



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

***Hazardous Waste Bureau***

**2905 Rodeo Park Drive East, Building 1**

**Santa Fe, New Mexico 87505-6303**

**Phone (505) 476-6000 Fax (505) 476-6030**

***www.nmenv.state.nm.us***



DAVE MARTIN  
Secretary

RAJ SOLOMON, P.E.  
Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

January 28, 2011

Colonel Robert L. Maness  
Base Commander  
377 ABW/CC  
2000 Wyoming Blvd. SE  
Kirtland AFB, NM 87117-5606

Mr. John Pike  
Director, Environmental Management Section  
377 MSG/CEANR  
2050 Wyoming Blvd., Suite 116  
Kirtland AFB, NM 87117-5270

**RE: SCREENING-LEVEL RISK EVALUATION FOR PETROLEUM  
HYDROCARBON FUEL COMPOUNDS IN SUBSLAB SOIL VAPOR – BULK  
FUELS FACILITY, KIRTLAND AIR FORCE BASE, OCTOBER 27, 2009  
KIRTLAND AIR FORCE BASE  
EPA ID# NM9570024423, HWB-KAFB-MISC**

Dear Col. Maness and Mr. Pike:

The New Mexico Environment Department (NMED) has reviewed the document “*Screening-level Risk Evaluation for Petroleum Hydrocarbon Fuel Compounds in Subslab Soil Vapor – Bulk Fuels Facility, Kirtland Air Force Base*” (Report), dated October 27, 2009. The Report documents the analysis of subslab soil-vapor samples collected at the Fuels Facility Office (Building 1032) and the 90-Day Hazardous Waste Storage Area (Building 1048). Results from the soil-vapor sampling were used to conduct a screening-level risk evaluation of indoor air quality at these two buildings.

The initial soil-vapor analytical results indicate subsurface contamination of sufficient volatility and toxicity, and concentrations that could potentially result in unacceptable indoor air inhalation risk for workers that occupy Buildings 1032 and 1048. Furthermore, modeling of the sampling results suggests that the exposure pathway to occupants in Buildings 1032 and 1048 may be complete which could lead to long-term exposure to vapor-phase contaminants. The Report concludes that additional data should be collected to more rigorously determine the air quality inside the buildings.

KAFB3551



The U. S. Air Force (Permittee) must therefore submit a work plan to perform direct measurement of indoor and ambient air using either multiple canisters or sorbent tubes. The vapor samples shall be analyzed using EPA Method TO-15. If sorbent tube sampling is used care shall be taken to assess the potential for interaction of target compounds with other reactive compounds such as ozone. The indoor air samples shall be collected on at least two separate occasions, and during the summer and winter to account for seasonal variability that may affect vapor intrusion. In addition, a survey of all buildings within 100 feet horizontally from or vertically above documented subsurface contamination shall be performed to assess if additional buildings should be included in the indoor-air sampling work plan.

The analytical results of the indoor air sampling must be used to construct a site-specific fate and transport model (such as the Johnson and Ettinger model) to assess the vapor intrusion pathway and to determine if exposures need to be mitigated. Key components of the model need to be justified with site-specific data including, but not limited to, the source (chemical constituents, concentrations, mass, phase distributions, depth and aerial extent), pathway (soil texture, moisture and layering) and building (building design, construction and ventilation). Model inputs and outputs shall be identified and appropriately justified.

The results of the vapor intrusion study shall be used to conduct an updated human health risk assessment for the residential land-use scenario. Updated toxicity values for constituents of concern, including TCE, shall be used if available.

Additional guidance to perform an evaluation of the potential for unacceptable indoor air quality is presented in the U. S. Department of Defense's *Tri-Services Handbook for the Assessment of the Vapor Intrusion Pathway, February 2008*.

The work plan must be submitted to NMED within ninety (90) days from the receipt of this letter.

If you have any questions regarding this matter, please contact Mr. Brian Salem of my staff at (505) 222-9576

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB  
W. Moats, NMED, HWB  
B. Salem, NMED HWB  
L. King, EPA-Region 6 (6PD-N)  
File: Reading and KAFB 2011