - 130	3	20
1,1-Dichloroethene	0.23	U	5.00	4.94		ug/L		99	70 - 130	4	20
1,2-Dichloroethane	0.13	U	5.00	5.58		ug/L		112	70 - 130	2	20
2-Butanone (MEK)	2.0	U	20.0	21.3		ug/L		106	70 - 130	3	20
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	19.2		ug/L		96	70 - 130	1	20
Acetone	7.2	J	20.0	25.4		ug/L		91	70 - 130	9	20
Benzene	0.16	U	5.00	5.12		ug/L		102	70 - 130	3	20
Carbon disulfide	0.45	U	5.00	5.03		ug/L		101	70 - 130	1	20
Carbon tetrachloride	0.19	U	5.00	5.28		ug/L		106	70 - 130	1	20
Chlorobenzene	0.17	U	5.00	4.91		ug/L		98	70 - 130	3	20
Chloroform	0.16	U	5.00	5.33		ug/L		107	70 - 130	3	20
Ethylbenzene	0.16	U	5.00	4.65		ug/L		93	70 - 130	1	20
Methylene Chloride	0.32	U	5.00	4.37		ug/L		87	70 - 130	7	20
Tetrachloroethene	0.20	U	5.00	4.88		ug/L		98	70 - 130	3	20
Toluene	0.17	U	5.00	5.19		ug/L		104	70 - 130	3	20
Trichloroethene	0.16	U	5.00	5.06		ug/L		101	70 - 130	2	20
Vinyl chloride	0.10	U	5.00	4.83		ug/L		97	70 - 130	5	20
Xylenes, Total	0.19	U	10.0	9.12		ug/L		91	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	86		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
Toluene-d8 (Surr)	91		70 - 130

Lab Sample ID: 280-105600-3 MS  
Matrix: Water  
Analysis Batch: 402404

Client Sample ID: B3HD34  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.16	U	5.00	5.27		ug/L		105	70 - 130
1,1,2-Trichloroethane	0.27	U	5.00	4.92		ug/L		98	70 - 130
1,1-Dichloroethane	0.22	U	5.00	4.92		ug/L		98	70 - 130
1,1-Dichloroethene	0.23	U	5.00	4.73		ug/L		95	70 - 130
1,2-Dichloroethane	0.13	U	5.00	5.50		ug/L		110	70 - 130
2-Butanone (MEK)	2.0	U	20.0	19.1		ug/L		96	70 - 130
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	17.5		ug/L		87	70 - 130
Acetone	3.5	J	20.0	27.8		ug/L		121	70 - 130

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-105600-3 MS

Matrix: Water

Analysis Batch: 402404

Client Sample ID: B3HD34

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
Benzene	0.16	U	5.00	4.90		ug/L		98	70 - 130	
Carbon disulfide	0.45	U	5.00	4.73		ug/L		95	70 - 130	
Carbon tetrachloride	0.19	U	5.00	5.39		ug/L		108	70 - 130	
Chlorobenzene	0.17	U	5.00	4.76		ug/L		95	70 - 130	
Chloroform	0.16	U	5.00	5.22		ug/L		104	70 - 130	
Ethylbenzene	0.16	U	5.00	4.57		ug/L		91	70 - 130	
Methylene Chloride	0.32	U	5.00	3.99		ug/L		80	70 - 130	
Tetrachloroethene	0.20	U	5.00	4.83		ug/L		97	70 - 130	
Toluene	0.17	U	5.00	4.94		ug/L		99	70 - 130	
Trichloroethene	0.16	U	5.00	4.95		ug/L		99	70 - 130	
Vinyl chloride	0.10	U	5.00	4.84		ug/L		97	70 - 130	
Xylenes, Total	0.19	U	10.0	8.79		ug/L		88	70 - 130	
<b>MS MS</b>										
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	106		70 - 130							
4-Bromofluorobenzene (Surr)	94		70 - 130							
Dibromofluoromethane (Surr)	105		70 - 130							
Toluene-d8 (Surr)	99		70 - 130							

