DEPARTMENT OF THE ARMY
US ARMY INSTITUTE OF PUBLIC HEALTH
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MARYLAND 21010-5403

MCHB-IP-RDE

19 DEC 2013

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, Mahmudiyah, Iraq, 12 June 2010, U_IRQ_MAHMUDIYAH_CM_ASH_20100612

1. The enclosed report details the analytical results for one burn pit ash sample collected by 3d Brigade Support Battalion personnel at Mahmudiyah, Iraq, 12 June 2010.

2. According to U.S. 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 U.S. regulations.

FOR THE DIRECTOR:

(b) (6)

Encl

Portfolio Director, Health Risk Management

CF: (w/encl)
3d BSB (Environmental Science Officer/LT (b) (6)
USF-I (Command Surgeon Office/CPT (b) (6)
USF-I CJ148 (Commander/CDR (b) (6)
ARCENT (Command Surgeon Office/MAJ (b) (6)
ARCENT (Force Health Protection Officer/LTC (b) (6)
USAFSAM (LtCol (b)
CFLCC/USA 3d MDSC (MAJ (b) (6)
1st MED BDE (Environmental Science Officer/MSG (b) (6)
1st MED BDE (Environmental Science Officer/LTC (b) (6)
(CONT)

MCHB-TS-RDE
SUBJECT: Analytical Results, Ash Characterization, Mahmudiyah, Iraq, 12 June 2010, U_IRQ_MAHMUDIYAH_CM_ASH_20100612

CF: (w/encl) (CONT)
118th MMB (FHP ESO/MAJ (b) (6)
61st MMB (Preventive Medicine OIC/CPT (b) (6)
61st MMB (Preventive Medicine NCO/SSG (b) (6)
MND-B (Command Surgeon Office/CPT (b) (6)
926th MED DET PM (Commander/MAJ (b) (6)

USAPHC
U.S. ARMY PUBLIC HEALTH COMMAND (Provisional)
5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5403

ANALYTICAL RESULTS
ASH CHARACTERIZATION
MAHMUDIYAH, IRAQ
12 JUNE 2010
U_IRQ_MAHMUDIYAH_CM_ASH_20100612

Preventive Medicine Survey: 40-5f1

ANALYTICAL RESULTS
ASH CHARACTERIZATION
MAHMUDIYAH, IRAQ
12 JUNE 2010
U_IRQ_MAHMUDIYAH_CM_ASH_20100612

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 at Mahmudiyah, Iraq, 12 June 2010. Although the analytical results for this 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 samples 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 of ash was collected and submitted for toxicity characterization. The sample was collected from a small solid waste burn pit at Mahmudiyah, Iraq. U.S. personnel used the burn pit to dispose of their waste, but did not operate it. The burn pit was operated by local contracted personnel before it was closed and the land transferred to the Iraqis. It is assumed that the residual ash left from burning the solid waste will not exhibit the hazardous characteristics of corrosivity, reactivity, or ignitability. Since U.S. personnel are/were not involved with the operation of the burn pit, an operational risk assessment was not performed for the ash samples.

4. ANALYTICAL RESULTS.

a. General. The ash sample was analyzed by the U.S. Army Public Health Command (Provisional) (USAPHC (Prov)), Army Institute of Public Health (AIPH), 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). A sample information summary is provided in Appendix B. A sample results summary table is provided in Appendix C. Detailed laboratory results are provided in Appendix D.

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

6. RECOMMENDATION AND NOTES.

a. Recommendation. Manage the residual ash from this burn pit as solid waste.

b. Notes.

(1) This analytical report is specific to the nonexposure scenario described 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 Occupational and Environmental Health Surveillance (OEHS)-Data Portal). You can view this and other archived OEHS data at https://doehsportal.apgea.army.mil/doehrs-oehs/. If you have additional OEHS data for Mahmudiyah, Iraq it can also be submitted via this Web site.

