

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-6942-1
TestAmerica Sample Delivery Group: SL1460
Client Project/Site: X14-038

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: General Mailbox



Authorized for release by:
6/30/2014 4:20:03 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

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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.

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460



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Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Job ID: 160-6942-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
June 30, 2014
Attention: Scot Fitzgerald

SDG : SL1460
Number of Samples : 9 samples
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : June 5, 2014

II. Introduction

Between June 4 and June 5, 9 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: X14-038

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Deviation from Request: None

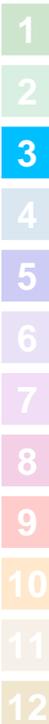
IV. Definitions

- QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
DUP- Laboratory Duplicate
MS- Matrix Spike
MSD- Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- B - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
B - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the



Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Job ID: 160-6942-1 (Continued)**Laboratory: TestAmerica St. Louis (Continued)**

MDL.

- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate qualification unless otherwise noted in the case narrative. Due to limitations of the LIMS system, "D" flags may appear on QC samples.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **O** - For all organic analyses, the LCS (LCSD) recoveries are outside QC limits.
- **M** - For inorganic analyses, the precision was outside control limits.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.

DRO**Batch: 125868**

The sample exhibited hydrocarbon peaks in the Diesel chromatography range: B2WJM6 (160-6957-2) The sample pattern does not match Diesel which may be indicative of the presence of an unknown hydrocarbon. No further action is required.

ICP Metals**Batch: 128611/128782**

Zinc was detected in method blank MB 160-128611/1-A 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 "B". If the associated sample reported a result above the MDL and/or RL and is not greater than 5x the method blank, the result has been flagged "C".

The serial dilution performed for the following sample(s) was outside control limits due to an error in making the 1:5 dilution. The purpose of the serial dilution is to identify potential matrix interference. The MS\MSD yields the same purpose. An MS\MSD was performed on the same sample as the serial dilution and recovered within 10% of the true value for all target analytes. There is no evidence of a matrix interference based on the recovery of the MS\MSD. Original results will be reported: (160-6942-2 SD).

Anions**Batch: 125501**

The following samples were diluted to bring the concentration of target analytes within the calibration range: B2WJN6 (160-6942-1), B2WJP4 (160-6942-4). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

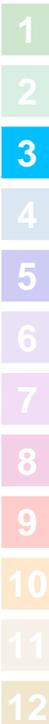
The matrix spike (MS) recovery for batch 125501 was outside the upper control limits for Phosphate. The associated laboratory control sample (LCS) recovery was within acceptance limits. (160-6942-1 MS), B2WJN6 (160-6942-1), B2WJP4 (160-6942-4) This analyte has been qualified accordingly with an "N" flag in the associated samples.

The continuing calibration verification (CCV) associated recovered above the upper control limit for Phosphate. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported: (160-6942-1 MS), B2WJN6 (160-6942-1), B2WJP4 (160-6942-4).

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460



Job ID: 160-6942-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Batch: 125745

The MS recovery was outside control limits for Phosphate in batch 125745. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. This analyte has been qualified accordingly with an "N" flag in the associated sample. For sample 6954-18 MS associated with this batch, the recovery for Fluoride was outside the upper control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (160-6954-9 MS) This analyte has been qualified accordingly with an "N" flag in the associated sample.

Batch: 126343

The following samples were diluted to bring the concentration of target analytes within the calibration range: B2WJM7 (160-6957-3). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

The following sample is reporting Chloride in this batch 126343. The sample duplicate in this batch is not reporting Chloride for this sample due to the fact that the sample duplicate is reporting Chloride from a lesser dilution in a separate batch. This sample is associated with a passing LCS and MS. B2WJM7 (160-6957-3).

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the signature on the cover page has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR14-244
REV NUM 0
DATE INITIATED 7/10/2014

SAMPLE EVENT INFORMATION

SAF NUM(S) X14-038
OPERABLE UNIT(S) 100-NR-2
PROJECT(S) CERC14
SAMPLE EVENT TITLE(S) CERC14
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
SAMPLE NUMBERS B2WJN6, B2WJP4
SAMPLE MATRIX WATER
COLLECTION DATE 6/3/2014 - 6/3/2014
SDG NUM SL1460

ISSUE BACKGROUND

CLASS Chain of Custody Issue (Field)
TYPE Incorrect Relinquish/Receipt Date/Time
DESCRIPTION Chain of custodys on pages 6 and 8 the first relinquish time is written as 11555 when it should be 1155

DISPOSITION

DESCRIPTION PROPOSED DISPOSITION: Document the excursion, insert the SIR into the data package and close the SIR.

JUSTIFICATION ACCEPTED DISPOSITION: Accept proposed resolution.

SUBMITTED BY: Kira Murray/CHPRC DATE: 7/9/14
 ACCEPTED BY: Susan Puckett/CHPRC DATE: 7/10/14

CH2M Hill Plateau Remediation Company J.R. Aguilar CHPRC 5/14/10		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST C.O.C. # X14-038-016 Page 1 of 1	
Collector J.R. Aguilar CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650	
SAF No. X14-038	Sampling Origin Hanford Site	Purchase Order/Charge Code 300106ES20	
Project Title 100-NR-2 Apatite Barrier, MAY 2014	Logbook No. HNF-N-506 64 / 48	Ice Chest No. GWS-320	
Shipped To (Lab) TestAmerica St. Louis	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 7701 8204 2152	
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR 171.15 (a) (1) (A) Dangerous Goods Regulations but are not releasable per DOE Order 458.1		SPECIAL INSTRUCTIONS Hold Time	Total Activity Exemption: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Sample No. B2WJN6	Filter * N W	Date 6-3-14	Time 1126
No/Type Container 1x500-mL P	Sample Analysis 300.0_ANIONS_IC: COMMON; <input checked="" type="checkbox"/> 300.0_ANIONS_IC: GW.01	Holding Time 48 Hours	Preservative Cool <=6C
B2WJN6	Activity Seen GG5/28/14	6 Months	None

Relinquished By J.R. Aguilar CHPRC	Date/Time JUN 03 2014 1155	Sign 	Received By F.M. Hall CHPRC	Date/Time JUN 03 2014 1155	Sign 	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By F.M. Hall CHPRC	Date/Time JUN 03 2014 1400	Sign 	Received By FEDEX	Date/Time JUN 03 2014	Sign 	
Relinquished By FEDEX	Date/Time JUN 03 2014	Sign 	Received By Brian Daniels	Date/Time 6/4/14 0945	Sign 	
Relinquished By FEDEX	Date/Time JUN 03 2014	Sign 	Received By Brian Daniels	Date/Time 6/4/14 0945	Sign 	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		
FINAL SAMPLE DISPOSITION		Disposed By		Date/Time		
PRINTED O 4/23/2014						



CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X14-038-015** Page 1 of 1

CH2MHill Plateau Remediation Company 911460

Collector: **J.R. Aguilar**
CHPRC

SAF No. **X14-038** Telephone No. **376-4650**

Project Title: **100-NR-2 Apatite Barrier, MAY 2014** Purchase Order/Charge Code **300106ES20**

Shipped To (Lab): **TestAmerica St. Louis** Ice Chest No. **605-320**

Protocol: **CERCLA** Bill of Lading/Air Bill No. **7701 8204 2152**

PRIORITY Offsite Property No. **N/A**

Priority: 30 Days Hold Time **N/A**

SPECIAL INSTRUCTIONS Total Activity Exemption: Yes No

POSSIBLE SAMPLE HAZARDS/REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR 173.101 (ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1)