Lab Sample ID: 280-105600-3 MSD

Matrix: Water

Analysis Batch: 402404

Client Sample ID: B3HD34

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.16	U	5.00	4.66		ug/L		93	70 - 130	12	20
1,1,2-Trichloroethane	0.27	U	5.00	4.94		ug/L		99	70 - 130	0	20
1,1-Dichloroethane	0.22	U	5.00	4.72		ug/L		94	70 - 130	4	20
1,1-Dichloroethene	0.23	U	5.00	4.16		ug/L		83	70 - 130	13	20
1,2-Dichloroethane	0.13	U	5.00	5.25		ug/L		105	70 - 130	5	20
2-Butanone (MEK)	2.0	U	20.0	19.3		ug/L		96	70 - 130	1	20
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	17.6		ug/L		88	70 - 130	1	20
Acetone	3.5	J	20.0	27.6		ug/L		120	70 - 130	1	20
Benzene	0.16	U	5.00	4.67		ug/L		93	70 - 130	5	20
Carbon disulfide	0.45	U	5.00	4.28		ug/L		86	70 - 130	10	20
Carbon tetrachloride	0.19	U	5.00	4.77		ug/L		95	70 - 130	12	20
Chlorobenzene	0.17	U	5.00	4.44		ug/L		89	70 - 130	7	20
Chloroform	0.16	U	5.00	4.90		ug/L		98	70 - 130	6	20
Ethylbenzene	0.16	U	5.00	4.18		ug/L		84	70 - 130	9	20
Methylene Chloride	0.32	U	5.00	3.79		ug/L		76	70 - 130	5	20
Tetrachloroethene	0.20	U	5.00	4.25		ug/L		85	70 - 130	13	20
Toluene	0.17	U	5.00	4.62		ug/L		92	70 - 130	7	20
Trichloroethene	0.16	U	5.00	4.54		ug/L		91	70 - 130	9	20
Vinyl chloride	0.10	U	5.00	4.68		ug/L		94	70 - 130	3	20
Xylenes, Total	0.19	U	10.0	8.04		ug/L		80	70 - 130	9	20
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	98		70 - 130								

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)**

Lab Sample ID: 280-105600-3 MSD  
Matrix: Water  
Analysis Batch: 402404

Client Sample ID: B3HD34  
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
Toluene-d8 (Surr)	92		70 - 130

**Method: 6010D - Metals (ICP)**

Lab Sample ID: MB 280-402358/1-A  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 402358

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.4	U	100	4.4	ug/L		01/22/18 14:38	01/23/18 15:06	1
Calcium	34.5	U	200	34.5	ug/L		01/22/18 14:38	01/23/18 15:06	1
Iron	22.0	U	100	22.0	ug/L		01/22/18 14:38	01/23/18 15:06	1
Magnesium	10.7	U	200	10.7	ug/L		01/22/18 14:38	01/23/18 15:06	1

Lab Sample ID: LCS 280-402358/2-A  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 402358

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1000	1042		ug/L		104	86 - 110
Calcium	50000	49350		ug/L		99	80 - 120
Iron	1000	978.2		ug/L		98	80 - 120
Magnesium	50000	49340		ug/L		99	80 - 120

Lab Sample ID: 280-105600-3 MS  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD34  
Prep Type: Total/NA  
Prep Batch: 402358

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	138		1000	1160		ug/L		102	87 - 113
Calcium	23600		50000	72490		ug/L		98	75 - 125
Iron	139		1000	1141		ug/L		100	75 - 125
Magnesium	27300		50000	75480		ug/L		96	75 - 125

Lab Sample ID: 280-105600-3 MSD  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD34  
Prep Type: Total/NA  
Prep Batch: 402358

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	138		1000	1151		ug/L		101	87 - 113	1	20
Calcium	23600		50000	72270		ug/L		97	75 - 125	0	20
Iron	139		1000	1129		ug/L		99	75 - 125	1	20
Magnesium	27300		50000	76980		ug/L		99	75 - 125	2	20



Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 280-402360/1-A  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 402360

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.4	U	100	4.4	ug/L		01/22/18 14:38	01/23/18 14:28	1
Calcium	34.5	U	200	34.5	ug/L		01/22/18 14:38	01/23/18 14:28	1
Iron	22.0	U	100	22.0	ug/L		01/22/18 14:38	01/23/18 14:28	1
Magnesium	10.7	U	200	10.7	ug/L		01/22/18 14:38	01/23/18 14:28	1

Lab Sample ID: LCS 280-402360/2-A  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 402360

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1055		ug/L		105	86 - 110
Calcium	50000	50020		ug/L		100	80 - 120
Iron	1000	995.2		ug/L		100	80 - 120
Magnesium	50000	50510		ug/L		101	80 - 120

Lab Sample ID: 280-105600-1 MS  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD57  
Prep Type: Dissolved  
Prep Batch: 402360

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	140		1000	1195		ug/L		106	87 - 113
Calcium	23900		50000	73490		ug/L		99	75 - 125
Iron	22.0	U	1000	965.4		ug/L		97	75 - 125
Magnesium	27600		50000	77910		ug/L		101	75 - 125

Lab Sample ID: 280-105600-1 MSD  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD57  
Prep Type: Dissolved  
Prep Batch: 402360

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	140		1000	1223		ug/L		108	87 - 113	2	20
Calcium	23900		50000	75410		ug/L		103	75 - 125	3	20
Iron	22.0	U	1000	994.0		ug/L		99	75 - 125	3	20
Magnesium	27600		50000	79380		ug/L		104	75 - 125	2	20

Lab Sample ID: 280-105600-4 MS  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD33  
Prep Type: Dissolved  
Prep Batch: 402360

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	129		1000	1167		ug/L		104	87 - 113
Calcium	22000		50000	71840		ug/L		100	75 - 125
Iron	22.0	U	1000	986.5		ug/L		99	75 - 125
Magnesium	26000		50000	76020		ug/L		100	75 - 125

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: 280-105600-4 MSD  
Matrix: Water  
Analysis Batch: 402549

Client Sample ID: B3HD33  
Prep Type: Dissolved  
Prep Batch: 402360  
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	129		1000	1190		ug/L		106	87 - 113	2	20
Calcium	22000		50000	73090		ug/L		102	75 - 125	2	20
Iron	22.0	U	1000	1022		ug/L		102	75 - 125	3	20
Magnesium	26000		50000	76900		ug/L		102	75 - 125	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-402359/1-A  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 402359

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 11:27	1
Chromium	0.50	U	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 11:27	1
Cobalt	0.054	U	1.0	0.054	ug/L		01/22/18 14:38	01/23/18 11:27	1
Copper	0.56	U	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 11:27	1
Manganese	0.31	U	1.0	0.31	ug/L		01/22/18 14:38	01/23/18 11:27	1
Molybdenum	0.14	U	2.0	0.14	ug/L		01/22/18 14:38	01/23/18 11:27	1
Nickel	0.30	U	2.0	0.30	ug/L		01/22/18 14:38	01/23/18 11:27	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 11:27	1
Uranium	0.050	U	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 11:27	1
Zinc	2.0	U	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 11:27	1

Lab Sample ID: LCS 280-402359/2-A  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 402359  
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	400	422.5		ug/L		106	80 - 120
Chromium	40.0	39.85		ug/L		100	80 - 120
Cobalt	40.0	40.05		ug/L		100	80 - 120
Copper	40.0	39.02		ug/L		98	80 - 120
Manganese	40.0	44.20		ug/L		110	80 - 120
Molybdenum	40.0	37.31		ug/L		93	80 - 120
Nickel	40.0	39.31		ug/L		98	80 - 120
Selenium	40.0	35.93		ug/L		90	80 - 120
Uranium	40.0	39.72		ug/L		99	80 - 120
Zinc	40.0	42.82		ug/L		107	80 - 120

