

## **Challenges Presented by Remediation of the Linde FUSRAP Site**

**Abstract for USACE Environmental Development Workshop  
Portland, OR, April 16-20, 2001  
Fred Boglione, U.S. Army Corps of Engineers, Buffalo District  
phone: (716) 879-4190, fax: (716) 879-4355,  
Email: [fredrick.l.boglione@usace.army.mil](mailto:fredrick.l.boglione@usace.army.mil)**

The U.S. Army Corps of Engineers (USACE), Buffalo District is responsible for action under the Formerly Utilized Sites Remedial Action Program (FUSRAP) within its jurisdictional boundaries. The former Linde Site is one of the sites currently being addressed under this program. The site is now owned by Praxair Inc. and serves as a worldwide research and development center. It comprises about 135 acres in the Town of Tonawanda, NY and is used for office and research laboratory activities. Approximately 1400 employees currently work at the Praxair facilities. Elevated levels of radionuclides at the Linde Site resulted from the separation of uranium ores at the property from 1942 to 1946 under a Manhattan Engineer District (MED) contract. The CERCLA process has resulted in an Interim Removal Action and Feasibility Studies, Proposed Plans and Records of Decision for several operable units at this site.

Several issues arose during the development of the Record of Decision for Site Soils due to extensive involvement by regulatory agencies and stakeholders. Cleanup criteria were a major point of discussion, which needed to be resolved. Remediation is currently underway with a cost estimate of approximately \$33 million.

Building 14 was used for laboratory and pilot plant studies for uranium separation in the early part of MED activities. DOE/USACE conducted decontamination efforts and a Feasibility Study Addendum and Proposed Plan are now being prepared for release. The issues that have surfaced with this operable unit are focused on the current owner's involvement and input.

The Groundwater operable unit is currently in the investigation phase. Additional groundwater sampling wells have recently been installed. The major concern is the effect of deep well injection of 55 million gallons of MED effluent.

Building 30 was demolished under an Interim Removal Action. This required development of an Engineering Evaluation/Cost Analysis (EE/CA). The action was completed in 1998/1999. After completion, the Assistant Secretary of the Army (Civil Works) asked the U.S. Army Audit Agency (AAA) to determine if the Corps had taken appropriate actions at both the Linde Site and one of the disposal facilities, if those actions were protective of human health, safety and the environment, and if they were consistent with applicable Federal, State and local requirements. All findings were positive, indicating the Corps took appropriate remedial and disposal actions concerning waste disposal.

This presentation will address actions/issues/lessons learned at each of the operable units as well as the interim action and AAA audit details.