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2WJN5	N	W	6-3-14	1126	1x500-mL GIP	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2
B2WJN5	N	W	6-3-14	1126	1x20 mL P	Activity Scan GG 5/28/14	6 Months	None
B2WJN4	Y	W	6-3-14	1126	1x500-mL GIP	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2

Reinquished By J.R. Aguilar CHPRC	Print 	Sign	Date/Time JUN 03 2014	Date/Time 1/55	Received By F.M. Hall CHPRC	Sign 	Date/Time JUN 03 2014	Date/Time 1/55	Matrix *
Reinquished By F.M. Hall CHPRC	Print 	Sign	Date/Time JUN 03 2014	Date/Time 1400	Received By FEDEX	Sign	Date/Time JUN 03 2014	Date/Time 1/55	S = Soil
Reinquished By FEDEX	Print 	Sign	Date/Time JUN 03 2014	Date/Time 0945	Received By Brian Davis	Sign 	Date/Time 6/4/14	Date/Time 0945	SE = Sediment
Reinquished By	Print	Sign	Date/Time	Date/Time	Received By	Sign	Date/Time	Date/Time	SO = Solid
									SL = Sludge
									W = Water
									O = Oil
									A = Air
									DS = Drum Solids
									DL = Drum Liquids
									T = Tissue
									WI = Wipe
									L = Liquid
									V = Vegetation
									X = Other

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

FINAL SAMPLE DISPOSITION

PRINTED 0 4/23/2014

A-6004-842 (REV 2)



CH2M Hill Plateau Remediation Company S11460		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST C.O.C. # X14-038-023 Page 1 of 1	
Collector J.R. Aguilar CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650	
SAF No. X14-038	Sampling Origin Hanford Site	Purchase Order/Charge Code 300106ES20	
Project Title 100-NR-2 Apatite Barrier, MAY 2014	Logbook No. HNF-N-506 64/49	Ice Chest No. GWS-320	
Shipped To (Lab) TestAmerica St. Louis	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 7701 9204 215Z	
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		SPECIAL INSTRUCTIONS Hold Time	Total Activity Exemption: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Sample No. B2WJP4	Filter N	Date 6-3-14	Time 0946
	No/Type Container 1x500-mL P	Sample Analysis 300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01 ✓	Holding Time 48 Hours
			Preservative Cool <=6C

Relinquished By J.R. Aguilar CHPRC	Date/Time JUN 03 2014 1155	Sign 	Print F.M. Hall CHPRC	Date/Time JUN 03 2014 1155	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By F.M. Hall CHPRC	Date/Time JUN 03 2014 1400	Sign 	Print FED EX	Date/Time JUN 03 2014 1400	
Relinquished By FED EX	Date/Time JUN 03 2014	Sign 	Print FED EX	Date/Time JUN 03 2014	
Relinquished By FED EX	Date/Time JUN 03 2014	Sign 	Print FED EX	Date/Time JUN 03 2014	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time	

6/30/2014

PRINTED ON 5/28/2014

A-6004-842 (REV 2)



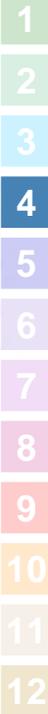
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CH2MHill Plateau Remediation Company J.R. Aguilar CHPRC		C.O.C.# X14-038-022 Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector	J.R. Aguilar CHPRC	Contact/Requester	WATERS-HUSTED, K
SAF No.	X14-038	Sampling Origin	Hanford Site
Project Title	100-NR-2 Apatite Barrier, MAY 2014	Logbook No.	HNF-N-506 624 / 48
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	CERCLA	Priority:	30 Days PRIORITY
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.		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Telephone No. 376-4650 Purchase Order/Charge Code 300106ES20 Ice Chest No. GWS-320 Bill of Lading/Air Bill No. 7701 8204 215Z Offsite Property No. N/A

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2WJP2	Y	6-3-14	0946	1x500-mL G/P	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2
B2WJP3	N	6-3-14	0946	1x500-mL G/P	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2

Relinquished By J.R. Aguilar CHPRC	Date/Time JUN 03 2014 1155	Print J.R. Aguilar	Sign [Signature]	Received By P.M. Hall CHPRC	Date/Time JUN 03 2014 1155	Print P.M. Hall	Sign [Signature]
Relinquished By [Signature]	Date/Time JUN 03 2014 1400	Print [Signature]	Sign [Signature]	Received By FED EX	Date/Time JUN 03 2014	Print FED EX	Sign [Signature]
Relinquished By [Signature]	Date/Time JUN 03 2014	Print [Signature]	Sign [Signature]	Received By Brian Daniels	Date/Time 6/4/14 0945	Print Brian Daniels	Sign [Signature]
Relinquished By 6/30/2014	Date/Time 6/30/2014	Print [Signature]	Sign [Signature]	Received By [Signature]	Date/Time 6/30/2014	Print [Signature]	Sign [Signature]

Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time
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Track your package or shipment with FedEx Tracking

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- 12

Detailed Results

770182042152

Save tracking results
 Ship (P/U) date :
 Tues 6/03/2014 3:46 pm
 RICHLAND, WA
 US



Delivered
 Signed for by: J.CLARK
 Actual delivery :
 Wed 6/04/2014 9:38 am
 EARTH CITY, MO
 US

Delivery Options

This shipment's delivery has been customized by the recipient. Login or Signup for delivery options to edit shipment's delivery has been customized by the recipient. Signup for delivery options to edit or cancel the been customized by the recipient. Add this address to My Profile to edit or cancel the settings. Renew your delivery option.
 Let us tell you when your shipment arrives. Sign up for delivery notifications Travel History

Date/Time	Activity	Location
6/04/2014 - Wednesday		
9:38 am	Delivered	EARTH CITY, MO
7:46 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:41 am	At local FedEx facility	EARTH CITY, MO
5:29 am	At destination sort facility	BERKELEY, MO
4:42 am	Departed FedEx location	MEMPHIS, TN
1:24 am	Arrived at FedEx location	MEMPHIS, TN
6/03/2014 - Tuesday		
5:21 pm	Left FedEx origin facility	PASCO, WA
3:46 pm	Picked up	PASCO, WA
3:14 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts
 Tracking number 770182042152
 Weight 75 lbs
 Total pieces 1
 Shipper reference GWS-320
 Special handling section Deliver Weekday
 Service FedEx Priority Overnight
 Delivered To Shipping/Receiving

Track your package or shipment with FedEx Tracking

Page 2 of 2

Total shipment weight 75 lbs / 34.02 kgs
Packaging Your Packaging

1

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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X14-038-008** Page 1 of 1

CH2MHill Plateau Remediation Company S11460

Collector: **J.R. Aguilar** Telephone No. 376-4650
CHPRC Purchase Order/Charge Code 300106ES20

SAF No. **X14-038** Ice Chest No. **6WS-335**

Project Title: **100-NR-2 Apatite Barrier, MAY 2014** Bill of Lading/Air Bill No. **7701 9691 6086**

Shipped To (Lab): **TestAmerica St. Louis** Offsite Property No. **N/A**

Protocol: **CERCLA** Priority: **30 Days**

POSSIBLE SAMPLE HAZARDS/REMARKS SPECIAL INSTRUCTIONS **PRIORITY**

*Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. Hold Time Total Activity Exemption: Yes No

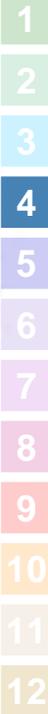
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2WJM5	Y	W	6-4-14	1141	1x500-mL G/P	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05 ✓	6 Months	HNO3 to pH <2
B2WJM6	N	W	6-4-14	1141	3x1-L aG	WTPH_DIESEL: COMMON ✓	14/40 Days	HCl to pH <2/Cool <=6C
B2WJM6	N	W	6-4-14	1141	1x500-mL G/P	6010_METALS_ICP: COMMON; ✓ 6010_METALS_ICP: GW 05 ✓	6 Months	HNO3 to pH <2

