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

MCHB-TS-RDE

11 MAR 2010

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

SUBJECT: Deployment Occupational and Environmental Health Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 December 2009, U_AFG_BOSTICK_CM_SQA_20091230

1. The enclosed report details the occupational and environmental health (OEH) risk characterization for two soil samples collected by 255th Medical Detachment personnel at Bostick, Afghanistan, 30 December 2009.

2. The soil kit was not shipped in a cooler or box so the laboratory results are considered to be estimated.

3. The OEH risk estimate for exposure to the soil and associated dust near the medical treatment facility and burn pit at Bostick, Afghanistan is **low**. None of the chemical or physical parameters were detected at concentrations above their respective military exposure guidelines. Exposure to the soil and associated dust is expected to have little or no impact on unit readiness.

FOR THE COMMANDER:

[redacted]
Director, Health Risk Management

Encl

CF: (w/encl)
255th MED DET (Commander/CPT [redacted])
255th MED DET (XO/CPT [redacted])
255th MED DET (SPC [redacted])
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ARCENT (Command Surgeon Office/MAJ [redacted])
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ARCENT (Force Health Protection Officer/LTC [redacted])
30th MEDCOM (Environmental Science Officer/LTC [redacted])
(CONT)

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U.S. Army Public Health Command
(Provisional)

USAPHC

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
HEALTH RISK CHARACTERIZATION
SOIL AND ASSOCIATED DUST SAMPLES
BOSTICK, AFGHANISTAN
30 DECEMBER 2009
U_AFG_BOSTICK_CM_SQA_20091230

Preventive Medicine Survey: 40-5f1

DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL
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1. REFERENCES. See Appendix A for a list of references.

2. PURPOSE. According to U.S. Department of Defense medical surveillance requirements, this occupational and environmental health (OEH) risk characterization documents the identification and assessment of chemical hazards that pose potential health and operational risks to deployed troops. Specifically, the samples and information provided on the associated field data sheets were used to estimate the operational health risk associated with personnel exposure to identified chemical hazards in the soil at Bostick, Afghanistan.

3. SCOPE. This assessment addresses the analytical results for two soil samples collected from Bostick, Afghanistan, 30 December 2009. These samples are limited in time, area, and media. Therefore, this report should not be considered a complete assessment of the overall OEH hazards to which troops may be exposed at Bostick, Afghanistan. However, this assessment has been performed using operational risk management (ORM) doctrine, Field Manual (FM) 5-19, and the relatively conservative (protective) assumptions and methods provided in U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) Technical Guide (TG) 230, to facilitate decision making that can minimize the likelihood of significant risks.

4. BACKGROUND AND EXPOSURE ASSUMPTIONS. The soil samples were collected to assess the potential for adverse health effects to personnel coming into contact with the sampled soil and associated dust at Bostick, Afghanistan. Two discrete surface soil samples were collected from the medical treatment facility (MTF) and burn pit. It is expected that all of the personnel at Bostick, Afghanistan are exposed to the soil in this area. Personnel are expected to remain on at Bostick, Afghanistan for approximately 1 year. The following explain the samples in more detail:

a. AFG_BOSTICK_09364_01S. This sample was collected from the MTF. The field data sheet indicated that this area is a medium traffic area that runs next to the transient tents on base. The area is covered in gravel. The degree of exposure to the soil is considered medium (walking areas, common areas, grassy athletic fields, etc.).

b. AFG_BOSTICK_09364_02S. The field data sheet indicated that this sample was collected from the burn pit. This area is a low traffic area which runs next to the heli-pad

on base. This location is also covered with gravel. The degree of exposure to the soil is considered to be low (non-traffic areas, restricted areas, etc).

5. METHOD. The United States Army Public Health Command (Provisional) (USAPHC (Prov)), formerly USACHPPM, Deployment Environmental Surveillance Program uses the USACHPPM TG 230 methodology and associated military exposure guidelines (MEGs) to assess identified hazards and estimate risk in a manner consistent with doctrinal risk management procedures and terminology. This method includes identification of the hazard(s), assessment of the hazard severity and probability, and determination of a risk estimate and associated level of confidence. As part of the hazard identification step, the long-term (1-year) MEGs are used as screening criteria to identify those hazards that are potential health threats. These 1-year MEGs represent exposure concentrations at or below which no significant health effects (including delayed or chronic disease or significant increased risk of cancer) are anticipated even after 1 year of continuous daily exposures. Short-term MEGs are used to assess one time or intermittent exposures. The underlying toxicological basis for the MEGs is addressed in USACHPPM Reference Document (RD) 230. Since toxicological information about potential health effects varies among different chemicals, the determination of severity of effects when MEGs are exceeded involves professional judgment. Hazards with exposure concentrations greater than MEGs are identified as potential health threats, carried through the hazard assessment process, and assigned a risk estimate consistent with ORM methodology. Hazards that are either not detected or are present only at levels below the 1-year MEGs are not considered health threats and, therefore, are automatically assigned a low operational risk estimate.

