DEPARTMENT OF THE ARMY
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5403

MCHB-TS-RDE

28 FEB 2010

MEMORANDUM FOR Office of the Command Surgeon (LTC (b) (6)), US Central Command, 7115 South Boundary Boulevard, MacDill Air Force Base, FL 33621-5101

SUBJECT: Analytical Results, Ash Characterization, Q-West, Iraq, 23 November 2009, U_IRQ_QWEST_CM_ASH_20091123

1. The enclosed report details the analytical results for one burn pit ash sample collected by 61st Medical Detachment personnel at Q-West, Iraq, 23 November 2009.

2. According to US regulations, the ash sample did not exhibit hazardous waste toxicity characteristics using the Toxic Characteristic Leaching Procedure (TCLP) or Polychlorinated Biphenyls (PCB) analysis. Assuming that the ash exhibits none of the other characteristics of hazardous waste (such as, corrosivity, reactivity, or ignitability), the ash should be considered nonhazardous, non PCB solid waste under US regulations. The ash should continue to be analyzed for three additional quarters to establish a 1-year baseline for TCLP and PCBs. Annual samples should be taken thereafter to ensure continued proper characterization.

FOR THE COMMANDER:

(b) (6)

Encl

(b) (6)
Director, Health Risk Management

CF: (w/encl)
224th MED DET (Commander/MAJ (b) (6)
224th MED DET (XO/CPT (b) (6)
705th MP BN (Environmental Science and Safety Officer/CPT (b) (6)
USF-I (Command Surgeon Office/LTC (b) (6)
USF-I CJ148 (Commander/CDR (b) (6)
ARCENT (Command Surgeon Office/MAJ (b) (6)
ARCENT (Force Health Protection Officer/LTC (b) (6)
CFLCC/USA 3D MDSC (MAJ (b) (6)
1st MED BDE (Environmental Science Officer/SFC (b) (6)
(CONT)

MCHB-TS-RDE
SUBJECT: Analytical Results, Ash Characterization, Q-West, Iraq, 23 November 2009, U_IRQ_QWEST_CM_ASH_20091123

CF: (w/encl) (CONT)
1st MED BDE (Environmental Science Officer/MSG (b) (6)
1st MED BDE (Environmental Science Officer/CPT (b) (6)
118th MMB (FHP ESO/MAJ (b) (6)
61st MMB (Preventive Medicine OIC/CPT (b) (6)
61st MMB (Preventive Medicine NCO/SSG (b) (6)
227th MED DET PM (Commander/MAJ (b) (6)
MND-B (Command Surgeon Office/CPT (b) (6)
USAPHC-EUR (MCHB-AE-EE/CPT (b) (6)

U.S. Army Public Health Command
(Provisional)

USAPHC

ANALYTICAL RESULTS
ASH CHARACTERIZATION
Q-WEST, IRAQ
23 NOVEMBER 2009
U_IRQ_QWEST_CM_ASH_20091123

Preventive Medicine Survey: 40-5f1

ANALYTICAL RESULTS
ASH CHARACTERIZATION
Q-WEST, IRAQ
23 NOVEMBER 2009
U_IRQ_QWEST_CM_ASH_20091123

1. REFERENCES. See Appendix A for a list of references.

2. PURPOSE AND SCOPE. This assessment documents the analytical results for one burn pit ash sample collected from Q-West, Iraq, 23 November 2009. Although the analytical results for the sample were assessed to determine whether the ash is considered hazardous waste according to U.S. regulations, an occupational and environmental health (OEH) risk estimate was not derived for the sample because it was assumed there is no personnel exposure to the material as sampled (see Background and Exposure Assumptions, paragraph 3). The U.S. criteria were used because there are no local regulations on the identification and management of hazardous waste.

3. BACKGROUND AND EXPOSURE ASSUMPTIONS. One surface discrete sample was collected and submitted for toxicity characterization. The ash sample was collected from the solid waste burn pit located on Q-West, Iraq. Based on the incineration processes, it is assumed that the ash will not exhibit the hazardous characteristics of corrosivity, reactivity, or ignitability. The KBR® operates the burn pit. It is assumed that U.S. personnel have very limited or no exposure to the residual ash and, therefore, an operational risk assessment was not performed for the ash sample. The degree of exposure to ash pile is considered low (such as nontraffic areas, restricted area, etc). (KBR® is a registered trademark of KBR Inc.)

