

**FACT sheet**  
**Burn Pits in Iraq, Afghanistan, and the Horn of Africa**

**NOTICE TO VA EXAMINERS**  
**VA Considers this Veteran Exposed to Burn Pit Toxins**

Large burn pits have been used throughout the operations in Iraq and Afghanistan to dispose of nearly all forms of waste. It is estimated that such pits, some nearly as large as 20 acres, are or have been located at every military forward operating base (FOB). The pit at Joint Base Balad, also known as Logistic Support Area (LSA) Anaconda, has received the most attention. The burned waste products include, but are not limited to: plastics, metal/aluminum cans, rubber, chemicals (such as, paints, solvents), petroleum and lubricant products, munitions and other unexploded ordnance, wood waste, medical and human waste, and incomplete combustion by-products. Jet fuel (JP-8) is used as the accelerant. The pits do not effectively burn the volume of waste generated, and smoke from the burn pit blows over bases and into living areas.

DoD has performed air sampling at Joint Base Balad, Iraq and Camp Lemonier, Djibouti. Subsequently, DoD has indicated that most of the air samples have not shown individual chemicals that exceed military exposure guidelines (MEG). Nonetheless, DoD further concluded that the confidence level in their risk estimates is low to medium due to lack of specific exposure information, other routes/sources of environmental hazards not identified; and uncertainty regarding the synergistic impact of multiple chemicals present, particularly those affecting the same body organs/systems.

The air sampling performed at Balad and discussed in an unclassified 2008 assessment tested and detected all of the following: (1) Particulate matter (PM-10) (and PM 2.5); (2) Polycyclic Aromatic Hydrocarbons (PAHs); (3) Volatile Organic Compounds (VOCs); and (4) Toxic Organic Halogenated Dioxins and Furans (dioxins). Each of the foregoing is discussed below.

Some of the PAHs that were tested for and detected are listed below. These results are from DoD testing from January through April 2007.

Acenaphthene	Acenaphthylene
Anthracene	Benzo(a)anthracene
Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(b)fluoranthene	Benzo(g,h,i)perylene
Benzo(k)fluoranthene	Chrysene
Dibenz(a,h)anthracene	Fluoranthene
Fluorene	Indeno(1,2,3-cd)pyrene
Naphthalene	Phenanthrene
Pyrene	

The following list reveals some of the VOCs that were tested for and detected at Balad. These results are from DoD testing from January through April 2007.

Acetone	Acrolein*
Benzene	Carbon Disulfide
Chlorodifluoromethane	Chloromethane
Ethylbenzene	Hexane
Hexachlorobutadiene*	m/p-Xylene
Methylene Chloride	Pentane
Propylene	Styrene
Toluene	

\* Acrolein and Hexachlorobutadiene were, although seldomly, detected far above the MEG ratio-once over 1800 percent above the MEG for Acrolein and over 500 percent above the MEG for Hexachlorobutadiene.

Below is a list of the dioxins and furans detected, all reportedly at low doses.

1,2,3,4,6,7,8 HPCDD	1,2,3,4,6,7,8 HPCDF
1,2,3,4,7,8,9 HPCDF	1,2,3,4,7,8 HXCDD
1,2,3,4,7,8 HXCDF	1,2,3,6,7,8 HXCDD
1,2,3,6,7,8 HXCDF	1,2,3,7,8,9 HXCDD
1,2,3,7,8,9 HXCDF	1,2,3,7,8 PECDD
1,2,3,7,8 PECDF	2,3,4,6,7,8 HXCDF
2,3,4,7,8 PECDF	2,3,7,8 TCDD
2,3,7,8 TCDF	octachlorodibenzodioxin
octachlorodibenzofuran	

For examination purposes, 22 of the VORs and PAHs, affect the respiratory system; 20 affect the skin; at least 12 affect the eyes; and others affect the liver, kidneys, central nervous system, cardiovascular system, reproductive system, peripheral nervous system, and GI tract. In at least seven, dermal exposure can greatly contribute to overall dosage. Therefore, when considering total potential exposure, please consider the synergistic affect of all combined toxins, primarily through inhalation and dermal exposure, but also through ingestion.

This information is not meant to influence examiners rendering opinions concerning the etiology of any particular disability; but rather to ensure that such opinions are fully informed based on all known objective facts. Therefore, when rendering opinions requested by rating authorities for a disability potentially related to such exposure, please utilize this information objectively and together with the remaining evidence, including lay evidence, in the Veteran's record.

Adjudication Authority