6. HAZARD IDENTIFICATION AND ASSESSMENT.

a. Laboratory Analysis. The two soil samples were analyzed by the USAPHC (Prov) laboratory for metals, pesticides/polychlorinated biphenyls, herbicides, radionuclides, and semivolatile organic compounds. The soil kit was not shipped in a cooler or box so the laboratory results are considered to be estimated. An information summary for the samples is contained in Appendix B. Appendix C presents a sample results summary table for all detected parameters. Appendix D presents detailed laboratory results.

b. Risk Estimate. None of the parameters detected in the two soil samples collected were present at concentrations greater than their respective MEGs. Therefore, no potential health threats were identified, and the risk estimate is considered **low**.

7. CONCLUSION. The OEH risk estimate for exposure to the soil and associated dust near the MTF and burn pit at Bostick, Afghanistan is **low**. Confidence in the risk

estimate is considered low due to the improper shipment of the samples. Exposure to the soil and associated dust is expected to have little or no impact on unit readiness.

8. RECOMMENDATIONS AND NOTES.

a. Recommendations.

(1) Please resample this area immediately to increase the confidence in the risk characterization. Please ship the samples in a cooler with ice packs. If you do not have the proper shipping materials, please contact your USAPHC (Prov) point of contact.

(2) Although there is a low risk of mission impact due to exposure to soil and associated dust at Bostick, Afghanistan, the following general personal protection recommendations should be followed.

(a) Minimize skin exposure to the soil and associated dust, the uniform should be worn properly: roll sleeves down, tuck pants into boots, and tuck undershirt into pants.

(b) Ensure hand washing stations are readily available. Wash hands and face with soap and water prior to eating, drinking, or smoking.

(c) Report any symptoms to a health care provider in order to identify potential causes and implement hazard control measures.

(d) Collect additional soil samples from this site/area if there is a known change in or concern with the soil conditions.

b. Notes.

(1) This OEH risk assessment is specific to the exposure assumptions identified in this report and the sample results assessed in this report. If the assumed exposure scenario changes, provide updated information so that the risk estimate can be reassessed. If additional samples from these areas are collected, a new OEH risk assessment will be completed.

(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 (DOEHS)-Data Portal. You can view this and other archived DOEHS data at https://doehsportal.apgea.army.mil/doehrs-oehs/. If you have

additional DOEHS data for Bostick, Afghanistan it can also be submitted via this Web site.

9. POINTS OF CONTACT. The USAPHC (Prov) points of contact for this assessment are Mr. (b) (6) and Ms. (b) (6). Mr. (b) (6) may be contacted at e-mail (b) (6); Ms. (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 (DOD-D) 6490.02E, Comprehensive Health Surveillance, 21 October 2004.

2. Department of Defense-Instruction (DOD-I) 6490.03, Deployment Health, 11 August 2006.

3. Department of the Army, Field Manual (FM) 5-19, Composite Risk Management, 21 August 2006.

4. 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.

5. USACHPPM Reference Document (RD) 230, Chemical Exposure Guidelines for Deployed Military Personnel, Version 1.3, May 2003 with January 2004 addendum.

APPENDIX B

INFORMATION SUMMARY
SOIL AND ASSOCIATED DUST SAMPLES
BOSTICK, AFGHANISTAN
30 DECEMBER 2009

DOEHRS Sample ID	Field/Local Sample ID	Site	Start Date/Time	Collection Type
00001R6B	AFG_BOSTICK_09364_01S	Path next to the MTF tent	2009/12/30 1450	Soil-discrete
00001R6C	AFG_BOSTICK_09364_02S	Burn pit	2009/12/30 1000	Soil-discrete

LEGEND:
DOEHRS Sample ID = Deployment Occupational and Environmental Health Readiness System Sample Identification Number
MTF = medical treatment facility