Analytical Results, Ash Characterization, Mahmudiyah, Iraq, 12 Jun 10, U_IRQ_MAHMUDIYAH_CM_ASH_20100612

7. POINTS OF CONTACT. The USAPHC (Prov), AIPH points of contact for this assessment are CPT (b) (6) and Mr. (b) (6). CPT (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

Analytical Results, Ash Characterization, Mahmudiyah, Iraq, 12 Jun 10, U_IRQ_MAHMUDIYAH_CM_ASH_20100612

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
MAHMUDIYAH, IRAQ
12 JUNE 2010

DOEHRS Sample ID	Field/Local Sample ID	Site	Sample Date/Time	Collection Type
00002R9L	IRA MAHMUD 10163 03S	Burn Pit	2010/06/12 1658	Surface discrete

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

APPENDIX C

SAMPLE RESULTS SUMMARY
ASH CHARACTERIZATION
MAHMUDIYAH, IRAQ
12 JUNE 2010

Parameter	Units	Concentration	Environmental Protection Agency Toxicity Characteristic Leaching Procedure Regulatory Levels (mg/L)	
			# > Regulatory Level	Regulatory Level[1,2]
2,4-Dinitrotoluene [J]	mg/L	0.0041	0	0.13
Barium	mg/L	0.5200	0	100
Heptachlor [J]	mg/L	0.0002	0	0.008
Hexachlorobenzene [J]	mg/L	0.0120	0	0.13
Lead	mg/L	1.6000	0	5
Pentachlorophenol [J]	mg/L	0.0270	0	100

[1]See 40 CFR 261.24
[2]This table was created from DOEHRS on 17 September 2010.
[J] Indicates an estimated value. Value was detected above Method Detection Limit but below Method Reporting Limit (also known as Limit of Quantitation or Practical Quantitation Limit).

LEGEND:
mg/L = milligram per liter

APPENDIX D

DETAILED LABORATORY RESULTS
ASH CHARACTERIZATION
MAHMUDIYAH, IRAQ
12 JUNE 2010

DOEHRS Sample ID			00002R9L
Field/Local Sample ID			IRA MAHMUD 10163 03S
Site			MAHMUDIYAH
Sample Date/Time			2010/06/12 1658
Parameter	Class	Units	Concentration[1,2]
1,4-Dichlorobenzene	VOC	mg/L	0.0000
2,4,5-TP (Silvex)	Herbicides	mg/L	0.0000
2,4,5-Trichlorophenol	SVOC	mg/L	0.0000
2,4,6-Trichlorophenol	SVOC	mg/L	0.0000
2,4-D	Herbicides	mg/L	0.0000
2,4-Dinitrotoluene	SVOC	mg/L	0.0041
2-Methylphenol (o-Cresol)	SVOC	mg/L	0.0000
Aroclor 1016	PCB	µg/g	0.0000
Aroclor 1221	PCB	µg/g	0.0000
Aroclor 1232	PCB	µg/g	0.0000
Aroclor 1242	PCB	µg/g	0.0000
Aroclor 1248	PCB	µg/g	0.0000
Aroclor 1254	PCB	µg/g	0.0000
Aroclor 1260	PCB	µg/g	0.0000
Arsenic	Metals	mg/L	0.0000
Barium	Metals	mg/L	0.5200
Cadmium	Metals	mg/L	0.0000
Chlordane	Insecticides	mg/L	0.0000
Chromium	Metals	mg/L	0.0000

Analytical Results, Ash Characterization, Mahmudiyah, Iraq, 12 Jun 10, U_IRQ_MAHMUDIYAH_CM_ASH_20100612

DOEHRS Sample ID			00002R9L
Field/Local Sample ID			IRA MAHMUD 10163 03S
Site			MAHMUDIYAH
Sample Date/Time			2010/06/12 1658
Parameter	Class	Units	Concentration[1,2]
Cresol		mg/L	0.0000
Endrin	Insecticides	mg/L	0.0000
gamma-HCH (gamma-BHC, Lindane)	Insecticides	mg/L	0.0000
Heptachlor	Insecticides	mg/L	0.0002
Heptachlor epoxide	Insecticides	mg/L	0.0000
Hexachlorobenzene	SVOC	mg/L	0.0120
Hexachlorobutadiene	VOC	mg/L	0.0000
Hexachloroethane	SVOC	mg/L	0.0000
Lead	Metals	mg/L	1.6000
Mercury	Metals	mg/L	0.0000
Methoxychlor	Insecticides	mg/L	0.0000
Nitrobenzene	SVOC	mg/L	0.0000
Pentachlorophenol	SVOC	mg/L	0.0270
Pyridine	SVOC	mg/L	0.0000
Selenium	Metals	mg/L	0.0000
Silver	Metals	mg/L	0.0000
Toxaphene	Insecticides	mg/L	0.0000

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

LEGEND:
DOEHRS Sample ID = Defense Occupational and Environmental Health Readiness System Sample Identification Number
SVOC = semivolatile organic compound
VOC = volatile organic compound
PCB = polychlorinated biphenyl
µg/g = micrograms per gram
mg/L = milligrams per liter