



DEPARTMENT OF THE ARMY  
US ARMY INSTITUTE OF PUBLIC HEALTH  
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06 MAR 2013

MCHB-IP-RDE

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

SUBJECT: Deployment Occupational and Environmental Health Surveillance Sample  
Report, Soil, Mullah Mahdi, Afghanistan, 22 January 2013,  
U\_AFG\_MULLAHMAHDI\_IP\_SQA\_20130122

1. The enclosed report details the assessment of one soil sample collected by  
794th Medical Detachment personnel, Mullah Mahdi, Afghanistan, 22 January 2013.
2. None of the chemicals detected in the sample were identified as potential hazards.

FOR THE DIRECTOR:

Encl

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Portfolio Director, Health Risk Management

CF: (w/encl)

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## **U.S. ARMY PUBLIC HEALTH COMMAND**

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

**Deployment Occupational and Environmental Health Surveillance  
Sample Report, U\_AFG\_MULLAHMAHDI\_IP\_SQA\_20130122  
Health Risk Management Portfolio**

**Soil, Mullah Mahdi, Afghanistan**

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

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**Preventive Medicine Surveys: 40-5f1**

## ACKNOWLEDGEMENTS

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

**Deployment Occupational and Environmental  
Health Surveillance Sample Report  
Soil  
Mullah Mahdi, Afghanistan  
22 January 2013  
U\_AFG\_MULLAHMAHDI\_IP\_SQA\_20130122**

## **1 References**

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See Appendix A for a list of references.

## **2 Purpose**

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This report provides the U.S. Army Public Health Command (USAPHC), Army Institute of Public Health (AIPH) assessment of the laboratory analytical results and exposure information associated with the sample collected by 794th Medical Detachment personnel on 22 January 2013 at Mullah Mahdi, Afghanistan according to the U.S. Department of Defense deployment occupational and environmental health (DOEH) surveillance requirements. The assessment serves several purposes. It identifies DOEH hazards that may be related to acute health effects that could occur in personnel during their deployment. It provides an official record of observed exposure conditions for use in future site evaluations. Finally, this report includes preventive steps to reduce or eliminate occupational and environmental exposures, and surveillance and/or sampling recommendations, as necessary.

## **3 Scope**

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The assessment of sample results and exposure information in this report follows the process published in the USAPHC Technical Guide (TG) 230 "Environmental Health Risk Assessment and Chemical Exposure Guidelines for Deployed Military Personnel, June 2010 Revision." The assessment is based on limited data representing a specific time period and assesses short-term exposure risks only. This report, therefore, cannot be used alone to estimate the risk of chronic health effects from exposures. In addition, this assessment does not address all DOEH hazards to which U.S. personnel may be exposed.

## **4 Laboratory Analysis**

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Deployment soil samples received at the USAPHC, AIPH laboratory are analyzed for a standard set of parameters that includes metals, pesticides/polychlorinated biphenyls, herbicides, semivolatile 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 (DOEHRS). Log into the DOEHRS and search for the sample using the DOEHRS sample identification number (ID) provided in section 5.

## **5 Exposure Setting**

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Table 1 contains information about the sampling location, environmental conditions, and associated potential population exposure. The information was provided on the field data sheet and/or exposure assessment worksheet submitted with the sample unless otherwise noted. The composite soil sample was collected on 22 January 2013 at Mullah Mahdi, Afghanistan. The sample was identified on the field data sheet as AFG\_MULLAHMAHDI\_20130122\_01S; the sample is associated with sample ID 00008J7T in the DOEHRS.

**Table 1. Exposure Information**

Questions About Exposure	Information Provided and Assumptions
Why was this sample/sample set collected?	The sample was for routine assessment of soil for contaminants.
What population is exposed and how?	All personnel at this location come into contact with the soil via inhalation or dermal contact.
What is the timeframe under consideration?	The timeframe is the deployment duration unless subsequent activities change or contamination occurs.
Where was the sample/sample set collected?	The sample was collected from multiple points at this location.
What is known about location, activity, setting and potential sources of contamination that may affect exposure?	There is an active burn pit, as well as active urine tubes placed throughout the camp. Outpost/burn-out latrines burned daily. There was a small diesel spill at this location. There is light traffic at this location and the guard towers are located directly next to the burn pit.

## 6 Prescreen

Table 2 shows whether parameters are identified as potential hazards because their sample concentration is greater than their most health-protective screening level USAPHC TG 230 military exposure guidelines (MEGs). Potential hazards are further assessed to determine if they are acute hazards. Parameters analyzed but not shown in Table 2 are not considered hazards. The prescreening is conducted as described in USAPHC TG 230, section 3.4.3. The sample results were compared to MEGs on 28 February 2013.

**Table 2. Results of Prescreen**

Parameter	Sample Concentration (mg/kg)	1-year Negligible MEG (mg/kg)	Result
Barium	87	14801	Exclude as potential hazard
Chromium	35	297840	Exclude as potential hazard
Di(2-ethylhexyl)phthalate	1.3	35354	Exclude as potential hazard
Nickel	38	4242.4	Exclude as potential hazard
Strontium	330	424240	Exclude as potential hazard

Legend: mg/kg = milligrams per kilogram

## 7 Conclusion

None of the chemicals detected in the sample were identified as potential hazards because the concentrations were not greater than USAPHC TG 230 MEGs.

## **8 Limitations**

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### **8.1 Field Data Quality**

Field data provided with the sample were adequate.

### **8.2 Sample Receipt at USAPHC Laboratory**

The sample was received at the USAPHC at a temperature of 7 degrees Celsius. The sample was packaged correctly.

### **8.3 Laboratory Data Quality**

No laboratory data quality issues associated with this sample were identified.

### **8.4 Risk Assessment**

Military exposure guidelines have not been developed for several chemicals detected in the sample primarily due to a lack of accepted health information data for these chemicals. The U.S. Environmental Protection Agency or other health organizations have not published nor recommended health-impacting exposure thresholds.

## **9 Recommendations**

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

An OEHSA was completed for Mullah Mahdi, Afghanistan on 22 January 2013. Update the OEHSA annually or as the exposure scenario changes.

## 10 Points of Contact

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The USAPHC, AIPH POCs for this assessment are Mr. (b) (6) and Mr. (b) (6).  
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## Appendix A

### References

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Department of the Army. 2006. Field Manual 5-19, *Composite Risk Management*. <https://rdl.train.army.mil/soldierPortal/atia/adlsc/view/public/23137-1/FM/5-19/TOC.HTM>

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