APPENDIX C

RESULTS SUMMARY
SOIL AND ASSOCIATED DUST SAMPLES
BOSTICK, AFGHANISTAN
30 DECEMBER 2009

Parameter[1]	Units	Sample Identification		# > Laboratory Reporting Limit	USACHPPM TG 230 Military Exposure Guidelines(MEG)[4]	
		AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S			
		Path next to medical treatment tent	Burn pit		1-year	
		Concentration[2 3]			# > MEG	MEG
Barium	mg/kg	59.7	66.6	2	0	18000
Chromium	mg/kg	29.8	26.8	2	0	5700
Nickel	mg/kg	28.1	29	2	0	5300
Strontium	mg/kg	162	39.8	2	0	140000

[1]Sample Identification includes the Field/Local sample identification number and the sample site.
[2]< X.XX = Below laboratory reporting limit (X.XX)
[3]Laboratory reporting limit is parameter and sample specific.
[4]This table was created from DOEHRS on 16 February 2010. The MEGs in DOEHRS are current as of June 2009.

LEGEND:
mg/kg = milligram per kilogram
USACHPPM = U.S. Center for Health Promotion and Preventive Medicine
TG = technical guide
MEGs = military exposure guidelines
DOEHRS = Deployment Occupational and Environmental Health Readiness System

APPENDIX D

ANALYTICAL RESULTS
SOIL AND ASSOCIATED DUST SAMPLES
BOSTICK, AFGHANISTAN
30 DECEMBER 2009

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
1,2,4-Trichlorobenzene	SVOC	mg/kg	< 0.37	< 0.34
1,2-Dichlorobenzene	VOC	mg/kg	< 0.37	< 0.34
1,3-Dichlorobenzene	VOC	mg/kg	< 0.37	< 0.34
1,4-Dichlorobenzene	VOC	mg/kg	< 0.37	< 0.34
2,4,5-T	Herbicides	mg/kg	< 0.05	< 0.05
2,4,5-TP {Silvex}	Herbicides	mg/kg	< 0.05	< 0.05
2,4,5-Trichlorophenol	SVOC	mg/kg	< 0.37	< 0.34
2,4,6-Trichlorophenol	SVOC	mg/kg	< 0.37	< 0.34
2,4-D	Herbicides	mg/kg	< 0.05	< 0.05
2,4-DB	Herbicides	mg/kg	< 0.05	< 0.05
2,4-Dichlorophenol	SVOC	mg/kg	< 0.37	< 0.34
2,4-Dimethylphenol	SVOC	mg/kg	< 0.37	< 0.34
2,4-Dinitrophenol	SVOC	mg/kg	< 0.37	< 0.34
2,4-Dinitrotoluene	SVOC	mg/kg	< 0.37	< 0.34
2,6-Dinitrotoluene	SVOC	mg/kg	< 0.37	< 0.34
2-Chloronaphthalene	SVOC	mg/kg	< 0.37	< 0.34
2-Chlorophenol	SVOC	mg/kg	< 0.37	< 0.34
2-Methyl-4,6-dinitrophenol	SVOC	mg/kg	< 0.37	< 0.34
2-Methylnaphthalene	SVOC	mg/kg	< 0.37	< 0.34
2-Methylphenol {o-Cresol}	SVOC	mg/kg	< 0.37	< 0.34
2-Nitroaniline	SVOC	mg/kg	< 0.37	< 0.34
2-Nitrophenol	SVOC	mg/kg	< 0.37	< 0.34
3,5-Dichlorobenzoic acid	Herbicides	mg/kg	< 0.05	< 0.05

