Restoration Advisory Board Fact Sheet

The Relative Risk Evaluation: A Tool to Help Set Priorities

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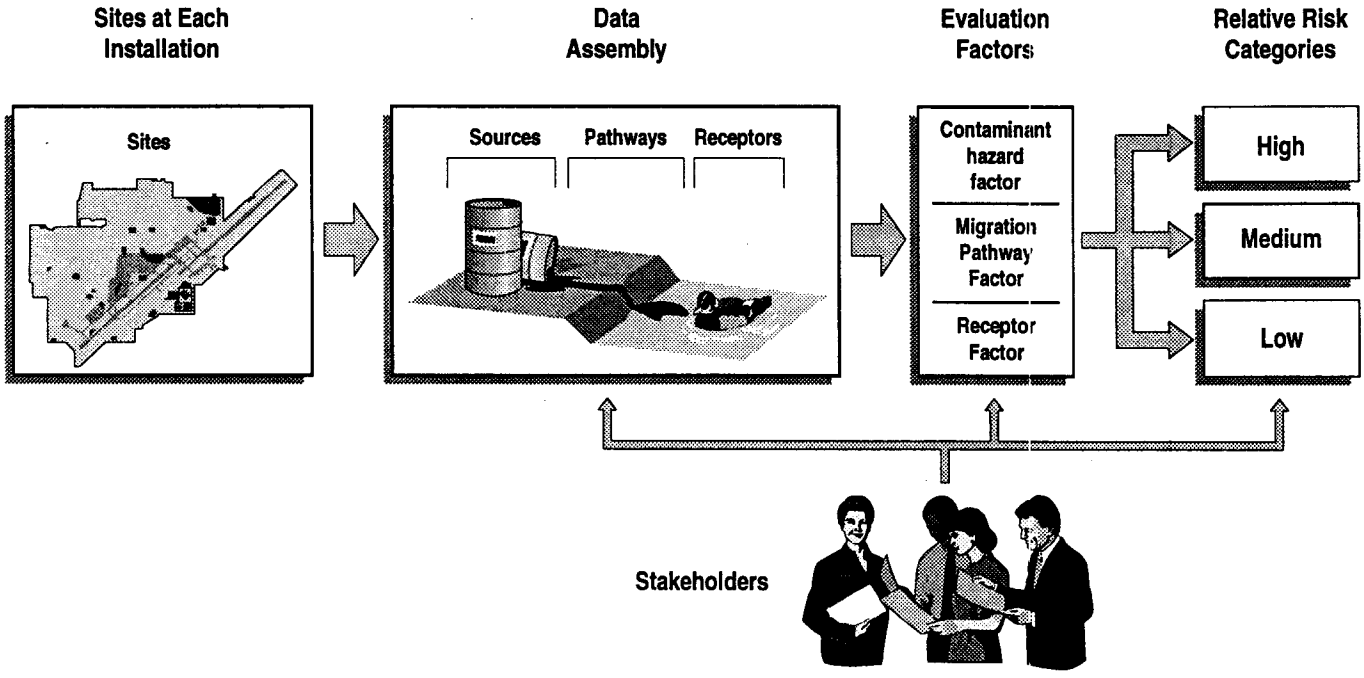
This fact sheet is one of a series prepared for RAB members about the Travis Air Force Base (AFB) Installation Restoration Program (IRP).

The Department of Defense (DoD) is currently faced with the challenge of cleaning up the sites at all of its installations while at the same time reducing its overall budget. To help set priorities for which sites and installations should be cleaned up first, in 1994, the DoD began conducting a ***relative risk evaluation*** of all the sites at its installation. A site for this evaluation is a discrete area where hazardous substances or petroleum products may have been disposed or released as a results of past DoD activities. In the near future, RAB members will be asked to provide their opinions on the relative risk ranking of sites at Travis AFB.

It should be emphasized that the relative risk evaluation is a screening tool to assess relative risks at sites throughout the DoD (including the Air Force, Army, Navy, and Marines). The relative risk evaluation does not address the decision of whether remedial work is necessary. Neither is it a risk assessment; that is, it does not quantify any risks that might be posed by particular contaminants to particular receptors.

Figure 1. The Relative Risk Evaluation Concept



Rather, it only provides information on the relative risk of each site compared to all the others. This information will be used to help determine the order in which sites are addressed.

BACKGROUND

In 1984, Congress established the Defense Environmental Restoration Program (DERP) to evaluate and clean up contamination resulting from past DoD activities. The primary goal of DERP is to protect human health and the environment from risks posed by sites potentially contaminated from past activities. Restoration programs conducted under DERP must be consistent with the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and Executive Order 12580.

Since 1984, the DoD has identified about 20,000 potentially contaminated sites at some 1,700 installations and about 8,000 potentially contaminated sites at formerly used DoD installations in the United States. Travis AFB is responsible for 27 of these sites. Environmental restoration activities to date have already reduced the number of DoD sites needing work to about 10,000. Of these remaining sites, about 60% are contaminated with fuels and solvents. Another 30% contain such wastes as metals, explosive compounds, caustic cleaners, dyes, paints and strippers. The final 10% contain other types of wastes.

To make best use of increasingly limited resources, the DoD is developing the relative risk evaluation. This way, all DoD sites will be evaluated by the same method, and decisions can be made about which sites to address first. These decisions will be made using both the relative risk ranking and any already established legal agreements (such as Federal Facilities Agreements). Limited DoD resources may then be more appropriately allocated.

RELATIVE RISK EVALUATION: A SUMMARY

The relative risk evaluation generates a rating of high, medium, or low for each site at an installation. To evaluate a site, installation personnel most familiar with the site gather all information available to date. Only sites with reliable analytical data are evaluated. Information on contaminants, migration pathways, and human or ecological receptors at each site are rated using three factors: the ***contaminant hazard factor (CHF)***, the ***migration pathway factor (MPF)***, and the ***receptor factor (RF)***. The contaminant hazard factor is based on the concentrations of contaminants known to be at the site. The migration pathway factor evaluates the likelihood of the contaminants migrating away from the site. The receptor factor evaluates the likelihood of humans or animals being exposed to the contaminants. Each factor is rated high, medium, or low. The combination of ratings for each factor, in turn, generates a rating for each medium (groundwater, surface water/ sediment, or surface soil). The highest ranking for any medium becomes the rating for the site. Figure 1 illustrates this approach.

The relative risk evaluation uses site information gathered from all investigations conducted to date, installation personnel, and knowledgeable members of the public and regulatory community at each installation. A site's rating may change based on new or additional information or as a result of cleanup activities.

Sites where reliable contaminant data have not been collected are designated as "not evaluated" and will then be deferred and programmed for additional data collection or other appropriate response action before they are evaluated. DoD representatives will proceed through each of the steps in Figure 1 and work with the public and regulatory community to rank all the sites at Travis AFB. The results of the site evaluations will be used by the Travis AFB team, and in conjunction with regulatory agreements, to assist in the prioritizing of remedial work.