4. ANALYTICAL RESULTS.

a. General. The ash sample was analyzed by the U.S. Army Public Health Command (Provisional) (USAPHC (Prov)), formerly U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), laboratory for semivolatile organic compounds (SVOCs), herbicides, pesticides, and metals using the Toxicity Characteristic Leaching Procedure (TCLP) method. The sample was separately analyzed for polychlorinated biphenyls (PCBs). An Information sampling summary is provided in Appendix B. A sample results summary table is provided in Appendix C. Detailed laboratory results are provided in Appendix D.

Use of trademarked name(s) does not imply endorsement by the U.S. Army but is intended only to assist in identification of a specific product.

b. Characterization. None of the compounds in the analyses were detected at levels above their TCLP or PCB disposal regulatory limits. Therefore, the ash samples should be considered nonhazardous and non PCB waste.

5. CONCLUSION. No SVOCs, herbicides, pesticides, metals, or PCBs were detected at concentrations greater than U.S. regulatory guidelines for hazardous waste. Assuming that the ash exhibits none of the other characteristics of hazardous waste (such as, corrosivity, reactivity, or ignitability), the ash should be considered nonhazardous and non PCB solid waste under U.S. regulations. The ash should continue to be analyzed for three additional quarters to establish a 1-year baseline. Annual samples should be taken thereafter to ensure continued proper characterization.

6. RECOMMENDATIONS AND NOTES.

a. Recommendations.

(1) Manage the waste ash as solid waste; provided the content of the waste stream does not change and the incineration process is being conducted according to applicable standards.

(2) Continue to collect samples of the ash for three additional quarters and submit them to USAPHC (Prov) for analysis. Though the samples have been shown to be nonhazardous for one quarter when analyzed for metals, pesticides, herbicides, SVOCs and PCBs, the ash has not yet been analyzed for four consecutive quarters. Three more quarters of sampling for TCLP and total PCB content is recommended. Annual samples should be taken thereafter to ensure continued proper characterization.

b. Notes.

(1) This analytical report is specific to the nonexposure scenario listed in this report. If the scenario changes and personnel are exposed to the ash, an OEH risk estimate will need to be prepared to match the new exposure scenario and re-sampling may need to occur.

(2) As part of a Comprehensive Military Medical Surveillance Program, required by Department of Defense Directive 6490.02E and Department of Defense Instruction 6490.03, this report has been submitted to the Deployment Occupational and Environmental Health Surveillance-Data Portal (DOEHS-DP). You can view this and other archived DOEHS data at https://doehsportal.apgea.army.mil/doehrs-oehs/. If you have additional DOEHS data for this location it can also be submitted via this Web site.

Analytical Results, Ash Characterization, Q-West, Iraq, 23 Nov 09, U_IRQ_QWEST_CM_ASH_20091123

7. POINTS OF CONTACT. The USAPHC (Prov) points of contact for this assessment are Ms. (b) (6) and Mr. (b) (6). Ms. (b) (6) may be contacted at e-mail (b) (6) and Mr. (b) (6) may be contacted at e-mail (b) (6), or DSN (b) (6) or commercial (b) (6).

(b) (6)
Environmental Scientist
Deployment Environmental Surveillance Program

Approved by:

(b) (6)
MAJ, MS
Program Manager
Deployment Environmental Surveillance

APPENDIX A

REFERENCES

1. Department of Defense Directive (DODD) 6490.02E, Comprehensive Health Surveillance, 21 October 2004.

2. Department of Defense Instruction (DODI) 6490.03, Deployment Health, 11 August 2006.

3. Title 40, Code of Federal Regulations Part 261, Identification and Listing of Hazardous Waste.

4. Title 40, CFR, Part 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.

5. Environmental Protection Agency Manual SW-846, Test Methods for Evaluating Solid Waste - Laboratory Manual, Physical/Chemical Methods.

6. U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) Technical Guide (TG) 230, Chemical Exposure Guidelines for Deployed Military Personnel, Version 1.3, May 2003 with the January 2004 addendum.

APPENDIX B

SAMPLE INFORMATION SUMMARY
ASH CHARACTERIZATION
Q-WEST, IRAQ
23 NOVEMBER 2009

DOEHRS Sample ID	Field/Local Sample ID	Site	Start Date/Time	Collection Type
00001MXP	IRQ_QWEST_09327-ASH	Burn pit ash	2009/11/23 1520	Surface discrete

LEGEND:
DOEHRS Sample ID = Deployment Occupational and Environmental Health Readiness System Sample Identification Number

APPENDIX C

SAMPLE RESULTS SUMMARY
ASH CHARACTERIZATION
Q-WEST, IRAQ
23 NOVEMBER 2009

Parameter	Units	Concentration	Environmental Protection Agency Toxicity Characteristic Leaching Procedure Regulatory Levels (mg/L)	
			# > MEG	MEG[1,2]
Cresol	mg/L	2.7	No MEG	
Heptachlor	mg/L	0.0009	0	0.008
PCB-209	mg/kg	0.191	See Notes	
Tetrachloro-m-xylene	mg/kg	0.177	See Notes	

[1]MEG = USACHPPM TG230 Military Exposure Guideline
[2]This table was created from DOEHRS on 28 December 2009. The MEGs in DOEHRS are current as of June 2009.