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
3-Nitroaniline	SVOC	mg/kg	< 0.73	< 0.68
4-Chloro-3-methylphenol	SVOC	mg/kg	< 0.37	< 0.34
4-Chloroaniline	SVOC	mg/kg	< 0.37	< 0.34
4-Methylphenol {p-Cresol}	SVOC	mg/kg	< 0.37	< 0.34
4-Nitroaniline	SVOC	mg/kg	< 0.37	< 0.34
4-Nitrophenol	SVOC	mg/kg	< 0.37	< 0.34
Acenaphthene	PAH	mg/kg	< 0.37	< 0.34
Acenaphthylene	PAH	mg/kg	< 0.37	< 0.34
Acifluorfen	Herbicides	mg/kg	< 0.05	< 0.05
Actinium-228		µCi/g	0.00000208	0.00000308
Alachlor	Herbicides	mg/kg	< 0.22	< 0.204
Aldrin	Insecticides	mg/kg	< 0.0551	< 0.0509
alpha-Chlordane	Insecticides	mg/kg	< 0.0551	< 0.0509
alpha-HCH {alpha-BHC}	Insecticides	mg/kg	< 0.0551	< 0.0509
Anthracene	PAH	mg/kg	< 0.37	< 0.34
Aroclor 1016	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1221	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1232	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1242	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1248	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1254	PCB	mg/kg	< 0.22	< 0.204
Aroclor 1260	PCB	mg/kg	< 0.22	< 0.204
Arsenic	Metals	mg/kg	< 43.2	< 39.1
Aspon	Insecticides	mg/kg	< 0.11	< 0.102
Atrazine	Herbicides	mg/kg	< 2.2	< 2.04
Azinphos-ethyl	Insecticides	mg/kg	< 0.22	< 0.204
Azinphos-methyl	Insecticides	mg/kg	< 0.22	< 0.204
Barium	Metals	mg/kg	59.7	66.6
Benefin	Herbicides	mg/kg	< 0.11	< 0.102
Bentazon	Herbicides	mg/kg	< 0.05	< 0.05

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
Benz[a]anthracene	PAH	mg/kg	< 0.37	< 0.34
Benzo[a]pyrene	PAH	mg/kg	< 0.37	< 0.34
Benzo[b]fluoranthene	PAH	mg/kg	< 0.37	< 0.34
Benzo[g,h,i]perylene	PAH	mg/kg	< 0.37	< 0.34
Benzo[k]fluoranthene	PAH	mg/kg	< 0.37	< 0.34
Benzyl alcohol	SVOC	mg/kg	< 0.37	< 0.34
Beryllium	Metals	mg/kg	< 2.16	< 1.96
beta-HCH {beta-BHC}	Insecticides	mg/kg	< 0.0551	< 0.0509
Bis(2-chloroethoxy)methane	SVOC	mg/kg	< 0.37	< 0.34
Bis(2-chloroethyl)ether	SVOC	mg/kg	< 0.37	< 0.34
Bis(2-chloroisopropyl) ether	SVOC	mg/kg	< 0.37	< 0.34
Bismuth-214		µCi/g	0.00000121	0.00000142
Bolstar	Insecticides	mg/kg	< 0.22	< 0.204
Bromacil	Herbicides	mg/kg	< 0.44	< 0.408
Butylbenzylphthalate	SVOC	mg/kg	< 0.37	< 0.34
Cadmium	Metals	mg/kg	< 4.32	< 3.91
Carbophenothion	Insecticides	mg/kg	< 0.22	< 0.204
Cesium-134		µCi/g	< 0.00000010200	< 0.000000147
Cesium-137		µCi/g	< 0.00000018	< 0.00000018
Chlordane, technical	Insecticides	mg/kg	< 0.22	< 0.204
Chlorfenvinphos	Insecticides	mg/kg	< 0.11	< 0.102
Chloroneb	Fungicides	mg/kg	< 0.275	< 0.255
Chlorothalonil	Fungicides	mg/kg	< 0.11	< 0.102
Chlorpyrifos	Insecticides	mg/kg	< 0.11	< 0.102
Chlorpyrifos-methyl	Insecticides	mg/kg	< 0.11	< 0.102
Chromium	Metals	mg/kg	29.8	26.8
Chrysene	PAH	mg/kg	< 0.37	< 0.34
cis-Permethrin	Insecticides	mg/kg	< 0.44	< 0.408
Cobalt-60		µCi/g	< 0.00000015200	< 0.000000156
Coumaphos	Insecticides	mg/kg	< 0.22	< 0.204

