

April 16, 2015

CH2M HILL Plateau Remediation Company  
2420 Stevens Center Place  
P.O. Box 1600  
Richland, WA 99352  
Attn.: Tracey A. Burch

**Subject: Geotechnical Laboratory Testing Services, Data Deliverable for SDG # WA150120150004, Rev. 0**

Enclosed is the final report on geotechnical analyses performed by RJ Lee Group in conjunction with PBS Engineering and Environmental, Inc. (PBS) for Sample Delivery Group number (SDG #) WA150120150004.

**General Set Comments**

RJ Lee Group received from CH2M-Hill Plateau Remediation Company (CHPRC) 1 sample to be tested for geotechnical analysis at the Columbia Basin Analytical Laboratories. There are no SIRs associated with this SDG.

The CHPRC sample, in SDG # WA150120150004, has been assigned a PBS Geotechnical Lab Sample number per the below table.

CHPRC Sample #	SDG #	Geotechnical Lab Sample #
B2YRR3	WA150120150004	H-0023

This project deliverable, provided in Attachment 1, contains the reports of the requested analytical results and a copy of the associated chain of custody for the sample listed above.

The analytical results provided in this deliverable relate only to the items tested. The sample was received in acceptable condition unless otherwise noted in the attached report(s).

I certify that this analytical report is in compliance with the Hanford SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the Laboratory Director or a designee as verified by the following signature.



April 16, 2015

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Dr. Heinz Huber  
Laboratory Manager, Columbia Basin Analytical Laboratories

Date

If you have any questions, please feel free to contact us at 509-545-4989 or email at [hhuber@rjleegroup.com](mailto:hhuber@rjleegroup.com).

Attachment 1

PBS Geotechnical laboratory Testing Results, SDG # WA150120150004,  
dated March 18, 2015

April 16, 2015



Engineering +  
Environmental

March 18, 2015

RJ Lee Group, Inc.  
Attn: Mr. Larry Lockrem  
Columbia Basin Analytical Laboratories  
2710 North 20<sup>th</sup> Avenue  
Pasco, Washington 93301

Re: Geotechnical Laboratory Testing Results  
Sample Delivery Group No. WA150120150004  
PBS Project No. 63737.000

Dear Mr. Lockrem:

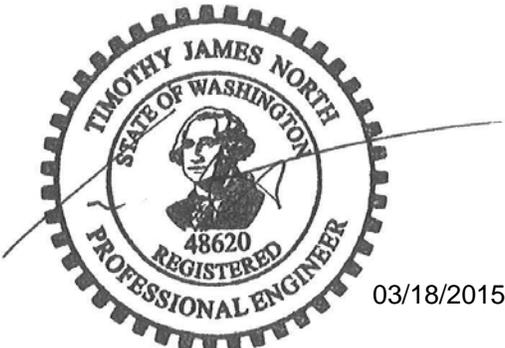
In accordance with your request, PBS Engineering and Environmental Inc. (PBS) is providing you with the results of our recent geotechnical laboratory testing. Our services were provided in accordance with the request provided with Sample Delivery Group (SDG) number WA150120150004.

We performed the following test:

- Hydraulic Conductivity – Constant Head (ASTM D2434)

The appropriate permeability/hydraulic conductivity test (ASTM D2434 or D5084) was selected based on the texture characteristics of the sample received, per section 3.2.2 of the contract. We trust this letter meets your current needs. If you have any questions, or wish to further discuss our observations, conclusions, and recommendations, please contact us at 509.942.1600.

Sincerely,  
PBS Engineering and Environmental, Inc.



Timothy J. North, P.E.  
Project Geotechnical Engineer

Nathan A. Bowles, P.E.  
Senior Engineer/Operations Manager

TN/NB

Attachments: Report of Laboratory Testing – Hydraulic Conductivity – Constant Head  
Chain of Custody

400 Bradley Boulevard, Suite 300, Richland, WA 99352  
509.942.1600 Main  
866.727.0140 Fax  
www.pbsenv.com



<b>COLLECTOR</b> M.A. White/CHPRC	<b>COMPANY CONTACT</b> TODAK, D 376-6427	<b>TELEPHONE NO.</b> 376-6427	<b>PROJECT COORDINATOR</b> TODAK, D	<b>PRICE CODE</b> 8H	<b>DATA TURNAROUND</b> 30 Days / 30 Days
<b>SAMPLING LOCATION</b> C8295, I-001	<b>PROJECT DESIGNATION</b> 100-KR-4 Long Term & Interim Action Monitoring - Soil	<b>FIELD LOGBOOK NO.</b> HNF-N-507-28-92	<b>SAF NO.</b> F13-046	<b>AIR QUALITY</b> <input type="checkbox"/>	<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE <b>ORIGINAL</b>
<b>ICE CHEST NO.</b> N/A	<b>ACTUAL SAMPLE DEPTH</b> 52.4' - 52.9'	<b>COA</b> 300085	<b>BILL OF LADING/AIR BILL NO.</b> N/A		
<b>SHIPPED TO</b> RJ EE - GEOTECHNICAL	<b>OFFSITE PROPERTY NO.</b> N/A				

WA150120150004  
 14-0023

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil 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.	None	6 Months	Split Spoon Liner	1	1000g	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b> B2YRR3	<b>MATRIX*</b> SOIL	<b>SAMPLE DATE</b> JAN 14 2015	<b>SAMPLE TIME</b> 1245				

April 16 2015

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM M.A. White/CHPRC	RECEIVED BY/STORED IN SSU-1	TRVL-14-190 (1) D2434_PERMEABILITY: COMMON; D5084_HYDRRAULIC CONDUCTIVITY: COMMON;
DATE/TIME JAN 14 2015 1535	DATE/TIME JAN 15 2015 0745	
RELINQUISHED BY/REMOVED FROM F.M. Hall/CHPRC	RECEIVED BY/STORED IN SSU-1	
DATE/TIME JAN 15 2015 1050	DATE/TIME JAN 15 2015 0745	
RELINQUISHED BY/REMOVED FROM [Signature]	RECEIVED BY/STORED IN [Signature]	
DATE/TIME 1-15-15 10:50	DATE/TIME JAN 15 2015 1050	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	

TRVL-14-190

<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>DISPOSED BY</b>
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DATE/TIME</b>

April 16, 2015



### Geotechnical Laboratory Sample Receipt

Date/Time Received: 1/15/15

SDG#: WA150120150004

Work Order Number: 300085

SAF# F13-046-080

Shipping Container Identification: \_\_\_\_\_

1. Custody Seals on shipping container intact? Yes  No

2. Custody Seals dated and signed? Yes  No

3. Chain-of-Custody record present? Yes  No

4. Cooler temperature NA

5. Vermiculite/packing materials is Wet  Dry

6. Number of samples in shipping container: 1

7. Samples have:

tape \_\_\_\_\_ hazard labels

custody seals  appropriate sample labels

8. Samples are:

in good condition for the geotechnical tests required \_\_\_\_\_ leaking/desiccated

\_\_\_\_\_ broken or disaggregated

9. Were any anomalies identified in sample receipt? Yes  No

10. Description of anomalies (include sample numbers):

11. Rad Screen Performed: NA

12. Chain of Custody # F13-046-080

Comments: \_\_\_\_\_

Sample Custodian/Laboratory: C Lopez Date: 1/15/15

Telephoned to: \_\_\_\_\_ On \_\_\_\_\_ by \_\_\_\_\_ 6 of 6