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US ARMY INSTITUTE OF PUBLIC HEALTH  
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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: Deployment Occupational and Environmental Health Surveillance Sample  
Report, Soil, Musa Qe'Lah, Afghanistan, 18 December 2010,  
U\_AFG\_MUSAQELAH\_CM\_SQA\_20101218

1. The enclosed report details the deployment occupational and environmental health risk characterization derived from one soil sample and two ash samples collected by Marine Expeditionary Force personnel, Musa Qe'Lah, Afghanistan, 18 December 2010.
2. None of the chemicals detected in the samples were identified as potential hazards.

FOR THE DIRECTOR:

(b) (6)

Encl

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Portfolio Director, Health Risk Management

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**U.S. ARMY PUBLIC HEALTH COMMAND (Provisional)**

5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5403

Deployment Occupational and Environmental Health Surveillance Sample Report,  
U\_AFG\_MUSAQELAH\_CM\_SQA\_20101218  
Health Risk Management Portfolio

Soil, Musa Qe'Lah, Afghanistan, 18 December 2010

Prepared by (b) (6)  
Deployment Environmental Surveillance Program

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Preventive Medicine Surveys: 40-5f1

## ACKNOWLEDGMENTS

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.

**DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL  
HEALTH SURVEILLANCE SAMPLE REPORT  
SOIL  
MUSA QE'LAH, AFGHANISTAN  
18 DECEMBER 2010  
U\_AFG\_MUSAQELAH\_CM\_SQA\_20101218**

## **1 References**

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See Appendix A for a list of references.

## **2 Purpose**

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According to the U.S. Department of Defense deployment occupational and environmental health (OEH) surveillance requirements, this document assesses the potential OEH risks associated with the environmental exposure to chemical hazards by deployed U.S. personnel. This report is intended to identify potential sources of particular health effects that may develop during a population's deployment, identify areas where preventive steps can be taken to mitigate future environmental exposure, and document exposure conditions for future inquiries.

## **3 Scope**

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This report utilizes published information and guidance resources, information provided on field data sheets, and laboratory analyses to assess chemical hazards for the associated sample set. This assessment does not address all deployment OEH hazards to which U.S. personnel may be exposed.

## **4 Laboratory Analysis**

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Deployment soil samples received at the U.S. Army Public Health Command (Provisional) (USAPHC (Prov)), Army Institute of Public Health (AIPH) laboratory are analyzed for a standard set of parameters that includes metals, pesticides/polychlorinated biphenyls, herbicides, semivolatiles organic compounds, inorganic chemicals, radionuclides, and various physical characteristics. The complete analytical sample results can be viewed in the Defense Occupational and Environmental Health Readiness System-Environmental Health (DOEHRS-EH). Log into the DOEHRS-EH and search for the samples using the DOEHRS sample identification numbers (IDs) provided in section 5.

Deployment ash samples received at the U.S. Army Public Health Command (Provisional) (USAPHC (Prov)), Army Institute of Public Health (AIPH) laboratory are analyzed for semivolatiles organic compounds, herbicides, pesticides, and metals using the Toxicity Characteristic Leaching Procedure (TCLP). Although volatile organic compounds are among the chemicals listed in 40 CFR 261.3 Table 1 "Maximum Concentration of Contaminants for the Toxicity Characteristic," they are not included in the standard USAPHC (Prov) laboratory analytical suite because it is assumed they are not present in the ash resulting from the incineration process. The samples were separately analyzed for polychlorinated biphenyls (PCBs). The complete analytical sample results can be viewed in the Defense Occupational and Environmental Health Readiness System-Environmental Health (DOEHRS-EH). Log into the DOEHRS-EH and search for the samples using the DOEHRS sample identification numbers (IDs) provided in Section 5.

## 5 Exposure Setting

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Information about the samples and population exposure setting were provided on the field data sheets submitted with the samples unless otherwise noted. The soil and ash samples were collected on 18 December 2010 at Musa Qe'Lah, Afghanistan. The samples were collected from around the burn pit and berthing areas because the ashes from the burn pit can potentially travel throughout the camp due to sand storms and wind conditions during this time of the year. It is an arid environment and the ashes/soil stick to the skin, uniform and boots. Marines are burning human waste in the burn pit area. The Marines wear paper masks and stir the waste several times during the process. The burning process takes place at least 3 times per day depending upon camp population.

The ash sample identified on the field data sheet as AFG\_MSQ\_10352\_01S is associated with sample ID 00003SIB in the DOEHRS-EH. The composite sample was collected from an area near the burn pit. All personnel generally deploy to this location for approximately 1 year.

The ash sample identified on the field data sheet as AFG\_MSQ\_10352\_02S is associated with sample ID 00003SIG in the DOEHRS-EH. The discrete sample was collected from an area near the burn barrels. All personnel generally deploy to this location for approximately 1 year.

The soil sample identified on the field data sheet as AFG\_MSQ\_10352\_03S is associated with sample ID 00003SII in the DOEHRS-EH. The discrete sample was collected from the berthing area. All personnel generally deploy to this location for approximately 1 year.

## 6 Prescreen

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None of the chemicals detected in the samples were identified as potential hazards because the concentrations did not exceed USAPHC (Prov) Technical Guide (TG) 230 military exposure guidelines (MEGs). The sample results were compared to MEGs on 15 February 2011.

## 7 Limitations

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### 7.1 Field Data Quality

The field data sheet provided with the samples was adequately filled out.

### 7.2 Sample Receipt at USAPHC (Prov) Laboratory

The samples were received at the USAPHC (Prov) at a temperature of 12 degrees Celsius. The samples were packaged correctly and no sample containers were broken during shipment.

Sample jars were only one-third full when received at the lab.

### 7.3 Laboratory Data Quality

Some parameters in this data set are flagged with a J code (<sup>J</sup>). This code indicates an estimated value that was detected above the Method Detection Limit but below the Method Reporting Limit (also known as Limit of Quantitation or Practical Quantitation Limit).

**Deployment OEH Surveillance Sample Report, Soil, Musa Qe'Lah, Afghanistan, 18 Dec 10,  
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Two of the three samples (AFG\_MSQ\_10352\_01S and AFG\_MSQ\_10352\_02S) received only Toxicity Characteristic Leaching Procedure analysis due to the determination that samples were ash rather than soil. The third sample (AFG\_MSQ\_10352\_03S) received a full soil suite analysis with the exception of radiation analysis due to the partial filling of the sample jar.

**8 Recommendations**

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Due to reduced volume laboratory analysis, it is imperative that the sample jars be filled completely. If the jars are not completely filled, a complete laboratory analysis cannot be completed.

Maintain communication with USAPHC (Prov), AIPH points of contact (POCs) and continue standard surveillance of soil exposures in accordance with defined OEH Site Assessment Exposure Pathways and sampling plans for your location.

**9 Points of Contact**

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The USAPHC (Prov), AIPH POCs for this assessment are Ms. (b) (6) and Ms. (b) (6). Ms. (b) (6) may be contacted at e-mail (b) (6) and Ms. (b) (6) may be contacted at e-mail (b) (6), or DSN (b) (6) or commercial (b) (6).

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Acting Program Manager  
Deployment Environmental Surveillance

## **Appendix A**

### **References**

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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. Department of the Army (DA) Field Manual (FM) 5-19, Composite Risk Management, 21 August 2006.
4. USAPHC (Prov) Technical Guide (TG) 230, Chemical Exposure Guidelines for Deployed Military Personnel, June 2010.