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
Crotoxyphos	Insecticides	mg/kg	< 0.22	< 0.204
DCPA {Dacthal}	Herbicides	mg/kg	< 0.11	< 0.102
delta-HCH {delta-BHC}	Insecticides	mg/kg	< 0.0551	< 0.0509
Di(2-ethylhexyl)phthalate	SVOC	mg/kg	< 0.37	< 0.34
Diazinon	Insecticides	mg/kg	< 0.11	< 0.102
Dibenz[a,h]anthracene	PAH	mg/kg	< 0.37	< 0.34
Dibenzofuran	SVOC	mg/kg	< 0.37	< 0.34
Dicamba	Herbicides	mg/kg	< 0.05	< 0.05
Dichlofenthion	Insecticides	mg/kg	< 0.11	< 0.102
Dichloroprop	Herbicides	mg/kg	< 0.05	< 0.05
Dichlorvos	Insecticides	mg/kg	< 0.22	< 0.204
Dicloran	Fungicides	mg/kg	< 0.22	< 0.204
Dieldrin	Insecticides	mg/kg	< 0.0551	< 0.0509
Diethylphthalate	SVOC	mg/kg	< 0.37	< 0.34
Dimethoate	Insecticides	mg/kg	< 0.44	< 0.408
Dimethylphthalate	SVOC	mg/kg	< 0.37	< 0.34
Di-n-butylphthalate	SVOC	mg/kg	< 0.37	< 0.34
Di-n-octylphthalate	SVOC	mg/kg	< 0.37	< 0.34
Dinoseb	Herbicides	mg/kg	< 0.05	< 0.05
Disulfoton	Insecticides	mg/kg	< 0.22	< 0.204
Endosulfan I	Insecticides	mg/kg	< 0.0551	< 0.0509
Endosulfan II	Insecticides	mg/kg	< 0.11	< 0.102
Endosulfan sulfate	Insecticides	mg/kg	< 0.11	< 0.102
Endrin	Insecticides	mg/kg	< 0.0551	< 0.0509
EPN	Insecticides	mg/kg	< 0.11	< 0.102
Ethion	Insecticides	mg/kg	< 0.11	< 0.102
Ethoprop	Insecticides	mg/kg	< 0.11	< 0.102
Etridiazole	Fungicides	mg/kg	< 0.22	< 0.204
Europium-152		µCi/g	< 0.00000041500	< 0.00000043500
Famphur	Insecticides	mg/kg	< 0.22	< 0.204
Fenarimol	Fungicides	mg/kg	< 0.0551	< 0.0509

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
Fenitrothion	Insecticides	mg/kg	< 0.11	< 0.102
Fensulfothion	Insecticides	mg/kg	< 1.1	< 1.02
Fenthion	Insecticides	mg/kg	< 0.22	< 0.204
Fluchloralin	Herbicides	mg/kg	< 0.22	< 0.204
Fluoranthene	PAH	mg/kg	< 0.37	< 0.34
Fluorene	PAH	mg/kg	< 0.37	< 0.34
Fonofos	Insecticides	mg/kg	< 0.11	< 0.102
gamma-Chlordane	Insecticides	mg/kg	< 0.0551	< 0.0509
gamma-HCH {gamma-BHC, Lindane}	Insecticides	mg/kg	< 0.0551	< 0.0509
Heptachlor	Insecticides	mg/kg	< 0.0551	< 0.0509
Heptachlor epoxide	Insecticides	mg/kg	< 0.0551	< 0.0509
Hexachlorobenzene	SVOC	mg/kg	< 0.37	< 0.34
Hexachlorobutadiene	VOC	mg/kg	< 0.37	< 0.34
Hexachlorocyclopentadiene	SVOC	mg/kg	< 0.37	< 0.34
Hexachloroethane	SVOC	mg/kg	< 0.37	< 0.34
Indeno[1,2,3-cd]pyrene	PAH	mg/kg	< 0.37	< 0.34
Isazophos	Insecticides	mg/kg	< 0.11	< 0.102
Isofenphos	Insecticides	mg/kg	< 0.11	< 0.102
Isophorone	SVOC	mg/kg	< 0.37	< 0.34
Lead	Metals	mg/kg	< 10.8	< 9.78
Leptophos	Insecticides	mg/kg	< 0.11	< 0.102
Malathion	Insecticides	mg/kg	< 0.11	< 0.102
MCPA	Herbicides	mg/kg	< 5.0	< 5.0
MCPP	Herbicides	mg/kg	< 5.0	< 5.0
Mercury	Metals	mg/kg	< 0.0131	< 0.0117
Methoxychlor	Insecticides	mg/kg	< 1.1	< 1.02
Mevinphos	Insecticides	mg/kg	< 0.44	< 0.408
Mirex	Insecticides	mg/kg	< 0.0551	< 0.0509
Naphthalene	PAH	mg/kg	< 0.37	< 0.34
Nickel	Metals	mg/kg	28.1	29
Nitrobenzene	SVOC	mg/kg	< 0.37	< 0.34

