Munitions Emissions Health Risk Assessment Program

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The U.S. Army Environmental Command (USAEC) leads and executes environmental programs and provides environmental expertise that enables Army training, operations, acquisition and sustainable military communities. USAEC supports the Army's mission of readiness and training by consistently integrating environmental compliance into all aspects of base operations; and promoting the well-being of Soldiers and Family members, civilian employees, and citizens of neighboring communities. Although USAEC's programs vary in subject matter and scope, each program is dedicated to furthering the Army's mission through environmental sustainability.

In collaboration with the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), USAEC developed a program to evaluate potential inhalation risks from munitions air emissions to residents living near Army training facilities. The Environmental Health Risk Assessment Program (EHRAP) is based upon gathering emissions data for a single munition and developing a Health Risk Assessment (HRA) to address concerns at a particular training site. Emissions data is being collected for more than 220 munition items, including Firing Point (FP), Exploding Ordnance (EO) and Smoke and Pyrotechnics (SP).

As part of the program, individual items are tactically fired in a closed training facility at the U.S. Army Aberdeen Test Center (ATC) and the West Desert Test Center (WDTC). Once an item is fired, USAEC collects emission data using state-of-the-art sampling techniques. This allows for over 280 chemical species and particulates to be carefully monitored to determine if they are present, and if so, in what quantity. Testing and sampling procedures for each series of tests are outlined in a detailed test plan that is written in coordination with the U.S. Environmental Protection Agency (EPA) Emissions Measurement Center, Office of Air Quality Planning Standards.

After the emissions data is collected, USACHPPM uses an air dispersion model to determine ambient air concentrations at locations downwind from a hypothetical training site. Modeled air concentrations are combined with a typical use scenario to

For more information

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estimate the amount of each substance a hypothetical off-site residential population breathes. Air concentrations are time-adjusted for both acute and chronic exposure, and are compared with health-based screening levels. Exposures are based on a residential population most likely to be affected. This consists of both adults and children living 100 meters away; directly downwind; under worst-case meteorological conditions; with the wind constantly blowing toward the exposed population 350 days a year. Conservative model input data is used so that results can be applicable to most training facilities.

Since these studies are not modeled after any one existing training facility, conservative model input data are used so that the results are generic enough to be applicable to most facilities that use these munitions.

Health Risk Assessments indicate there is minimal, if any, potential inhalation risk to off-site residents.