

May 24, 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 # W603105, 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 #) W603105.

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.

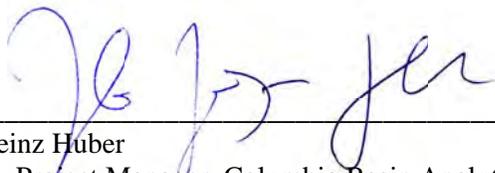
The CHPRC sample, in SDG # W603105, has been assigned a PBS Geotechnical Lab Sample number per the below table.

CHPRC Sample #	SDG #	Geotechnical Lab Sample #
B354J9	W603105	H-0056

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.



Heinz Huber
Sr. Project Manager, Columbia Basin Analytical Laboratories

05/24/2016
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 # W603105,
dated May 24, 2016

May 24, 2016



Engineering +
Environmental

May 12, 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. W603105
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 W603105.

We performed the following test:

- Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937)

The test was performed in general accordance with the above-mentioned ASTM Standard.

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.



5/12/2016

A handwritten signature in black ink, appearing to read 'Adam Swenson'.

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

AS/rg

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

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

REPORT OF LABORATORY TESTING

Report to: CH2M-Hill - Plateau Remediation 2420 Stevens Center Place P.O. Box 1600 Richland, WA 99352	Date: 5/11/2016 Sample Delivery Group No.: W603105 Sample Authorization No.: F15-028
---	---

Project: CHPRC Laboratory	Project No.: 63797.000
Report of: Density by Drive Cylinder (ASTM D2937)	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, including moisture, wet density, and dry density are included in the table below.

LABORATORY TEST RESULTS

Density by Drive Cylinder (ASTM D2937)

Customer Sample Number	Laboratory Sample Number	Wet Density (lbs/ft ³)	Water Content (%)	Dry Density (lbs/ft ³)
B354J9	H-0056	112.5	12.3	100.2

COLLECTOR
Curt Hoffman
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 #4

PROJECT DESIGNATION
200-WA-1 Opportunistic sampling - soil

ACTUAL SAMPLE DEPTH
165.8' - 168.3'

SAF NO. F16-028
COA #10, 3/24/16
354643

AIR QUALITY

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ICE CHEST NO.

FIELD LOGBOOK NO.
HNF-N-645 3-57

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

SHIPPED TO

PRESERVATION
None

HOLDING TIME
None

BILL OF LADING/AIR BILL NO.
N/A

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

MATRIX*
A=Air
DL=Drum
L=Liquids
DS=Drum
Solids
L=Liquid
O=Oil
S=Soil
SF=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

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.

WB3D5

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION
None

HOLDING TIME
None

BILL OF LADING/AIR BILL NO.
N/A

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

SAMPLE NO.

MATRIX*

SAMPLE DATE **SAMPLE TIME**

NO. OF CONTAINER(S)

TYPE OF CONTAINER

VOLUME

SEE ITEM (1) IN SPECIAL INSTRUCTIONS

B35419

SOIL

MAR 29 2016 1355

1

Split Spoon Liner

1000g

✓

May 24 2016



COPY

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM
CHPRC
L.D. Wall
MAR 30 2016 0815

RECEIVED BY/STORED IN
SSU-1
L.D. Wall
MAR 30 2016 0815

DATE/TIME
MAR 29 2016 1450

DATE/TIME
MAR 29 2016 1450

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
L.D. Wall
MAR 30 2016 18:10

RECEIVED BY/STORED IN
L.D. Wall
MAR 30 2016 18:10

DATE/TIME
MAR 30 2016 0815

DATE/TIME
MAR 30 2016 0815

RELINQUISHED BY/REMOVED FROM

RECEIVED BY/STORED IN

DATE/TIME

DATE/TIME

LABORATORY SECTION
RECEIVED BY

FINAL SAMPLE DISPOSITION
DISPOSAL METHOD

TITLE

DISPOSED BY

DATE/TIME

DATE/TIME

DATE/TIME