Relinquished By: J.R. Aguilar CHPRC	Print Sign	Date/Time	Received By: L.D. Wall CHPRC	Print Sign	Date/Time
Relinquished By: L.D. Wall CHPRC	Print Sign	Date/Time	Received By: FEDEX	Print Sign	Date/Time
Relinquished By: FEDEX	Print Sign	Date/Time	Received By: Jill Clarke Jill Clarke	Print Sign	Date/Time
Relinquished By: 6/30/2014	Print Sign	Date/Time	Received By: 6-5-14 0930	Print Sign	Date/Time

Disposal Method (e.g., Return to customer, per lab procedure, used in process) _____

Disposed By _____ Date/Time _____

Matrix *
 S = Soil DS = Drum Solids
 SE = Sediment DL = Drum Liquids
 SO = Solid T = Tissue
 SL = Sludge WI = Wipe
 W = Water L = Liquid
 O = Oil V = Vegetation
 A = Air X = Other



CH2M Hill Plateau Remediation Company J.R. Aguilar CHPRC 81460		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST C.O.C. # X14-038-009 Page 1 of 1	
Collector	J.R. Aguilar CHPRC	Contact/Requester	WATERS-HUSTED, K
SAF No.	X14-038	Sampling Origin	Hanford Site
Project Title	100-NR-2 Apatite Barrier, MAY 2014	Logbook No.	HNF-N-506 64 / 50
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	CERCLA	Priority:	30 Days PRIORITY
POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Telephone No. 376-4650 Purchase Order/Charge Code 300106ES20 Ice Chest No. 605-335 Bill of Lading/Air Bill No. 7701 9691 6086 Offsite Property No. N/A
Sample No.	B2WJM7	Filter	N
		W	
		Date	6-4-14
		Time	1141
		No/Type Container	1x500-mL P
		Sample Analysis	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01 ✓
		Holding Time	48 Hours
		Preservative	Cool <=6C

Relinquished By J.R. Aguilar CHPRC	Print <i>J.R. Aguilar</i>	Sign <i>J.R. Aguilar</i>	Date/Time JUN 04 2014 1200	Received By L.D. Wall CHPRC	Print <i>L.D. Wall</i>	Sign <i>L.D. Wall</i>	Date/Time JUN 04 2014 1200	Matrix *
Relinquished By L.D. Wall CHPRC	Print <i>L.D. Wall</i>	Sign <i>L.D. Wall</i>	Date/Time JUN 04 2014 1400	Received By FED EX	Print <i>FED EX</i>	Sign <i>FED EX</i>	Date/Time JUN 04 2014 1400	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By FED EX	Print <i>FED EX</i>	Sign <i>FED EX</i>	Date/Time JUN 04 2014 1400	Received By Jill Clarke Jill Clarke	Print <i>Jill Clarke</i>	Sign <i>Jill Clarke</i>	Date/Time 6-5-14 0930	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By 6/30/2014	Print <i>6/30/2014</i>	Sign <i>6/30/2014</i>	Date/Time 6/30/2014	Received By Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Print <i>Disposal Method</i>	Sign <i>Disposal Method</i>	Date/Time Disposal Method	





Detailed Results

770196916086

Save tracking results

Ship (P/U) date :
Wed 6/04/2014 3:48 pm
RICHLAND, WA
US



Delivered
Signed for by: B.DANIELS
Actual delivery :
Thur 6/05/2014 9:14 am
EARTH CITY, MO
US

Delivery Options

This shipment's delivery has been customized by the recipient. Login or Signup for delivery options to edit shipment's delivery has been customized by the recipient. Signup for delivery options to edit or cancel the been customized by the recipient. Add this address to My Profile to edit or cancel the settings. Renew your delivery option.
Let us tell you when your shipment arrives. Sign up for delivery notificationsTravel History

Date/Time	Activity	Location
-		
6/05/2014 - Thursday		
9:14 am	Delivered	EARTH CITY, MO
7:04 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:59 am	At local FedEx facility	EARTH CITY, MO
5:25 am	At destination sort facility	BERKELEY, MO
4:34 am	Departed FedEx location	MEMPHIS, TN
12:44 am	Arrived at FedEx location	MEMPHIS, TN
-		
6/04/2014 - Wednesday		
5:07 pm	Left FedEx origin facility	PASCO, WA
3:48 pm	Picked up	PASCO, WA
3:32 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	770196916086
Weight	75 lbs
Delivered To	Shipping/Receiving
Total shipment weight	75 lbs / 34.02 kgs
Packaging	Your Packaging
Service	FedEx Priority Overnight
Dimensions	28x15x18 in.

Track your package or shipment with FedEx Tracking

Page 2 of 2

Total pieces 1
Shipper reference GWS-335
Special handling section Deliver Weekday

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Login Sample Receipt Checklist

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Client: CH2M Hill Plateau Remediation Company

Job Number: 160-6942-1

SDG Number: SL1460

Login Number: 6942

List Source: TestAmerica St. Louis

List Number: 1

Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
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	1.4
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.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

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Client: CH2M Hill Plateau Remediation Company

Job Number: 160-6942-1

SDG Number: SL1460

Login Number: 6957

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
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	1.4
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.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
 SDG: SL1460



Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
U	Analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was \leq 5X the blank concentration.

General Chemistry

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
B	Estimated result. Result is less than the RL, but greater than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460



Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	TAL SL

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

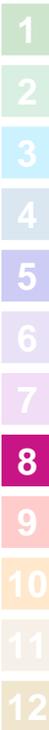
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-6942-1	B2WJN6	Water	06/03/14 11:26	06/04/14 09:45
160-6942-2	B2WJN5	Water	06/03/14 11:26	06/04/14 09:45
160-6942-3	B2WJN4	Water	06/03/14 11:26	06/04/14 09:45
160-6942-4	B2WJP4	Water	06/03/14 09:46	06/04/14 09:45
160-6942-5	B2WJP2	Water	06/03/14 09:46	06/04/14 09:45
160-6942-6	B2WJP3	Water	06/03/14 09:46	06/04/14 09:45
160-6957-1	B2WJM5	Water	06/04/14 11:41	06/05/14 09:30
160-6957-2	B2WJM6	Water	06/04/14 11:41	06/05/14 09:30
160-6957-3	B2WJM7	Water	06/04/14 11:41	06/05/14 09:30



Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: B2WJM6
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C10-C28)	2.8		0.50	0.017	mg/L		06/09/14 12:07	06/09/14 23:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		47 - 136				06/09/14 12:07	06/09/14 23:35	1

Method: 6010C - Metals (ICP)

Client Sample ID: B2WJN5
Date Collected: 06/03/14 11:26
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:17	06/26/14 18:43	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:17	06/26/14 18:43	1
Barium	23.7	B	50.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:43	1
Cadmium	0.34	U	5.0	0.34	ug/L		06/25/14 12:17	06/26/14 18:43	1
Calcium	20000		1000	54.2	ug/L		06/25/14 12:17	06/26/14 18:43	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:17	06/26/14 18:43	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:17	06/26/14 18:43	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:43	1
Iron	51.6	B	100	12.8	ug/L		06/25/14 12:17	06/26/14 18:43	1
Lead	0.90	B	10.0	0.60	ug/L		06/25/14 12:17	06/26/14 18:43	1
Magnesium	3900		1000	50.5	ug/L		06/25/14 12:17	06/26/14 18:43	1
Manganese	4.2	B	15.0	1.0	ug/L		06/25/14 12:17	06/26/14 18:43	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:17	06/26/14 18:43	1
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:17	06/26/14 18:43	1
Potassium	925	B	5000	456	ug/L		06/25/14 12:17	06/26/14 18:43	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:17	06/26/14 18:43	1
Sodium	3780		1000	105	ug/L		06/25/14 12:17	06/26/14 18:43	1
Strontium	96.6		5.0	0.24	ug/L		06/25/14 12:17	06/26/14 18:43	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:17	06/26/14 18:43	1
Zinc	9.5	B C	20.0	8.3	ug/L		06/25/14 12:17	06/26/14 18:43	1