Lab Sample ID: 280-105600-3 MS  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD34  
Prep Type: Total/NA  
Prep Batch: 402359  
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum	55.6		400	455.7		ug/L		100	75 - 125
Cobalt	18.6		40.0	58.17		ug/L		99	75 - 125
Chromium	0.77	B	40.0	39.68		ug/L		97	75 - 125
Copper	1.6	B	40.0	40.24		ug/L		97	75 - 125

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-105600-3 MS  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD34  
Prep Type: Total/NA  
Prep Batch: 402359  
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Manganese	128		40.0	173.9		ug/L		116	75 - 125
Molybdenum	20.5		40.0	59.94		ug/L		99	75 - 125
Nickel	10.8		40.0	50.14		ug/L		98	75 - 125
Selenium	0.70	U	40.0	34.69		ug/L		87	75 - 125
Uranium	0.30	B	40.0	39.48		ug/L		98	75 - 125
Zinc	7.3	B	40.0	48.27		ug/L		102	75 - 125

Lab Sample ID: 280-105600-3 MSD  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD34  
Prep Type: Total/NA  
Prep Batch: 402359  
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	55.6		400	484.1		ug/L		107	75 - 125	6	20
Cobalt	18.6		40.0	57.66		ug/L		98	75 - 125	1	20
Chromium	0.77	B	40.0	38.93		ug/L		95	75 - 125	2	20
Copper	1.6	B	40.0	39.98		ug/L		96	75 - 125	1	20
Manganese	128		40.0	170.0		ug/L		106	75 - 125	2	20
Molybdenum	20.5		40.0	57.40		ug/L		92	75 - 125	4	20
Nickel	10.8		40.0	48.27		ug/L		94	75 - 125	4	20
Selenium	0.70	U	40.0	35.49		ug/L		89	75 - 125	2	20
Uranium	0.30	B	40.0	39.13		ug/L		97	75 - 125	1	20
Zinc	7.3	B	40.0	46.98		ug/L		99	75 - 125	3	20

Lab Sample ID: MB 280-402361/1-A  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 402361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		01/22/18 14:38	01/23/18 10:29	1
Chromium	0.50	U	2.0	0.50	ug/L		01/22/18 14:38	01/23/18 10:29	1
Cobalt	0.054	U	1.0	0.054	ug/L		01/22/18 14:38	01/23/18 10:29	1
Copper	0.56	U	2.0	0.56	ug/L		01/22/18 14:38	01/23/18 10:29	1
Manganese	0.31	U	1.0	0.31	ug/L		01/22/18 14:38	01/23/18 10:29	1
Molybdenum	0.14	U	2.0	0.14	ug/L		01/22/18 14:38	01/23/18 10:29	1
Nickel	0.30	U	2.0	0.30	ug/L		01/22/18 14:38	01/23/18 10:29	1
Selenium	0.70	U	5.0	0.70	ug/L		01/22/18 14:38	01/23/18 10:29	1
Uranium	0.050	U	1.0	0.050	ug/L		01/22/18 14:38	01/23/18 10:29	1
Zinc	2.0	U	10.0	2.0	ug/L		01/22/18 14:38	01/23/18 10:29	1

Lab Sample ID: LCS 280-402361/2-A  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 402361  
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	400	418.4		ug/L		105	80 - 120
Chromium	40.0	39.81		ug/L		100	80 - 120
Cobalt	40.0	41.33		ug/L		103	80 - 120
Copper	40.0	40.43		ug/L		101	80 - 120
Manganese	40.0	43.65		ug/L		109	80 - 120

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-402361/2-A  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 402361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	40.0	40.20		ug/L		101	80 - 120
Nickel	40.0	40.86		ug/L		102	80 - 120
Selenium	40.0	39.14		ug/L		98	80 - 120
Uranium	40.0	39.73		ug/L		99	80 - 120
Zinc	40.0	41.44		ug/L		104	80 - 120

