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TECHNICAL MEMORANDA

Williams, G.P., A.M. Hermes, A.J. Policastro, H.M. Hartmann, and D. Tomasko, *Potential Health Impacts from Range Fires at Aberdeen Proving Ground, Maryland*, ANL/EAD/TM-79, Argonne National Laboratory, Argonne, Ill. (March 1998). (Abstract)

Potential Health Impacts from Range Fires at Aberdeen Proving Ground, Maryland

This study uses atmospheric dispersion computer models to evaluate the potential for human health impacts from exposure to contaminants that could be dispersed by fires on the testing ranges at Aberdeen Proving Ground, Maryland. It was designed as a screening study and does not estimate actual human health risks. Considered are five contaminants possibly present in the soil and vegetation from past human activities at APG – lead, arsenic, trichloroethylene (TCE), depleted uranium (DU), and dichlorodiphenyltrichloroethane (DDT); and two chemical warfare agents that could be released from unexploded ordnance rounds heated in a range fire – mustard and phosgene. For comparison, dispersion of two naturally occurring compounds that could be released by burning of uncontaminated vegetation – vinyl acetate and 2-furaldehyde – is also examined. Data from previous studies on soil contamination at APG are used in conjunction with conservative estimates about plant uptake of contaminants, atmospheric conditions, and size and frequency of range fires at APG to estimate dispersion and possible human exposure. The results are compared with U.S. Environmental Protection Agency action levels. The comparisons indicate that for all of the anthropogenic contaminants except arsenic and mustard, exposure levels would be at least an order of magnitude lower than the corresponding action levels. Because of the compoundingly conservative nature of the assumptions made, we conclude that the potential for significant human health risks from range fires is low. We recommend that future efforts be directed at fire management and control, rather than at conducting additional studies to more accurately estimate actual human health risk from range fires.