



DEPARTMENT OF THE ARMY  
US ARMY INSTITUTE OF PUBLIC HEALTH  
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MCHB-IP-RDE

2 SEP 2012

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, Mizan, Afghanistan, 29 April 2012, U\_AFG\_MIZAN\_IP\_SQA\_20120429

1. The enclosed report details the assessment of three soil samples collected by 792d Medical Detachment personnel, Mizan, Afghanistan, 29 April 2012.
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

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\_MIZAN\_IP\_SQA\_20120429  
Health Risk Management Portfolio**

**Soil, Mizan, Afghanistan**

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

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

CHPPM/PHC FORM 433-E (MCHB-CS-IP), SEP 10

**Deployment Occupational and Environmental  
Health Surveillance Sample Report  
Soil  
Mizan, Afghanistan  
29 April 2012  
U\_AFG\_MIZAN\_IP\_SQA\_20120429**

**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 samples collected by 792d Medical Detachment on 29 April 2012 at Mizan, 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. It identifies whether or not there is a potential for chronic health concerns which may require additional characterization. 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 Provisional (Prov) 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 samples using the DOEHRS sample identification numbers (IDs) provided in Table 1 below.

**Table 1. Sample Identification Information**

DOEHRS Sample ID	Sample ID Reported on Field Data Sheet	Sample Site	Date and Time Sample Collected	Collection Type
00006X1B	AFG_MIZAN_12119_1S	Class IV yard	2012/04/29 1710	Composite
00006X1D	AFG_MIZAN_12119_2S	Burn Pit	2012/04/29 1740	Composite
00006X1E	AFG_MIZAN_12119_3S	DFAC Area	2012/04/29 1800	Composite

**5 Exposure Setting**

Table 2 contains information about the sampling location, environmental conditions, and associated potential population exposure. The information was provided on the field data sheets and/or exposure assessment worksheets submitted with the samples unless otherwise noted. Correction and clarification of exposure assumptions by the sampling unit is encouraged.

**Table 2. Exposure Information**

Questions About Exposure	Information Provided and Assumptions
Why was this sample/sample set collected?	Routine sampling of soil as described in the Occupational and Environmental Health Site Assessment (OEHSA) dated 27 June 2011.
What population is exposed and how?	Camp personnel are exposed to the soil in the class IV yard, burn pit, and dining facility (DFAC). The living area is frequented by all camp personnel, but they generally just walk in the area.
What is the timeframe under consideration?	Deployment duration unless subsequent activities change or contamination occurs.
Where was the sample/sample set collected?	Three sites: the class IV yard, burn pit, and DFAC
What is known about location, activity, setting and potential sources of contamination that may affect exposure?	There was evidence of a past fuel spill at the Class IV Yard. There is potential contamination at the DFAC from the fuel in the generator. There is a helicopter landing zone located near the burn pit.

**6 Prescreen**

Table 3 shows whether parameters are identified as potential hazards because their peak single sample concentrations are greater than their most health-protective screening level USAPHC (Prov) 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 3 are not considered hazards. The prescreening is conducted as described in USAPHC (Prov) TG 230, section 3.4.3. The sample results were compared to MEGs on 6 June 2012.

**Table 3. Results of Prescreen**

Parameter	Detections/Samples	Peak Single Sample Concentration (mg/kg)	1-year Negligible MEG (mg/kg)	Result
Barium	3/3	67	14801	Exclude as potential hazard
Chromium	3/3	28	297840	Exclude as potential hazard
Di(2-ethylhexyl)phthalate	2/3	28	35354	Exclude as potential hazard
Lead	2/3	15	2200	Exclude as potential hazard
Mercury	2/3	0.011	978080	Exclude as potential hazard
Nickel	3/3	32	4242.4	Exclude as potential hazard
Strontium	3/3	440	424240	Exclude as potential hazard

Legend: mg/kg = milligrams per kilogram

**7 Conclusion**

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

## **8 Limitations**

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### **8.1 Field Data Quality**

Field data provided with the samples were adequate.

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

The samples were received at the USAPHC at a temperature of 24 degrees Celsius. The samples were packaged correctly.

### **8.3 Laboratory Data Quality**

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

### **8.4 Risk Assessment**

Military exposure guidelines have not been developed for several chemicals detected in the samples 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 Pathways and sampling plans for your location.

## 10 Points of Contact

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

(b) (6)

(b) (6)

Environmental Scientist  
Deployment Environmental Surveillance  
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Approved by:

(b) (6)

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Acting Program Manager  
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## **Appendix A**

### **References**

- Department of Defense. 2004. Department of Defense Directive 6490.02E, *Comprehensive Health Surveillance*. <http://www.dtic.mil/whs/directives/corres/pdf/649002Ep.pdf>
- Department of Defense. 2006. Department of Defense Instruction 6490.03, *Deployment Health*. <http://www.dtic.mil/whs/directives/corres/pdf/649003p.pdf>
- 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>
- U.S. Army Public Health Command (Provisional). 2010. Technical Guide 230, *Chemical Exposure Guidelines for Deployed Military Personnel*. <http://phc.amedd.army.mil/PHC%20Resource%20Library/TG230.pdf>