Client Sample ID: B2WJP3
Date Collected: 06/03/14 09:46
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:17	06/26/14 19:06	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:17	06/26/14 19:06	1
Barium	22.7	B	50.0	2.1	ug/L		06/25/14 12:17	06/26/14 19:06	1
Cadmium	0.50	B	5.0	0.34	ug/L		06/25/14 12:17	06/26/14 19:06	1
Calcium	18200		1000	54.2	ug/L		06/25/14 12:17	06/26/14 19:06	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:17	06/26/14 19:06	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:17	06/26/14 19:06	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:17	06/26/14 19:06	1
Iron	20.0	B	100	12.8	ug/L		06/25/14 12:17	06/26/14 19:06	1
Lead	1.7	B	10.0	0.60	ug/L		06/25/14 12:17	06/26/14 19:06	1
Magnesium	3740		1000	50.5	ug/L		06/25/14 12:17	06/26/14 19:06	1
Manganese	1.0	U	15.0	1.0	ug/L		06/25/14 12:17	06/26/14 19:06	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:17	06/26/14 19:06	1

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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

Client Sample ID: B2WJP3
Date Collected: 06/03/14 09:46
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:17	06/26/14 19:06	1
Potassium	786	B	5000	456	ug/L		06/25/14 12:17	06/26/14 19:06	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:17	06/26/14 19:06	1
Sodium	5690		1000	105	ug/L		06/25/14 12:17	06/26/14 19:06	1
Strontium	84.1		5.0	0.24	ug/L		06/25/14 12:17	06/26/14 19:06	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:17	06/26/14 19:06	1
Zinc	10.7	B C	20.0	8.3	ug/L		06/25/14 12:17	06/26/14 19:06	1

Client Sample ID: B2WJM6
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:26	06/26/14 15:52	1
Arsenic	2.8	B	10.0	1.8	ug/L		06/25/14 12:26	06/26/14 15:52	1
Barium	88.1		50.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:52	1
Cadmium	0.34	U	5.0	0.34	ug/L		06/25/14 12:26	06/26/14 15:52	1
Calcium	74600		1000	54.2	ug/L		06/25/14 12:26	06/26/14 15:52	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:26	06/26/14 15:52	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:26	06/26/14 15:52	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:52	1
Iron	1610		100	12.8	ug/L		06/25/14 12:26	06/26/14 15:52	1
Lead	2.3	B	10.0	0.60	ug/L		06/25/14 12:26	06/26/14 15:52	1
Magnesium	11600		1000	50.5	ug/L		06/25/14 12:26	06/26/14 15:52	1
Manganese	1370		15.0	1.0	ug/L		06/25/14 12:26	06/26/14 15:52	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:26	06/26/14 15:52	1
Nickel	3.0	B	40.0	2.6	ug/L		06/25/14 12:26	06/26/14 15:52	1
Potassium	4360	B	5000	456	ug/L		06/25/14 12:26	06/26/14 15:52	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:26	06/26/14 15:52	1
Sodium	43100		1000	105	ug/L		06/25/14 12:26	06/26/14 15:52	1
Strontium	356		5.0	0.24	ug/L		06/25/14 12:26	06/26/14 15:52	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:26	06/26/14 15:52	1
Zinc	91.1		20.0	8.3	ug/L		06/25/14 12:26	06/26/14 15:52	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: B2WJN4
Date Collected: 06/03/14 11:26
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:17	06/26/14 18:58	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:17	06/26/14 18:58	1
Barium	19.6	B	50.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:58	1
Cadmium	0.40	B	5.0	0.34	ug/L		06/25/14 12:17	06/26/14 18:58	1
Calcium	20100		1000	54.2	ug/L		06/25/14 12:17	06/26/14 18:58	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:17	06/26/14 18:58	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:17	06/26/14 18:58	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:58	1
Iron	12.8	U	100	12.8	ug/L		06/25/14 12:17	06/26/14 18:58	1
Lead	1.0	B	10.0	0.60	ug/L		06/25/14 12:17	06/26/14 18:58	1
Magnesium	3850		1000	50.5	ug/L		06/25/14 12:17	06/26/14 18:58	1

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Method: 6010C - Metals (ICP) - Dissolved (Continued)

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Client Sample ID: B2WJN4
Date Collected: 06/03/14 11:26
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.0	U	15.0	1.0	ug/L		06/25/14 12:17	06/26/14 18:58	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:17	06/26/14 18:58	1
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:17	06/26/14 18:58	1
Potassium	923	B	5000	456	ug/L		06/25/14 12:17	06/26/14 18:58	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:17	06/26/14 18:58	1
Sodium	3490		1000	105	ug/L		06/25/14 12:17	06/26/14 18:58	1
Strontium	94.8		5.0	0.24	ug/L		06/25/14 12:17	06/26/14 18:58	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:17	06/26/14 18:58	1
Zinc	11.0	B C	20.0	8.3	ug/L		06/25/14 12:17	06/26/14 18:58	1

Client Sample ID: B2WJP2
Date Collected: 06/03/14 09:46
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:17	06/26/14 19:02	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:17	06/26/14 19:02	1
Barium	23.1	B	50.0	2.1	ug/L		06/25/14 12:17	06/26/14 19:02	1
Cadmium	0.34	U	5.0	0.34	ug/L		06/25/14 12:17	06/26/14 19:02	1
Calcium	18700		1000	54.2	ug/L		06/25/14 12:17	06/26/14 19:02	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:17	06/26/14 19:02	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:17	06/26/14 19:02	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:17	06/26/14 19:02	1
Iron	12.8	U	100	12.8	ug/L		06/25/14 12:17	06/26/14 19:02	1
Lead	0.90	B	10.0	0.60	ug/L		06/25/14 12:17	06/26/14 19:02	1
Magnesium	3840		1000	50.5	ug/L		06/25/14 12:17	06/26/14 19:02	1
Manganese	1.0	U	15.0	1.0	ug/L		06/25/14 12:17	06/26/14 19:02	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:17	06/26/14 19:02	1
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:17	06/26/14 19:02	1
Potassium	828	B	5000	456	ug/L		06/25/14 12:17	06/26/14 19:02	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:17	06/26/14 19:02	1
Sodium	5850		1000	105	ug/L		06/25/14 12:17	06/26/14 19:02	1
Strontium	86.6		5.0	0.24	ug/L		06/25/14 12:17	06/26/14 19:02	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:17	06/26/14 19:02	1
Zinc	9.7	B C	20.0	8.3	ug/L		06/25/14 12:17	06/26/14 19:02	1

