

Analytical Data Package Prepared For
CH2M Hill Plateau Remediation

Radiochemical Analysis By
TestAmerica

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains _____ Pages

Report No.: 52474

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W06463	S12-012	B2JJW0	J2G120458-1	MVKAP1AA	9MVKAP10	2194136



Certificate of Analysis

CH2M Hill Plateau Remediation Company
 P.O. Box 1600
 Mail Stop – R3-60
 Richland, WA 99352

TestAmerica Laboratories, Inc.

July 27, 2012

Attention: Scot Fitzgerald

SAF Number	:	S12-012
Date SDG Closed	:	July 12, 2012
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W06463
Data Deliverable	:	31-Day / Summary

CASE NARRATIVE

I. Introduction

On July 12, 2012 one water sample was received at TestAmerica (TARL). Upon receipt, the sample was assigned the following laboratory ID numbers to correspond with the CH2M specific IDs:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>DATE OF RECEIPT</u>	<u>MATRIX</u>
B2JJW0	MVKAP	07/12/12	WATER

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Chemical Analysis
 Hexavalent Chromium by EPA method 7196A

CH2M Hill Plateau Remediation Company
July 27, 2012

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

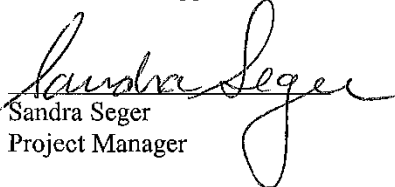
Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B2JJW0), sample matrix spike (B2JJW0) and matrix spike duplicate (B2JJW0) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:


Sandra Seger
Project Manager



TestAmerica Inc.
Hexavalent Chromium - Water

AMENDED SKS

Analyst:	HR
Start Date:	7/12/2012
Start Time:	17:20
End Date:	7/12/2012
End Time:	18:15
Analyst Signature:	<i>[Signature]</i>
Date:	08/29/12
$b^2 = 3.5194$	
$2a = -0.0182$	

Calibration Curve Information		SOP Information	
Amount (mL)	Conc. (mg/L)	RL-WC-003	BATCH # 2164105
Blank	0.000	Revision 3	SDG # W06452
Std. 1	0.100		Matrix Water
Std. 2	0.250		
Std. 3	0.375		
Std. 4	0.750		
Std. 5	1.000		
Standard Volume (mL):	100.000		
Date of Curve:	7/12/2012		

ICV Information: Cr-12-00233
 LCS Information: Cr-12-00233
 Matrix Spike Information: Cr-12-00233

Dilution ID #	Prep Date:	Concentration (mg/L)	Expiration Date:	Pipettor(s)	Volume Used (mL)	Expected Value
	07/12/12	50	07/13/12	190	1.000	0.50000
	07/12/12	50	07/13/12	190	1.000	0.50000
	07/12/12	50	07/13/12	190	1.000	0.50000
	07/12/12	50	07/13/12	190	1.000	0.50000

Expected values are only amounts added in mg and not final concentrations

Sample ID	Client ID	Type	Sample Volume (mL)	Sample ABS.	Color Blank ABS.	Corrected ABS.	Dilution Factor	Curve Conc. (mg/L)	Final Reported Conc. (mg/L)	% Rec. / RPD
n/a	n/a	ICV	100.000	0.960	0.000	0.960	1	0.5103	0.5103	102.05%
n/a	n/a	ICB	100.000	0.001	0.000	0.001	1	-0.0022	<MDL	
n/a	n/a	CCV	100.000	0.949	0.000	0.949	1	0.5044	0.504	100.88%
n/a	n/a	CCB	100.000	0.000	0.000	0.000	1	<MDL	<MDL	
MVKAX1AA	n/a	BLK	100.000	0.002	0.000	0.002	1	-0.0017	<MDL	
MVKAX1AC	n/a	LCS	100.000	0.951	0.000	0.951	1	0.5055	0.505	101.09%
MVKAP1AA	B2JJW0	Sample	100.000	0.107	0.000	0.107	1	0.0543	0.054	0.269
MVKAP1AC-S	B2JJW0-MS	MS	100.000	0.610	0.000	0.610	1	0.3229	0.328	102.07%
MVKAP1AD-D	B2JJW0-MSD	MSD	100.000	0.598	0.000	0.598	1	0.3165	0.347	99.64%
MVKAP1AE-X	B2JJW0-DUP	Duplicate	100.000	0.108	0.000	0.108	1	0.0549	0.055	0.98%
			100.000				1		0.263	
			100.000				1			
			100.000				1			
n/a	n/a	CCV	100.000	0.946	0.000	0.946	1	0.5028	0.503	100.55%
n/a	n/a	CCB	100.000	0.000	0.000	0.000	1	<MDL	<MDL	