LEGEND:
mg/kg = milligram per kilogram
mg/L = milligram per liter
PCB = polychlorinated biphenyl
MEG = military exposure guideline

NOTES:
PCB-209 = According to 40 CFR 268.40 the cleanup level for PCBs is 10 ppm or 10 mg/kg.
Tetrachloro-m-xylene = While no specific regulatory limits exist for this compound, similar compounds (i.e., tetrachlorobenzene) have disposal limits of 14 mg/kg. Since both of the detected concentrations of the compounds were well below regulated or estimated disposal limits, the ash can be treated as regular nonhazardous solid waste.

Analytical Results, Ash Characterization, Q-West, Iraq, 23 Nov 09,
U_IRQ_QWEST_CM_ASH_20091123

APPENDIX D

DETAILED LABORATORY RESULTS
ASH CHARACTERIZATION
Q-WEST, IRAQ
23 NOVEMBER 2009

DOEHRS Sample ID			00001MXP
Field/Local Sample ID			IRQ_QWEST_09327-ASH
Site			Burn Pit Ash
Start Date/Time			2009/11/23 1520
Parameter	Class	Units	Concentration[1,2]
1,4-Dichlorobenzene	VOC	mg/L	< 0.02
2,4,5-TP (Silvex)	Herbicides	mg/L	< 0.01
2,4,5-Trichlorophenol	SVOC	mg/L	< 0.8
2,4,6-Trichlorophenol	SVOC	mg/L	< 0.04
2,4-D	Herbicides	mg/L	< 0.1
2,4-Dinitrotoluene	SVOC	mg/L	< 0.004
Aroclor 1016	PCB	mg/kg	< 0.2
Aroclor 1221	PCB	mg/kg	< 0.2
Aroclor 1232	PCB	mg/kg	< 0.2
Aroclor 1242	PCB	mg/kg	< 0.2
Aroclor 1248	PCB	mg/kg	< 0.2
Aroclor 1254	PCB	mg/kg	< 0.2
Aroclor 1260	PCB	mg/kg	< 0.2
Arsenic	Metals	mg/L	< 0.2
Barium	Metals	mg/L	< 0.01
Cadmium	Metals	mg/L	< 0.1
Chlordane	Insecticides	mg/L	< 0.003
Chromium	Metals	mg/L	< 0.1
Cresol		mg/L	2.7
Endrin	Insecticides	mg/L	< 0.002
gamma-HCH (gamma-BHC, Lindane)	Insecticides	mg/L	< 0.004
Heptachlor	Insecticides	mg/L	0.0009
Heptachlor epoxide	Insecticides	mg/L	< 0.0001
Hexachlorobenzene	SVOC	mg/L	< 0.004
Hexachlorobutadiene	VOC	mg/L	< 0.01
Hexachloroethane	SVOC	mg/L	< 0.04
Lead	Metals	mg/L	< 0.4
Mercury	Metals	mg/L	< 0.002
Methoxychlor	Insecticides	mg/L	< 0.01
Nitrobenzene	SVOC	mg/L	< 0.04
PCB-209		mg/kg	0.191
Pentachlorophenol	SVOC	mg/L	< 0.2

Analytical Results, Ash Characterization, Q-West, Iraq, 23 Nov 09, U_IRQ_QWEST_CM_ASH_20091123

DOEHRS Sample ID			00001MXP
Field/Local Sample ID			IRQ_QWEST_09327-ASH
Site			Burn Pit Ash
Start Date/Time			2009/11/23 1520
Parameter	Class	Units	Concentration[1,2]
Pyridine	SVOC	mg/L	< 0.02
Selenium	Metals	mg/L	< 0.4
Silver	Metals	mg/L	< 0.04
Tetrachloro-m-xylene		mg/kg	0.177
Toxaphene	Insecticides	mg/L	< 0.005

[1] < X.XX = Below laboratory reporting limit (X.XX)
[2]Laboratory reporting limit is parameter and sample specific

LEGEND:
DOEHRS Sample ID = Deployment Occupational and Environmental Health Readiness System Sample Identification Number
SVOC = semivolatile organic compound
VOC = volatile organic compound
PCB = polychlorinated biphenyl
mg/kg = milligrams per kilogram
mg/L = milligrams per liter