Client Sample ID: B2WJM5
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:26	06/26/14 15:48	1
Arsenic	2.6	B	10.0	1.8	ug/L		06/25/14 12:26	06/26/14 15:48	1
Barium	87.9		50.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:48	1
Cadmium	0.50	B	5.0	0.34	ug/L		06/25/14 12:26	06/26/14 15:48	1
Calcium	73500		1000	54.2	ug/L		06/25/14 12:26	06/26/14 15:48	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:26	06/26/14 15:48	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:26	06/26/14 15:48	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:48	1
Iron	1290		100	12.8	ug/L		06/25/14 12:26	06/26/14 15:48	1
Lead	3.1	B	10.0	0.60	ug/L		06/25/14 12:26	06/26/14 15:48	1
Magnesium	11300		1000	50.5	ug/L		06/25/14 12:26	06/26/14 15:48	1

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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Method: 6010C - Metals (ICP) - Dissolved (Continued)

Client Sample ID: B2WJM5
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1340		15.0	1.0	ug/L		06/25/14 12:26	06/26/14 15:48	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:26	06/26/14 15:48	1
Nickel	3.5	B	40.0	2.6	ug/L		06/25/14 12:26	06/26/14 15:48	1
Potassium	4450	B	5000	456	ug/L		06/25/14 12:26	06/26/14 15:48	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:26	06/26/14 15:48	1
Sodium	44500		1000	105	ug/L		06/25/14 12:26	06/26/14 15:48	1
Strontium	360		5.0	0.24	ug/L		06/25/14 12:26	06/26/14 15:48	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:26	06/26/14 15:48	1
Zinc	40.4		20.0	8.3	ug/L		06/25/14 12:26	06/26/14 15:48	1

General Chemistry

Client Sample ID: B2WJN6
Date Collected: 06/03/14 11:26
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.0030	U	0.020	0.0030	mg/L			06/04/14 17:03	1
Fluoride	0.13		0.10	0.010	mg/L			06/04/14 17:03	1
Chloride	1.5		0.20	0.020	mg/L			06/04/14 17:03	1
Sulfate	9.6		0.50	0.050	mg/L			06/04/14 17:03	1
Phosphate	0.078	U N	0.50	0.078	mg/L			06/04/14 17:03	1

Client Sample ID: B2WJP4
Date Collected: 06/03/14 09:46
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.0030	U	0.020	0.0030	mg/L			06/04/14 19:58	1
Fluoride	0.14		0.10	0.010	mg/L			06/04/14 19:58	1
Chloride	1.5		0.20	0.020	mg/L			06/04/14 19:58	1
Sulfate	10.3		0.50	0.050	mg/L			06/04/14 19:58	1
Phosphate	0.13	B N	0.50	0.078	mg/L			06/04/14 19:58	1

Client Sample ID: B2WJM7
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.0040	U	0.020	0.0040	mg/L			06/06/14 03:20	1
Nitrite as N	0.0030	U	0.020	0.0030	mg/L			06/06/14 03:20	1
Fluoride	0.10	N	0.10	0.010	mg/L			06/06/14 03:20	1
Phosphate	0.18	B N	0.50	0.078	mg/L			06/06/14 03:20	1

General Chemistry - DL

Client Sample ID: B2WJN6
Date Collected: 06/03/14 11:26
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.6	D	0.20	0.040	mg/L			06/04/14 23:27	10

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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General Chemistry - DL

Client Sample ID: B2WJP4
Date Collected: 06/03/14 09:46
Date Received: 06/04/14 09:45

Lab Sample ID: 160-6942-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.2	D	0.20	0.040	mg/L			06/05/14 01:12	10

Client Sample ID: B2WJM7
Date Collected: 06/04/14 11:41
Date Received: 06/05/14 09:30

Lab Sample ID: 160-6957-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.9	D	1.0	0.10	mg/L			06/07/14 20:06	5
Sulfate	29.1	D	2.5	0.25	mg/L			06/07/14 20:06	5

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 160-125847/1-A
Matrix: Water
Analysis Batch: 125868

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 125847

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C10-C28)	0.017	U	0.50	0.017	mg/L		06/09/14 12:07	06/09/14 21:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		47 - 136				06/09/14 12:07	06/09/14 21:24	1

Lab Sample ID: LCS 160-125847/2-A
Matrix: Water
Analysis Batch: 125868

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 125847

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Petroleum Hydrocarbons (C10-C28)	2.50	1.80		mg/L		72	30 - 100
Surrogate	%Recovery	Qualifier	Limits				
<i>o</i> -Terphenyl	79		47 - 136				

Lab Sample ID: 160-6957-2 MS
Matrix: Water
Analysis Batch: 125868

Client Sample ID: B2WJM6
Prep Type: Total/NA
Prep Batch: 125847

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Petroleum Hydrocarbons (C10-C28)	2.8		2.53	4.60		mg/L		71	28 - 115
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	82		47 - 136						

Lab Sample ID: 160-6957-2 MSD
Matrix: Water
Analysis Batch: 125868

Client Sample ID: B2WJM6
Prep Type: Total/NA
Prep Batch: 125847

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Petroleum Hydrocarbons (C10-C28)	2.8		2.50	5.05	E	mg/L		90	28 - 115	9	20
Surrogate	%Recovery	Qualifier	Limits								
<i>o</i> -Terphenyl	92		47 - 136								

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-128611/1-A
Matrix: Water
Analysis Batch: 128782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 128611

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:17	06/26/14 18:28	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:17	06/26/14 18:28	1

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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

Lab Sample ID: MB 160-128611/1-A
Matrix: Water
Analysis Batch: 128782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 128611

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	2.1	U	50.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:28	1
Cadmium	0.34	U	5.0	0.34	ug/L		06/25/14 12:17	06/26/14 18:28	1
Calcium	54.2	U	1000	54.2	ug/L		06/25/14 12:17	06/26/14 18:28	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:17	06/26/14 18:28	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:17	06/26/14 18:28	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:17	06/26/14 18:28	1
Iron	12.8	U	100	12.8	ug/L		06/25/14 12:17	06/26/14 18:28	1
Lead	0.60	U	10.0	0.60	ug/L		06/25/14 12:17	06/26/14 18:28	1
Magnesium	50.5	U	1000	50.5	ug/L		06/25/14 12:17	06/26/14 18:28	1
Manganese	1.0	U	15.0	1.0	ug/L		06/25/14 12:17	06/26/14 18:28	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:17	06/26/14 18:28	1
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:17	06/26/14 18:28	1
Potassium	456	U	5000	456	ug/L		06/25/14 12:17	06/26/14 18:28	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:17	06/26/14 18:28	1
Sodium	105	U	1000	105	ug/L		06/25/14 12:17	06/26/14 18:28	1
Strontium	0.24	U	5.0	0.24	ug/L		06/25/14 12:17	06/26/14 18:28	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:17	06/26/14 18:28	1
Zinc	10.40	B	20.0	8.3	ug/L		06/25/14 12:17	06/26/14 18:28	1

Lab Sample ID: LCS 160-128611/2-A
Matrix: Water
Analysis Batch: 128782

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128611

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Antimony	500	492.8		ug/L		99	80 - 120
Arsenic	1000	972.6		ug/L		97	80 - 120
Barium	1000	977.8		ug/L		98	80 - 120
Cadmium	1000	979.2		ug/L		98	80 - 120
Calcium	10000	10180		ug/L		102	80 - 120
Chromium	1000	1019		ug/L		102	80 - 120
Cobalt	1000	1012		ug/L		101	80 - 120
Copper	1000	1005		ug/L		101	80 - 120
Iron	10000	9943		ug/L		99	80 - 120
Lead	1000	1025		ug/L		103	80 - 120
Magnesium	10000	9360		ug/L		94	80 - 120
Manganese	1000	992.5		ug/L		99	80 - 120
Molybdenum	500	494.0		ug/L		99	80 - 120
Nickel	1000	1032		ug/L		103	80 - 120
Potassium	10000	9643		ug/L		96	80 - 120
Silver	200	202.4		ug/L		101	80 - 120
Sodium	10000	9911		ug/L		99	80 - 120
Strontium	1000	1019		ug/L		102	80 - 120
Vanadium	1000	993.3		ug/L		99	80 - 120
Zinc	1000	1009		ug/L		101	80 - 120

