

June 17, 2016

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 # W605102, 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 #) W605102.

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 # W605102, has been assigned a PBS Geotechnical Lab Sample number per the below table.

CHPRC Sample #	SDG #	Geotechnical Lab Sample #
B354K1	W605102	H-0060

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.



Rich Westberg
Laboratory Director, Columbia Basin Analytical Laboratories

06/17/2016
Date

If you have any questions, please feel free to contact us at 509-545-4989 or email at rwestberg@rjleegroup.com.

JUNE 17, 2016

Attachment 1

PBS Geotechnical Laboratory Testing Results, SDG # W605102,
dated June 17, 2016

JUNE 17, 2016



Engineering +
Environmental

June 14, 2016

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. W605102
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 W605102.

We performed the following tests:

- Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass (ASTM D2216)
- Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937)

The tests were performed in general accordance with the above-mentioned ASTM Standards.

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.



6/14/2016

Adam M. Swenson, P.E.
Project Geotechnical Engineer

AS/rg

Attachments: Report of Laboratory Testing – Density by Drive Cylinder and Moisture Contents
Chain of Custody

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509.942.1600 Main
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www.pbsenv.com

Bend | Boise | Coos Bay | Eugene | Portland | Seattle | Tri-Cities | Vancouver | Walla Walla

JUNE 17, 2016

**REPORT OF LABORATORY TESTING**

Report to: CH2M-Hill - Plateau Remediation 2420 Stevens Center Place P.O. Box 1600 Richland, WA 99352	Date: 6/14/2016
	Sample Delivery Group No.: W605102
	Sample Authorization No.: F15-028

Project: CHPRC Laboratory	Project No.: 63797.000
Report of: Density by Drive Cylinder (ASTM D2937) Moisture Content (ASTM D2216)	Lab Technician: A. Jaimes

Items Received:

One sample was provided to us containing soil material obtained by you, the client. PBS performed the following test:

Density by Drive Cylinder (ASTM D2937).

The dry densities (dry unit weight) of representative soils were determined in the laboratory using the relatively undisturbed soil samples. The dimensions of the specimen were carefully measured, the volume calculated, and the specimen weighed. A representative sample was obtained from the specimen, weighed, and placed in the oven to dry. After oven drying, the representative sample was reweighed and the water content calculated. The dry density was then computed. The results of tests are included in the table below.

Moisture Content (ASTM D2216).

Natural moisture content determinations were made on the samples of the fine-grained soils (that is, silts, clays, and silty sands). The natural moisture content is defined as the ratio of the weight of water to dry weight of soil, expressed as a percentage.

LABORATORY TEST RESULTS**Density by Drive Cylinder (ASTM D2937)****Moisture Content (ASTM D2216)**

Customer Sample Number	Laboratory Sample Number	Wet Density (lbs/ft ³)	Water Content (%)	Dry Density (lbs/ft ³)
B354K1	H-0060	132.8	2.9	129.1

SHEET 1 OF 1

REVIEWED BY: A. Swenson, P.E.

CH2MHILL Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-028-013	PAGE 1 OF 1
COLLECTOR Don Brotherton CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9414, 200-WA-1 #6	PROJECT DESIGNATION 200-WA-1 Opportunistic sampling - soil	ACTUAL SAMPLE DEPTH 253.0	SAF NO. F16-028	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. N/A	FIELD LOGBOOK NO. HNF-N-645 4-#4	OFFSITE PROPERTY NO. N/A	COA 304043	BILL OF LADING/AIR BILL NO. N/A	ORIGINAL
SHIPPED TO RJ EE - GEOTECHNICAL					

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION		NO. OF CONTAINER(S)	VOLUME	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS
		HOLDING TIME	TYPE OF CONTAINER				
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/1ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	None	Spill Spoon Liner	1	1000g		SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO. B354K1	MATRIX* SOIL	SAMPLE DATE MAY 12 2016	SAMPLE TIME 0737				

JUNE 17 2016

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Don Brotherton CHPRC	DATE/TIME MAY 12 2016 0830	RECEIVED BY/STORED IN SSU-1	DATE/TIME MAY 12 2016 0830	Liner B to be submitted intact for geotechnical analysis with end caps taped to prevent loss or infiltration of moisture (1) D2216_MOISTURE CONTENT: COMMON {Percent moisture (dry sample), Percent moisture (wet sample)}; D2937_DENSITY: COMMON {Bulk density - dry, Bulk density - wet};	
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME MAY 23 2016 1250	RECEIVED BY/STORED IN L.D. Wall CHPRC	DATE/TIME MAY 23 2016 1250		
RELINQUISHED BY/REMOVED FROM L.D. Wall CHPRC	DATE/TIME MAY 23 2016 1530	RECEIVED BY/STORED IN L. P. R. J LEE GROUP	DATE/TIME MAY 23 2016 1530		
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RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