Lab Sample ID: 280-105600-1 MS  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD57  
Prep Type: Dissolved  
Prep Batch: 402361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	9.2	U	400	410.8		ug/L		103	75 - 125
Chromium	0.50	U	40.0	39.90		ug/L		100	75 - 125
Cobalt	6.3		40.0	45.95		ug/L		99	75 - 125
Copper	0.84	B	40.0	39.35		ug/L		96	75 - 125
Manganese	92.5		40.0	139.6		ug/L		118	75 - 125
Molybdenum	20.9		40.0	61.38		ug/L		101	75 - 125
Nickel	11.1		40.0	49.34		ug/L		96	75 - 125
Selenium	0.70	U	40.0	35.60		ug/L		89	75 - 125
Uranium	0.21	B	40.0	39.79		ug/L		99	75 - 125
Zinc	2.0	U	40.0	41.08		ug/L		103	75 - 125

Lab Sample ID: 280-105600-1 MSD  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD57  
Prep Type: Dissolved  
Prep Batch: 402361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aluminum	9.2	U	400	440.5		ug/L		110	75 - 125	7	20
Chromium	0.50	U	40.0	38.99		ug/L		97	75 - 125	2	20
Cobalt	6.3		40.0	45.20		ug/L		97	75 - 125	2	20
Copper	0.84	B	40.0	39.13		ug/L		96	75 - 125	1	20
Manganese	92.5		40.0	134.6		ug/L		105	75 - 125	4	20
Molybdenum	20.9		40.0	57.75		ug/L		92	75 - 125	6	20
Nickel	11.1		40.0	48.68		ug/L		94	75 - 125	1	20
Selenium	0.70	U	40.0	35.58		ug/L		89	75 - 125	0	20
Uranium	0.21	B	40.0	39.02		ug/L		97	75 - 125	2	20
Zinc	2.0	U	40.0	42.19		ug/L		105	75 - 125	3	20

Lab Sample ID: 280-105600-4 MS  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD33  
Prep Type: Dissolved  
Prep Batch: 402361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	9.2	U	400	400.9		ug/L		100	75 - 125
Chromium	0.50	U	40.0	39.48		ug/L		99	75 - 125
Cobalt	4.5		40.0	43.73		ug/L		98	75 - 125
Copper	0.56	U	40.0	38.98		ug/L		97	75 - 125
Manganese	54.9		40.0	104.7		ug/L		125	75 - 125
Molybdenum	18.7		40.0	59.10		ug/L		101	75 - 125

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: 280-105600-4 MS  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD33  
Prep Type: Dissolved  
Prep Batch: 402361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	9.5		40.0	47.56		ug/L		95	75 - 125
Selenium	0.70	U	40.0	35.48		ug/L		89	75 - 125
Uranium	0.21	B	40.0	39.79		ug/L		99	75 - 125
Zinc	2.0	U	40.0	40.55		ug/L		101	75 - 125

Lab Sample ID: 280-105600-4 MSD  
Matrix: Water  
Analysis Batch: 402490

Client Sample ID: B3HD33  
Prep Type: Dissolved  
Prep Batch: 402361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aluminum	9.2	U	400	399.5		ug/L		100	75 - 125	0	20
Chromium	0.50	U	40.0	39.13		ug/L		98	75 - 125	1	20
Cobalt	4.5		40.0	43.11		ug/L		97	75 - 125	1	20
Copper	0.56	U	40.0	38.15		ug/L		95	75 - 125	2	20
Manganese	54.9		40.0	104.2		ug/L		123	75 - 125	0	20
Molybdenum	18.7		40.0	57.69		ug/L		97	75 - 125	2	20
Nickel	9.5		40.0	47.34		ug/L		94	75 - 125	0	20
Selenium	0.70	U	40.0	35.53		ug/L		89	75 - 125	0	20
Uranium	0.21	B	40.0	38.93		ug/L		97	75 - 125	2	20
Zinc	2.0	U	40.0	39.34		ug/L		98	75 - 125	3	20