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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

Lab Sample ID: 160-6942-2 MS

Client Sample ID: B2WJN5

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 128782

Prep Batch: 128611

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	3.7	U	500	490.5		ug/L		98	75 - 125
Arsenic	1.8	U	1000	968.8		ug/L		97	75 - 125
Barium	23.7	B	1000	987.6		ug/L		96	75 - 125
Cadmium	0.34	U	1000	972.2		ug/L		97	75 - 125
Calcium	20000		10000	29530		ug/L		95	75 - 125
Chromium	3.4	U	1000	1012		ug/L		101	75 - 125
Cobalt	2.7	U	1000	1004		ug/L		100	75 - 125
Copper	2.1	U	1000	993.8		ug/L		99	75 - 125
Iron	51.6	B	10000	9900		ug/L		98	75 - 125
Lead	0.90	B	1000	1014		ug/L		101	75 - 125
Magnesium	3900		10000	13170		ug/L		93	75 - 125
Manganese	4.2	B	1000	982.1		ug/L		98	75 - 125
Molybdenum	1.9	U	500	493.6		ug/L		99	75 - 125
Nickel	2.6	U	1000	1016		ug/L		102	75 - 125
Potassium	925	B	10000	10340		ug/L		94	75 - 125
Silver	0.99	U	200	202.0		ug/L		101	75 - 125
Sodium	3780		10000	13330		ug/L		96	75 - 125
Strontium	96.6		1000	1095		ug/L		100	75 - 125
Vanadium	4.4	U	1000	990.2		ug/L		99	75 - 125
Zinc	9.5	B C	1000	1004		ug/L		99	75 - 125

Lab Sample ID: 160-6942-2 MSD

Client Sample ID: B2WJN5

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 128782

Prep Batch: 128611

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	3.7	U	500	506.6		ug/L		101	75 - 125	3	20
Arsenic	1.8	U	1000	1004		ug/L		100	75 - 125	4	20
Barium	23.7	B	1000	1025		ug/L		100	75 - 125	4	20
Cadmium	0.34	U	1000	1006		ug/L		101	75 - 125	3	20
Calcium	20000		10000	30630		ug/L		106	75 - 125	4	20
Chromium	3.4	U	1000	1045		ug/L		105	75 - 125	3	20
Cobalt	2.7	U	1000	1037		ug/L		104	75 - 125	3	20
Copper	2.1	U	1000	1028		ug/L		103	75 - 125	3	20
Iron	51.6	B	10000	10250		ug/L		102	75 - 125	3	20
Lead	0.90	B	1000	1048		ug/L		105	75 - 125	3	20
Magnesium	3900		10000	13660		ug/L		98	75 - 125	4	20
Manganese	4.2	B	1000	1015		ug/L		101	75 - 125	3	20
Molybdenum	1.9	U	500	510.6		ug/L		102	75 - 125	3	20
Nickel	2.6	U	1000	1053		ug/L		105	75 - 125	4	20
Potassium	925	B	10000	10740		ug/L		98	75 - 125	4	20
Silver	0.99	U	200	208.8		ug/L		104	75 - 125	3	20
Sodium	3780		10000	13860		ug/L		101	75 - 125	4	20
Strontium	96.6		1000	1133		ug/L		104	75 - 125	3	20
Vanadium	4.4	U	1000	1020		ug/L		102	75 - 125	3	20
Zinc	9.5	B C	1000	1039		ug/L		103	75 - 125	3	20

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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

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Lab Sample ID: MB 160-128616/1-A

Matrix: Water

Analysis Batch: 128782

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 128616

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		06/25/14 12:26	06/26/14 15:40	1
Arsenic	1.8	U	10.0	1.8	ug/L		06/25/14 12:26	06/26/14 15:40	1
Barium	2.1	U	50.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:40	1
Cadmium	0.34	U	5.0	0.34	ug/L		06/25/14 12:26	06/26/14 15:40	1
Calcium	54.2	U	1000	54.2	ug/L		06/25/14 12:26	06/26/14 15:40	1
Chromium	3.4	U	10.0	3.4	ug/L		06/25/14 12:26	06/26/14 15:40	1
Cobalt	2.7	U	50.0	2.7	ug/L		06/25/14 12:26	06/26/14 15:40	1
Copper	2.1	U	25.0	2.1	ug/L		06/25/14 12:26	06/26/14 15:40	1
Iron	12.8	U	100	12.8	ug/L		06/25/14 12:26	06/26/14 15:40	1
Lead	0.60	U	10.0	0.60	ug/L		06/25/14 12:26	06/26/14 15:40	1
Magnesium	50.5	U	1000	50.5	ug/L		06/25/14 12:26	06/26/14 15:40	1
Manganese	1.0	U	15.0	1.0	ug/L		06/25/14 12:26	06/26/14 15:40	1
Molybdenum	1.9	U	40.0	1.9	ug/L		06/25/14 12:26	06/26/14 15:40	1
Nickel	2.6	U	40.0	2.6	ug/L		06/25/14 12:26	06/26/14 15:40	1
Potassium	456	U	5000	456	ug/L		06/25/14 12:26	06/26/14 15:40	1
Silver	0.99	U	10.0	0.99	ug/L		06/25/14 12:26	06/26/14 15:40	1
Sodium	105	U	1000	105	ug/L		06/25/14 12:26	06/26/14 15:40	1
Strontium	0.24	U	5.0	0.24	ug/L		06/25/14 12:26	06/26/14 15:40	1
Vanadium	4.4	U	50.0	4.4	ug/L		06/25/14 12:26	06/26/14 15:40	1
Zinc	8.3	U	20.0	8.3	ug/L		06/25/14 12:26	06/26/14 15:40	1

Lab Sample ID: LCS 160-128616/2-A

Matrix: Water

Analysis Batch: 128782

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 128616

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	500	507.8		ug/L		102	80 - 120
Arsenic	1000	992.9		ug/L		99	80 - 120
Barium	1000	989.7		ug/L		99	80 - 120
Cadmium	1000	1001		ug/L		100	80 - 120
Calcium	10000	10360		ug/L		104	80 - 120
Chromium	1000	1030		ug/L		103	80 - 120
Cobalt	1000	1043		ug/L		104	80 - 120
Copper	1000	1032		ug/L		103	80 - 120
Iron	10000	10050		ug/L		101	80 - 120
Lead	1000	1043		ug/L		104	80 - 120
Magnesium	10000	9389		ug/L		94	80 - 120
Manganese	1000	1001		ug/L		100	80 - 120
Molybdenum	500	508.3		ug/L		102	80 - 120
Nickel	1000	1049		ug/L		105	80 - 120
Potassium	10000	9771		ug/L		98	80 - 120
Silver	200	205.8		ug/L		103	80 - 120
Sodium	10000	10080		ug/L		101	80 - 120
Strontium	1000	1027		ug/L		103	80 - 120
Vanadium	1000	1001		ug/L		100	80 - 120
Zinc	1000	1032		ug/L		103	80 - 120

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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

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Lab Sample ID: 160-7059-B-3-B MS