SKS
9/6/12

3e
8/29/12
8/29/2012

TestAmerica Inc.

Form: GC-223, 8/12, Rev. 3

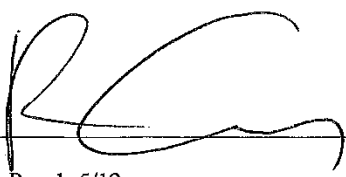


**Richland Laboratory
Data Review Check List
Hexavalent Chromium**

AMENDED SKS

Batch Number(s):	2194136	Lab Sample Numbers or SDG:	W06463		
Method/Test/Parameter: Cr+6 <input checked="" type="checkbox"/> RL-WC-003(Aqueous) <input type="checkbox"/> RL-WC-004(Solid)					
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)	
A. Initial Calibration					
1. Performed at required frequency with required number of levels?	✓			✓	
2. Correlation coefficient greater than 0.97?	✓			✓	
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓	
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓	
B. Continuing Calibration					
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓	
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓	
C. Sample Analysis					
1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓	
2. Were all sample holding times met?	✓			✓	
D. QC Samples					
1. All results for the preparation blank below limits?	✓			✓	
2. LCS percent recovery within 85-115%	✓			✓	
3. PbCrO ₄ percent recovery within 75-125%?			✓	✓	
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			✓	
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓	
6. On MS failure, PDMS within 85-115%?			✓	✓	
E. Other					
1. Are all nonconformances included and noted?			✓	✓	
2. Is the correct date and time of analysis shown?	✓			✓	
3. Did the analyst sign and date the front page of the analytical run?	✓			✓	
4. Correct methodology used?	✓			✓	
5. Transcriptions checked?	✓			✓	
6. Calculations checked at minimum frequency?	✓			✓	
7. Units checked?	✓			✓	

Comments on any "No" response or list NCM number:

Analyst 

Date 8/29/12 2nd Review  Date 8/29/12

CH2M Hill Plateau Remediation Company		C.O.C.# S12-012-208	
Chain of Custody/Sample Analysis Request		Page 1 of 1	
Collector	AL MCINTYRE / CHPRC	Contact/Requester	Karen Waters-Husted
SAF No.	S12-012	Sampling Origin	Hanford Site
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49 / 45
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE
Protocol	SURV	Priority:	31 Days
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FY11 and FY12 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.	
Sample No.	B2JJW0	Filter	N
Date	JUL 12 2012	Time	2:35
No/Type Container	1x500-mL aG		
Sample Analysis	7196_CR6: Hexavalent Chromium (1) mVKA9		
Holding Time	24 Hours		
Preservative	Cool-4C		

Jab120458
 Rec: 7-12-12
 WDL0460



Relinquished By	AL MCINTYRE / CHPRC	Print	AL	Sign	Print TAKE	Date/Time	JUL 12 2012 1440
Relinquished By		Received By	Carly	Sign	Carly on 1/6/12	Date/Time	
Relinquished By		Received By		Sign		Date/Time	
Relinquished By		Received By		Sign		Date/Time	
FINAL SAMPLE DISPOSITION		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	=	Wine
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other



Sample Check-in List

Date/Time Received: 7-12-12 / 1440 Container GM Screen Result: (Airlock) 1.07 Initials [B]]
Sample GM Screen Result (Sample Receiving) 1.06 Initials [B]]

Client: Plw SDG #: W06463 NA [] SAF #: S12-012 NA []

Lot Number: S26120458

Chain of Custody # S12-012-208

Shipping Container ID: hand deliv. NA [B] Air Bill Number: NA [B]

Samples received inside shipping container/cooler/box Yes [B]] Continue with 1 through 4. Initial appropriate response.
No []] Go to 5, add comment to #16.