**Method: SM 2320B - Alkalinity**

Lab Sample ID: MB 280-402461/5  
Matrix: Water  
Analysis Batch: 402461

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	3540	B	5000	1070	ug/L			01/22/18 13:37	1

Lab Sample ID: LCS 280-402461/4  
Matrix: Water  
Analysis Batch: 402461

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	200000	185800		ug/L		93	80 - 120

Lab Sample ID: 280-105600-3 DU  
Matrix: Water  
Analysis Batch: 402461

Client Sample ID: B3HD34  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity as CaCO3	130000		142700		ug/L		9	20

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: SM 2320B - Alkalinity (Continued)**

Lab Sample ID: 280-105600-1 DU  
Matrix: Water  
Analysis Batch: 402461

Client Sample ID: B3HD57  
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity as CaCO3	143000		143700		ug/L		0.3	20

**Method: SM 2540C - Solids, Total Dissolved (TDS)**

Lab Sample ID: MB 280-402290/1  
Matrix: Water  
Analysis Batch: 402290

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4700	U	10000	4700	ug/L			01/22/18 08:36	1

Lab Sample ID: LCS 280-402290/2  
Matrix: Water  
Analysis Batch: 402290

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500000	494000		ug/L		99	86 - 110

Lab Sample ID: 280-105600-1 DU  
Matrix: Water  
Analysis Batch: 402290

Client Sample ID: B3HD57  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	710000		709000		ug/L		0.1	10

Lab Sample ID: 280-105600-3 DU  
Matrix: Water  
Analysis Batch: 402290

Client Sample ID: B3HD34  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	694000		700000		ug/L		0.9	10

Lab Sample ID: MB 280-402581/1  
Matrix: Water  
Analysis Batch: 402581

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4700	U	10000	4700	ug/L			01/24/18 08:58	1

Lab Sample ID: LCS 280-402581/2  
Matrix: Water  
Analysis Batch: 402581

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500000	486000		ug/L		97	86 - 110

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
SDG: DN0307

**Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)**

Lab Sample ID: LCSD 280-402581/3  
Matrix: Water  
Analysis Batch: 402581

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	500000	483000		ug/L		97	86 - 110	1	20

**Method: SM 2540D - Solids, Total Suspended (TSS)**

Lab Sample ID: MB 280-402288/1  
Matrix: Water  
Analysis Batch: 402288

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1100	U	4000	1100	ug/L			01/22/18 08:31	1

Lab Sample ID: LCS 280-402288/2  
Matrix: Water  
Analysis Batch: 402288

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	100000	99200		ug/L		99	86 - 114

Lab Sample ID: 280-105600-1 DU  
Matrix: Water  
Analysis Batch: 402288

Client Sample ID: B3HD57  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	2400	B y	2000	B y	ug/L		18	10

Lab Sample ID: 280-105600-3 DU  
Matrix: Water  
Analysis Batch: 402288

Client Sample ID: B3HD34  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	60000		56920		ug/L		5	10

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

GC/MS VOA

Analysis Batch: 402404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Total/NA	Water	8260B	
280-105600-2	B3HD45	Total/NA	Water	8260B	
280-105600-3	B3HD34	Total/NA	Water	8260B	
280-105600-4	B3HD33	Total/NA	Water	8260B	
280-105600-5	B3HD46	Total/NA	Water	8260B	
280-105600-6	B3HD58	Total/NA	Water	8260B	
MB 280-402404/6	Method Blank	Total/NA	Water	8260B	
LCS 280-402404/4	Lab Control Sample	Total/NA	Water	8260B	
280-105600-1 MS	B3HD57	Total/NA	Water	8260B	
280-105600-1 MSD	B3HD57	Total/NA	Water	8260B	
280-105600-3 MS	B3HD34	Total/NA	Water	8260B	
280-105600-3 MSD	B3HD34	Total/NA	Water	8260B	