Matrix: Water

Analysis Batch: 128782

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 128616

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier		Added					Result	Qualifier
Antimony	3.7	U	500	502.6		ug/L		101	75 - 125	
Arsenic	2.6	B	1000	999.2		ug/L		100	75 - 125	
Barium	28.3	B	1000	1039		ug/L		101	75 - 125	
Cadmium	0.34	U	1000	994.8		ug/L		99	75 - 125	
Calcium	41600		10000	51460		ug/L		99	75 - 125	
Chromium	3.4	U	1000	1039		ug/L		104	75 - 125	
Cobalt	2.7	U	1000	1020		ug/L		102	75 - 125	
Copper	2.1	U	1000	1022		ug/L		102	75 - 125	
Iron	12.8	U	10000	10130		ug/L		101	75 - 125	
Lead	3.4	B	1000	1027		ug/L		102	75 - 125	
Magnesium	10200		10000	19650		ug/L		95	75 - 125	
Manganese	1.0	U	1000	1005		ug/L		101	75 - 125	
Molybdenum	4.8	B	500	509.9		ug/L		101	75 - 125	
Nickel	3.7	B	1000	1028		ug/L		102	75 - 125	
Potassium	4340	B	10000	14470		ug/L		101	75 - 125	
Silver	0.99	U	200	209.3		ug/L		105	75 - 125	
Sodium	14500		10000	25280		ug/L		108	75 - 125	
Strontium	248		1000	1296		ug/L		105	75 - 125	
Vanadium	4.4	U	1000	1018		ug/L		102	75 - 125	
Zinc	23.6		1000	1043		ug/L		102	75 - 125	

Lab Sample ID: 160-7059-B-3-C MSD

Matrix: Water

Analysis Batch: 128782

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 128616

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Added					Result	Qualifier	Limits	RPD
Antimony	3.7	U	500	523.8		ug/L		105	75 - 125	4	20	
Arsenic	2.6	B	1000	1037		ug/L		103	75 - 125	4	20	
Barium	28.3	B	1000	1057		ug/L		103	75 - 125	2	20	
Cadmium	0.34	U	1000	1034		ug/L		103	75 - 125	4	20	
Calcium	41600		10000	53290		ug/L		117	75 - 125	3	20	
Chromium	3.4	U	1000	1073		ug/L		107	75 - 125	3	20	
Cobalt	2.7	U	1000	1062		ug/L		106	75 - 125	4	20	
Copper	2.1	U	1000	1055		ug/L		106	75 - 125	3	20	
Iron	12.8	U	10000	10450		ug/L		105	75 - 125	3	20	
Lead	3.4	B	1000	1068		ug/L		106	75 - 125	4	20	
Magnesium	10200		10000	20280		ug/L		101	75 - 125	3	20	
Manganese	1.0	U	1000	1034		ug/L		103	75 - 125	3	20	
Molybdenum	4.8	B	500	528.5		ug/L		105	75 - 125	4	20	
Nickel	3.7	B	1000	1069		ug/L		107	75 - 125	4	20	
Potassium	4340	B	10000	14730		ug/L		104	75 - 125	2	20	
Silver	0.99	U	200	215.3		ug/L		108	75 - 125	3	20	
Sodium	14500		10000	25580		ug/L		111	75 - 125	1	20	
Strontium	248		1000	1316		ug/L		107	75 - 125	2	20	
Vanadium	4.4	U	1000	1045		ug/L		105	75 - 125	3	20	
Zinc	23.6		1000	1083		ug/L		106	75 - 125	4	20	

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Method: 300.0 - Anions, Ion Chromatography

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Lab Sample ID: MB 160-125501/2
Matrix: Water
Analysis Batch: 125501

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	0.0040	U	0.020	0.0040	mg/L			06/04/14 12:56	1
Nitrite as N	0.0030	U	0.020	0.0030	mg/L			06/04/14 12:56	1
Fluoride	0.010	U	0.10	0.010	mg/L			06/04/14 12:56	1
Chloride	0.020	U	0.20	0.020	mg/L			06/04/14 12:56	1
Sulfate	0.050	U	0.50	0.050	mg/L			06/04/14 12:56	1
Phosphate	0.078	U	0.50	0.078	mg/L			06/04/14 12:56	1

Lab Sample ID: LCS 160-125501/3
Matrix: Water
Analysis Batch: 125501

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.160	0.169		mg/L		106	90 - 110
Fluoride	1.00	1.02		mg/L		102	90 - 110
Chloride	2.00	2.00		mg/L		100	90 - 110
Sulfate	8.00	8.07		mg/L		101	90 - 110
Phosphate	8.00	8.63		mg/L		108	90 - 110

Lab Sample ID: 160-6942-1 MS
Matrix: Water
Analysis Batch: 125501

Client Sample ID: B2WJN6
Prep Type: Total/NA

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Nitrite as N	0.0030	U	0.100	0.0971		mg/L		97	90 - 110
Fluoride	0.13		2.00	2.28		mg/L		108	90 - 110
Chloride	1.5		2.00	3.54		mg/L		103	90 - 110
Sulfate	9.6		4.00	13.62		mg/L		100	90 - 110
Phosphate	0.078	U N	4.00	8.28	N	mg/L		207	90 - 110

Lab Sample ID: 160-6942-1 DU
Matrix: Water
Analysis Batch: 125501

Client Sample ID: B2WJN6
Prep Type: Total/NA

Analyte	Sample Sample		DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
	Result	Qualifier						
Nitrite as N	0.0030	U	0.0030	U	mg/L		NC	20
Fluoride	0.13		0.120		mg/L		6	20
Chloride	1.5		1.47		mg/L		0.9	20
Sulfate	9.6		9.65		mg/L		0.2	20
Phosphate	0.078	U N	0.078	U	mg/L		NC	20

Lab Sample ID: MB 160-125745/9
Matrix: Water
Analysis Batch: 125745

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	0.0040	U	0.020	0.0040	mg/L			06/05/14 21:41	1
Nitrite as N	0.0030	U	0.020	0.0030	mg/L			06/05/14 21:41	1
Fluoride	0.010	U	0.10	0.010	mg/L			06/05/14 21:41	1

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 160-125745/9
Matrix: Water
Analysis Batch: 125745

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	0.020	U	0.20	0.020	mg/L			06/05/14 21:41	1
Sulfate	0.050	U	0.50	0.050	mg/L			06/05/14 21:41	1
Phosphate	0.078	U	0.50	0.078	mg/L			06/05/14 21:41	1

Lab Sample ID: LCS 160-125745/10
Matrix: Water
Analysis Batch: 125745

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.160	0.155		mg/L		97	90 - 110
Fluoride	1.00	0.948		mg/L		95	90 - 110
Chloride	2.00	1.94		mg/L		97	90 - 110
Sulfate	8.00	7.76		mg/L		97	90 - 110
Phosphate	8.00	8.07		mg/L		101	90 - 110

Lab Sample ID: 160-6954-A-9 MS
Matrix: Water
Analysis Batch: 125745

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.0030	U	0.100	0.0957		mg/L		96	90 - 110
Fluoride	0.061	B	2.00	2.26		mg/L		110	90 - 110
Chloride	1.3		2.00	3.36		mg/L		104	90 - 110
Sulfate	9.0		4.00	12.86		mg/L		97	90 - 110
Phosphate	0.36	B N M	4.00	9.17	N	mg/L		220	90 - 110

Lab Sample ID: 160-6954-A-18 MS
Matrix: Water
Analysis Batch: 125745

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.048	B N	2.00	2.30	N	mg/L		113	90 - 110
Chloride	4.1		2.00	6.32		mg/L		110	90 - 110
Phosphate	0.078	U N	4.00	10.04	N	mg/L		251	90 - 110