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
N-Nitrosodimethylamine	SVOC	mg/kg	< 0.37	< 0.34
N-Nitrosodiphenylamine	SVOC	mg/kg	< 0.37	< 0.34
N-Nitrosodipropylamine	SVOC	mg/kg	< 0.37	< 0.34
o,p'-DDD	Insecticides	mg/kg	< 0.0551	< 0.0509
o,p'-DDE	Insecticides	mg/kg	< 0.0551	< 0.0509
o,p'-DDT	Insecticides	mg/kg	< 0.0551	< 0.0509
Oxadiazon	Herbicides	mg/kg	< 0.0551	< 0.0509
Oxychlordane	Insecticides	mg/kg	< 0.0551	< 0.0509
p,p'-DDD	Insecticides	mg/kg	< 0.0551	< 0.0509
p,p'-DDE	Insecticides	mg/kg	< 0.0551	< 0.0509
p,p'-DDT	Insecticides	mg/kg	< 0.0551	< 0.0509
Parathion-ethyl {Parathion}	Insecticides	mg/kg	< 0.11	< 0.102
Parathion-methyl	Insecticides	mg/kg	< 0.11	< 0.102
p-Bromophenyl phenyl ether	SVOC	mg/kg	< 0.37	< 0.34
p-Chlorophenyl phenyl ether	SVOC	mg/kg	< 0.37	< 0.34
Pentachloronitrobenzene	Fungicides	mg/kg	< 0.11	< 0.102
Pentachlorophenol	SVOC	mg/kg	< 0.37	< 0.34
Permethrin, trans-	Insecticides	mg/kg	< 0.44	< 0.408
Phenanthrene	PAH	mg/kg	< 0.37	< 0.34
Phenol	SVOC	mg/kg	< 0.37	< 0.34
Phorate	Insecticides	mg/kg	< 0.44	< 0.408
Phosmet	Insecticides	mg/kg	< 0.22	< 0.204
Picloram	Herbicides	mg/kg	< 0.05	< 0.05
Procymidone	Fungicides	mg/kg	< 0.22	< 0.204
Pronamide	Herbicides	mg/kg	< 0.44	< 0.408
Propazine	Herbicides	mg/kg	< 2.2	< 2.04
Propetamphos	Insecticides	mg/kg	< 0.11	< 0.102
Protactinium-234M		µCi/g	< 0.0000175	< 0.0000185
Protothiophos	Insecticides	mg/kg	< 0.22	< 0.204

Deployment OEH Risk Characterization, Soil and Associated Dust Samples, Bostick, Afghanistan, 30 Dec 09, U_AFG_BOSTICK_CM_SQA_20091230

DOEHRS Sample ID			00001R6B	00001R6C
Field/Local Sample ID			AFG_BOSTICK_09364_01S	AFG_BOSTICK_09364_02S
Site			Path next to medical treatment tent	Burn pit
Start Date/Time			2009/12/30 1450	2009/12/30 1000
Parameter	Class	Units	Concentration[1 2]	
Pyrene	SVOC	mg/kg	< 0.37	< 0.34
Ronnel	Insecticides	mg/kg	< 0.11	< 0.102
Selenium	Metals	mg/kg	< 10.8	< 9.78
Silver	Metals	mg/kg	< 2.16	< 1.96
Simazine	Herbicides	mg/kg	< 2.2	< 2.04
Strontium	Metals	mg/kg	162	39.8
Sulfotep	Insecticides	mg/kg	< 0.11	< 0.102
Terbufos	Insecticides	mg/kg	< 0.11	< 0.102
Tetrachlorvinphos	Insecticides	mg/kg	< 0.22	< 0.204
Thorium-234		µCi/g	< 0.0000020200	< 0.00000228
Total solids	Characteristic	%	90.8	98.2
Toxaphene	Insecticides	mg/kg	< 1.1	< 1.02
trans-Nonachlor	Insecticides	mg/kg	< 0.0551	< 0.0509
Trichloronate	Insecticides	mg/kg	< 0.22	< 0.204
Trifluralin	Herbicides	mg/kg	< 0.11	< 0.102
Uranium-235		µCi/g	< 0.000000757	< 0.0000010
Vinclozolin	Fungicides	mg/kg	< 0.22	< 0.204
Zinophos	Insecticides	mg/kg	< 0.11	< 0.102

[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
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
mg/kg = milligrams per kilogram
µCi/g = micro curies per gram
MCPP = meta-chlorophenylpiperazine
MCPA = 2-methyl-4-chlorophenoxyacetic acid
EPN = O-ethyl-O-4-(nitrophenyl)phenyl phosphonothioate