Metals

Prep Batch: 402358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-3	B3HD34	Total/NA	Water	3010A	
280-105600-5	B3HD46	Total/NA	Water	3010A	
280-105600-6	B3HD58	Total/NA	Water	3010A	
MB 280-402358/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-402358/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-105600-3 MS	B3HD34	Total/NA	Water	3010A	
280-105600-3 MSD	B3HD34	Total/NA	Water	3010A	

Prep Batch: 402359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-3	B3HD34	Total/NA	Water	3020A	
280-105600-5	B3HD46	Total/NA	Water	3020A	
280-105600-6	B3HD58	Total/NA	Water	3020A	
MB 280-402359/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-402359/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-105600-3 MS	B3HD34	Total/NA	Water	3020A	
280-105600-3 MSD	B3HD34	Total/NA	Water	3020A	

Prep Batch: 402360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Dissolved	Water	3005A	
280-105600-2	B3HD45	Dissolved	Water	3005A	
280-105600-4	B3HD33	Dissolved	Water	3005A	
MB 280-402360/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-402360/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-105600-1 MS	B3HD57	Dissolved	Water	3005A	
280-105600-1 MSD	B3HD57	Dissolved	Water	3005A	
280-105600-4 MS	B3HD33	Dissolved	Water	3005A	
280-105600-4 MSD	B3HD33	Dissolved	Water	3005A	

Prep Batch: 402361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Dissolved	Water	3005A	



Client: CH2M Hill Plateau Remediation Company  
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TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

**Metals (Continued)**

**Prep Batch: 402361 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-2	B3HD45	Dissolved	Water	3005A	
280-105600-4	B3HD33	Dissolved	Water	3005A	
MB 280-402361/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-402361/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-105600-1 MS	B3HD57	Dissolved	Water	3005A	
280-105600-1 MSD	B3HD57	Dissolved	Water	3005A	
280-105600-4 MS	B3HD33	Dissolved	Water	3005A	
280-105600-4 MSD	B3HD33	Dissolved	Water	3005A	

**Analysis Batch: 402490**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Dissolved	Water	6020B	402361
280-105600-2	B3HD45	Dissolved	Water	6020B	402361
280-105600-3	B3HD34	Total/NA	Water	6020B	402359
280-105600-4	B3HD33	Dissolved	Water	6020B	402361
280-105600-5	B3HD46	Total/NA	Water	6020B	402359
280-105600-6	B3HD58	Total/NA	Water	6020B	402359
MB 280-402359/1-A	Method Blank	Total/NA	Water	6020B	402359
MB 280-402361/1-A	Method Blank	Total Recoverable	Water	6020B	402361
LCS 280-402359/2-A	Lab Control Sample	Total/NA	Water	6020B	402359
LCS 280-402361/2-A	Lab Control Sample	Total Recoverable	Water	6020B	402361
280-105600-1 MS	B3HD57	Dissolved	Water	6020B	402361
280-105600-1 MSD	B3HD57	Dissolved	Water	6020B	402361
280-105600-3 MS	B3HD34	Total/NA	Water	6020B	402359
280-105600-3 MSD	B3HD34	Total/NA	Water	6020B	402359
280-105600-4 MS	B3HD33	Dissolved	Water	6020B	402361
280-105600-4 MSD	B3HD33	Dissolved	Water	6020B	402361