Lab Sample ID: 160-6954-A-9 DU
Matrix: Water
Analysis Batch: 125745

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	
							RPD	Limit
Nitrate as N	0.22		0.222		mg/L		3	20
Nitrite as N	0.0030	U	0.0030	U	mg/L		NC	20
Fluoride	0.061	B	0.0541	B	mg/L		12	20
Chloride	1.3		1.28		mg/L		0.8	20
Sulfate	9.0		8.87		mg/L		1	20
Phosphate	0.36	B N M	0.261	B	mg/L		32	20

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

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Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 160-126343/9
Matrix: Water
Analysis Batch: 126343

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	0.0040	U	0.020	0.0040	mg/L			06/07/14 16:22	1
Chloride	0.020	U	0.20	0.020	mg/L			06/07/14 16:22	1
Sulfate	0.050	U	0.50	0.050	mg/L			06/07/14 16:22	1

Lab Sample ID: LCS 160-126343/10
Matrix: Water
Analysis Batch: 126343

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

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
Nitrate as N	0.400	0.391		mg/L		98	90 - 110
Chloride	2.00	1.97		mg/L		98	90 - 110
Sulfate	8.00	7.46		mg/L		93	90 - 110

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 160-6942-1 MS
Matrix: Water
Analysis Batch: 125501

Client Sample ID: B2WJN6
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Nitrate as N - DL	1.6	D	4.00	5.86	D	mg/L		108	90 - 110

Lab Sample ID: 160-6942-1 DU
Matrix: Water
Analysis Batch: 125501

Client Sample ID: B2WJN6
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Nitrate as N - DL	1.6	D	1.54	D	mg/L		2	20

Lab Sample ID: 160-6959-A-4 MS ^10
Matrix: Water
Analysis Batch: 126343

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Nitrate as N - DL	3.2	D	4.00	7.42	D	mg/L		106	90 - 110
Chloride - DL	14.7	D	20.0	36.54	D	mg/L		109	90 - 110
Sulfate - DL	76.5	D	40.0	117.4	D	mg/L		102	90 - 110

Lab Sample ID: 160-6993-A-4 MS ^20
Matrix: Water
Analysis Batch: 126343

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Nitrate as N - DL	10.8	D	8.00	18.88	D	mg/L		101	90 - 110
Sulfate - DL	61.3	D	80.0	136.0	D	mg/L		93	90 - 110

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460

Method: 300.0 - Anions, Ion Chromatography - DL (Continued)

Lab Sample ID: 160-6993-A-4 DU ^20

Matrix: Water

Analysis Batch: 126343

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Nitrate as N - DL	10.8	D	10.87	D	mg/L		0.6	20	
Sulfate - DL	61.3	D	61.36	D	mg/L		0.08	20	

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460



GC Semi VOA

Prep Batch: 125847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6957-2	B2WJM6	Total/NA	Water	3510C	
160-6957-2 MS	B2WJM6	Total/NA	Water	3510C	
160-6957-2 MSD	B2WJM6	Total/NA	Water	3510C	
LCS 160-125847/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 160-125847/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 125868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6957-2	B2WJM6	Total/NA	Water	8015B	125847
160-6957-2 MS	B2WJM6	Total/NA	Water	8015B	125847
160-6957-2 MSD	B2WJM6	Total/NA	Water	8015B	125847
LCS 160-125847/2-A	Lab Control Sample	Total/NA	Water	8015B	125847
MB 160-125847/1-A	Method Blank	Total/NA	Water	8015B	125847

Metals

Prep Batch: 128611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6942-2	B2WJN5	Total/NA	Water	3010A	
160-6942-2 MS	B2WJN5	Total/NA	Water	3010A	
160-6942-2 MSD	B2WJN5	Total/NA	Water	3010A	
160-6942-3	B2WJN4	Dissolved	Water	3010A	
160-6942-5	B2WJP2	Dissolved	Water	3010A	
160-6942-6	B2WJP3	Total/NA	Water	3010A	
LCS 160-128611/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-128611/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 128616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6957-1	B2WJM5	Dissolved	Water	3010A	
160-6957-2	B2WJM6	Total/NA	Water	3010A	
160-7059-B-3-B MS	Matrix Spike	Total/NA	Water	3010A	
160-7059-B-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
LCS 160-128616/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-128616/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 128782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6942-2	B2WJN5	Total/NA	Water	6010C	128611
160-6942-2 MS	B2WJN5	Total/NA	Water	6010C	128611
160-6942-2 MSD	B2WJN5	Total/NA	Water	6010C	128611
160-6942-3	B2WJN4	Dissolved	Water	6010C	128611
160-6942-5	B2WJP2	Dissolved	Water	6010C	128611
160-6942-6	B2WJP3	Total/NA	Water	6010C	128611
160-6957-1	B2WJM5	Dissolved	Water	6010C	128616
160-6957-2	B2WJM6	Total/NA	Water	6010C	128616
160-7059-B-3-B MS	Matrix Spike	Total/NA	Water	6010C	128616
160-7059-B-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	128616
LCS 160-128611/2-A	Lab Control Sample	Total/NA	Water	6010C	128611
LCS 160-128616/2-A	Lab Control Sample	Total/NA	Water	6010C	128616

TestAmerica St. Louis

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
 SDG: SL1460

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Metals (Continued)

Analysis Batch: 128782 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-128611/1-A	Method Blank	Total/NA	Water	6010C	128611
MB 160-128616/1-A	Method Blank	Total/NA	Water	6010C	128616

General Chemistry

Analysis Batch: 125501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6942-1	B2WJN6	Total/NA	Water	300.0	
160-6942-1 - DL	B2WJN6	Total/NA	Water	300.0	
160-6942-1 DU	B2WJN6	Total/NA	Water	300.0	
160-6942-1 DU - DL	B2WJN6	Total/NA	Water	300.0	
160-6942-1 MS	B2WJN6	Total/NA	Water	300.0	
160-6942-1 MS - DL	B2WJN6	Total/NA	Water	300.0	
160-6942-4	B2WJP4	Total/NA	Water	300.0	
160-6942-4 - DL	B2WJP4	Total/NA	Water	300.0	
LCS 160-125501/3	Lab Control Sample	Total/NA	Water	300.0	
MB 160-125501/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 125745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6954-A-9 DU	Duplicate	Total/NA	Water	300.0	
160-6954-A-9 MS	Matrix Spike	Total/NA	Water	300.0	
160-6954-A-18 MS	Matrix Spike	Total/NA	Water	300.0	
160-6957-3	B2WJM7	Total/NA	Water	300.0	
LCS 160-125745/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-125745/9	Method Blank	Total/NA	Water	300.0	

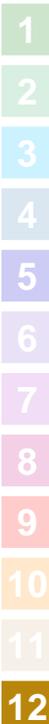
Analysis Batch: 126343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-6957-3 - DL	B2WJM7	Total/NA	Water	300.0	
160-6959-A-4 MS ^10 - DL	Matrix Spike	Total/NA	Water	300.0	
160-6993-A-4 DU ^20 - DL	Duplicate	Total/NA	Water	300.0	
160-6993-A-4 MS ^20 - DL	Matrix Spike	Total/NA	Water	300.0	
LCS 160-126343/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-126343/9	Method Blank	Total/NA	Water	300.0	

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-038

TestAmerica Job ID: 160-6942-1
SDG: SL1460



Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTPH1 (47-136)	
160-6957-2	B2WJM6	81	
160-6957-2 MS	B2WJM6	82	
160-6957-2 MSD	B2WJM6	92	
LCS 160-125847/2-A	Lab Control Sample	79	
MB 160-125847/1-A	Method Blank	82	

Surrogate Legend

OTPH = o-Terphenyl