- 1. Custody Seals on shipping container intact? Yes [] No [] No Custody Seal [B]]
- 2. Custody Seals dated and signed? Yes [] No [] No Custody Seal [B]]
- 3. Cooler temperature: 6.1 °C Free NA []
- 4. Vermiculite/packing materials is NA [B]] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes [B]] No []
- 6. Number of samples received (Each sample may contain multiple bottles): 1
- 7. Containers received: 1 x 500 mL AG

8. Sample holding times exceeded? NA [] Yes [] No [B]]

9. Samples have:
tape hazard labels
[B] custody seals [B] appropriate sample labels

10. Matrix:
A (FLT, Wipe, Solid, Soil) [B] I (Water)
S (Air, Niosh 7400) T (Biological, Ni-63)

11. Samples:
[B] are in good condition are leaking
are broken have air bubbles (Only for samples requiring no head space)
Other

12. Sample pH appropriate for analysis requested Yes [B]] No [] NA [B] T SKS 7-13-12
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
RPL ID # of preservative used : NA

13. Were any anomalies identified in sample receipt? Yes [] No [B]]

14. Description of anomalies (include sample numbers): NA [B]

7/12/2012 4:15:07 PM **Sample Preparation/Analysis** Balance Id: _____
 394868, CH2M Hill Plateau Remediation Company 88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION Pipet #: _____
 Pacific Northwest National Lab EA Chromium, Hexavalent (7196A) Sep1 DT/Tm Tech: _____
 AnalyteDueDate: 08/13/2012 5I CLIENT: HANFORD Sep2 DT/Tm Tech: _____

Batch: 2194136 WATER mg/L PM, Quote: SS, 57671
 SEQ Batch, Test: None

Work Order, Lot, Sample Date Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, InfrDate	Comments:
1 MVKAP-1-AA								
J2G120458-1-SAMP								
07/12/2012 12:35								
AmiRec: 1X500MLAG #Containers: 1 Alpha: Beta:								
2 MVKAP-1-AC-S								
J2G120458-1-MS								
07/12/2012 12:35								
AmiRec: 1X500MLAG #Containers: 1 Alpha: Beta:								
3 MVKAP-1-AD-D								
J2G120458-1-MSD								
07/12/2012 12:35								
AmiRec: 1X500MLAG #Containers: 1 Alpha: Beta:								
4 MVKAP-1-AE-X								
J2G120458-1-DUP								
07/12/2012 12:35								
AmiRec: 1X500MLAG #Containers: 1 Alpha: Beta:								
5 MVKAX-1-AA-B								
J2G120000-136-BLK								
07/12/2012 16:15 pd								
AmiRec: #Containers: 1 Alpha: Beta:								
6 MVKAX-1-AC-C								
J2G120000-136-LCS								
07/12/2012 16:15 pd								
AmiRec: #Containers: 1 Alpha: Beta:								

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ISV - Insufficient Volume for Analysis
 WO Cnt: 6 ICOC v4.8.49

7/12/2012 4:15:08 PM **Sample Preparation/Analysis** Balance Id: _____ Pipet #: _____

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
 EA Chromium, Hexavalent (7196A)
 51 CLIENT: HANFORD

AnalyteDueDate: 08/13/2012
 Batch: 2194136
 SEQ Batch, Test: None

mg/L

Sep1 DT/Tm Tech: _____
 Sep2 DT/Tm Tech: _____
 Prep Tech: _____

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
Comments:								
All Clients for Batch:								
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671								
MVKAP1AA-SAMP Constituent List:								
MVKAP1AC-MS Constituent List:								
MVKAP1AD-MSD:								
MVKAX1AA-BLK:								
MVKAX1AC-LCS:								
MVKAP1AA-SAMP Calc Info:								
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B				
MVKAP1AC-MS Calc Info:								
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B				
MVKAP1AD-MSD:								
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B				
MVKAX1AA-BLK:								
MVKAX1AC-LCS:								
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B				

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
 ISV - Insufficient Volume for Analysis
 WO Ont: 6
 ICOC v4.8.49