**Analysis Batch: 402549**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Dissolved	Water	6010D	402360
280-105600-2	B3HD45	Dissolved	Water	6010D	402360
280-105600-3	B3HD34	Total/NA	Water	6010D	402358
280-105600-4	B3HD33	Dissolved	Water	6010D	402360
280-105600-5	B3HD46	Total/NA	Water	6010D	402358
280-105600-6	B3HD58	Total/NA	Water	6010D	402358
MB 280-402358/1-A	Method Blank	Total/NA	Water	6010D	402358
MB 280-402360/1-A	Method Blank	Total Recoverable	Water	6010D	402360
LCS 280-402358/2-A	Lab Control Sample	Total/NA	Water	6010D	402358
LCS 280-402360/2-A	Lab Control Sample	Total Recoverable	Water	6010D	402360
280-105600-1 MS	B3HD57	Dissolved	Water	6010D	402360
280-105600-1 MSD	B3HD57	Dissolved	Water	6010D	402360
280-105600-3 MS	B3HD34	Total/NA	Water	6010D	402358
280-105600-3 MSD	B3HD34	Total/NA	Water	6010D	402358
280-105600-4 MS	B3HD33	Dissolved	Water	6010D	402360
280-105600-4 MSD	B3HD33	Dissolved	Water	6010D	402360

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

**General Chemistry**

**Analysis Batch: 402288**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Total/NA	Water	SM 2540D	
280-105600-2	B3HD45	Total/NA	Water	SM 2540D	
280-105600-3	B3HD34	Total/NA	Water	SM 2540D	
280-105600-4	B3HD33	Total/NA	Water	SM 2540D	
280-105600-5	B3HD46	Total/NA	Water	SM 2540D	
280-105600-6	B3HD58	Total/NA	Water	SM 2540D	
MB 280-402288/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-402288/2	Lab Control Sample	Total/NA	Water	SM 2540D	
280-105600-1 DU	B3HD57	Total/NA	Water	SM 2540D	
280-105600-3 DU	B3HD34	Total/NA	Water	SM 2540D	

**Analysis Batch: 402290**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Total/NA	Water	SM 2540C	
280-105600-2	B3HD45	Total/NA	Water	SM 2540C	
280-105600-3	B3HD34	Total/NA	Water	SM 2540C	
280-105600-4	B3HD33	Total/NA	Water	SM 2540C	
280-105600-6	B3HD58	Total/NA	Water	SM 2540C	
MB 280-402290/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-402290/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-105600-1 DU	B3HD57	Total/NA	Water	SM 2540C	
280-105600-3 DU	B3HD34	Total/NA	Water	SM 2540C	

**Analysis Batch: 402461**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-1	B3HD57	Dissolved	Water	SM 2320B	
280-105600-2	B3HD45	Dissolved	Water	SM 2320B	
280-105600-3	B3HD34	Total/NA	Water	SM 2320B	
280-105600-4	B3HD33	Dissolved	Water	SM 2320B	
280-105600-5	B3HD46	Total/NA	Water	SM 2320B	
280-105600-6	B3HD58	Total/NA	Water	SM 2320B	
MB 280-402461/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-402461/4	Lab Control Sample	Total/NA	Water	SM 2320B	
280-105600-1 DU	B3HD57	Dissolved	Water	SM 2320B	
280-105600-3 DU	B3HD34	Total/NA	Water	SM 2320B	

**Analysis Batch: 402581**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-105600-5	B3HD46	Total/NA	Water	SM 2540C	
MB 280-402581/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-402581/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-402581/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	



Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F18-015

TestAmerica Job ID: 280-105600-1  
 SDG: DN0307

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-130)	BFB (70-130)	DBFM (70-130)	TOL (70-130)
280-105600-1	B3HD57	104	84	103	101
280-105600-1 MS	B3HD57	102	87	99	95
280-105600-1 MSD	B3HD57	99	86	98	91
280-105600-2	B3HD45	107	92	109	105
280-105600-3	B3HD34	98	88	97	95
280-105600-3 MS	B3HD34	106	94	105	99
280-105600-3 MSD	B3HD34	98	87	98	92
280-105600-4	B3HD33	103	87	103	95
280-105600-5	B3HD46	96	82	97	93
280-105600-6	B3HD58	97	82	96	94
LCS 280-402404/4	Lab Control Sample	99	90	101	93
MB 280-402404/6	Method Blank	101	93	104	98

**Surrogate Legend**

- DCA = 1,2-Dichloroethane-d4 (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DBFM = Dibromofluoromethane (Surr)
- TOL = Toluene-d8 (Surr)

