

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 # W150142, 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 #) W150142.

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.

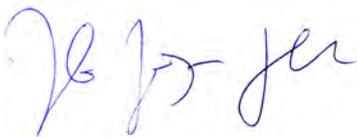
The CHPRC sample, in SDG # W150142, has been assigned a PBS Geotechnical Lab Sample number per the below table.

CHPRC Sample #	SDG #	Geotechnical Lab Sample #
B2YRR4	W150142	H-0024

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

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.

Attachment 1

PBS Geotechnical laboratory Testing Results, SDG # W150142,
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 20th Avenue
Pasco, Washington 93301

Re: Geotechnical Laboratory Testing Results
Sample Delivery Group No. W150142
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 W150142.

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. The test was performed in general accordance with the above-mentioned ASTM Standards, except for the following cases:

- **Hydraulic Conductivity – Constant Head (ASTM D2434):** The sample was not tested in a permeameter cylinder appropriately sized based on the maximum particle size of the soil due to the lack of adequate sample volumes provided. The test was performed in the closest appropriately sized cylinder available for the volume of sample provided, per the direction of RJ Lee and CHPRC.

The sample provided was inadequate in terms of sample size in general and consisted primarily of large particle sizes, both of which should be considered when interpreting the results of the testing. A photograph of the sample is attached.

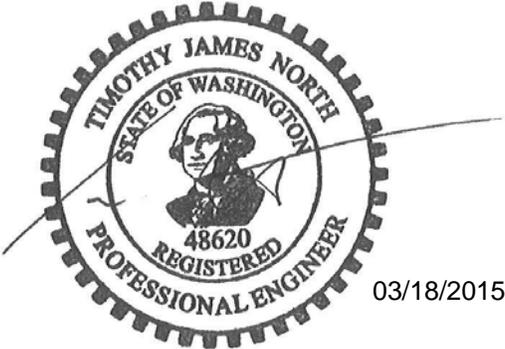
400 Bradley Boulevard, Suite 300, Richland, WA 99352
509.942.1600 Main
866.727.0140 Fax
www.pbsenv.com

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Re: Geotechnical Laboratory Testing Results – W150142
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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

A handwritten signature in black ink, appearing to read "N.A. Bowles".

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

TN/NB

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

April 16, 2015

Mr. Larry Lockrem
Re: Geotechnical Laboratory Testing Results – W150142
March 18, 2015



Photo 1. Sample No. B2YRR4 (PBS Sample No. H-0024).

COLLECTOR: J.R. Aguilera/CHPRC
 COMPANY CONTACT: TODAY, D
 TELEPHONE NO.: 376-6427
 PROJECT COORDINATOR: TODAY, D

SAMPLING LOCATION: C8295, I-003
 PROJECT DESIGNATION: 100-KR-4 Long Term & Interim Action Monitoring - Soil
 FIELD LOGBOOK NO.: 100-KR-4
 ACTUAL SAMPLE DEPTH: 73.5" - 74.6"
 SAF NO.: F13-046
 PRICE CODE: 8H
 AIR QUALITY:
 DATA TURNAROUND: 30 Days / 30 Days

ICE CHEST NO.:
 SHIPPED TO: RJE - GEOTECHNICAL
 OFFSITE PROPERTY NO.: HNF-2-S07-28 / 93
 BILL OF LADING/AIR BILL NO.:
 METHOD OF SHIPMENT: GOVERNMENT VEHICLE
ORIGINAL

MATRIX*
 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

POSSIBLE SAMPLE HAZARDS/ REMARKS
 *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

PRESERVATION: None
 HOLDING TIME: 6 Months
 TYPE OF CONTAINER: Split Spoon Liner
 NO. OF CONTAINER(S): 1
 VOLUME: 1000g

SPECIAL HANDLING AND/OR STORAGE: SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2YRR4	SOIL	1-19-15	1225

W150142
 H-0024

TRVL-14-190
 (1) D2434_PERMEABILITY: COMMON; D5084_HYDRRAULIC CONDUCTIVITY: COMMON;

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
J.R. Aguilera/CHPRC	1-19-15 1500	SSu # 1	1-19-15 1500	TRVL-14-190 (1) D2434_PERMEABILITY: COMMON; D5084_HYDRRAULIC CONDUCTIVITY: COMMON;
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

CHAIN OF POSSESSION
 SIGN/ PRINT NAMES

LABORATORY SECTION: RECEIVED BY
 FINAL SAMPLE DISPOSITION: DISPOSAL METHOD

RELINQUISHED BY/REMOVED FROM: TRVL-14-190
 DATE/TIME: 1-19-15 1500

