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EMSL In Brief
Environmental Molecular Sciences Laboratory

EMSL to Support $27.5-Million Uranium Transport Field Study

Resources at the Department of Energy's (DOE's) Environmental Molecular Sciences Laboratory (EMSL) will help support a $27.5-million dollar effort by the Pacific Northwest National Laboratory (PNNL) to investigate the movement of contaminated groundwater at sites in Richland, Washington, and Rifle, Colorado.

A multi-institution study funded by DOE at the Hanford Site will help establish new strategies in developing remediation efforts at the site.

DOE's Office of Science granted the funding over a 5-year period to multi-institution investigators to study the uranium-contaminated groundwater and vadose zone at the Hanford Site north of Richland, adjacent to the Columbia River. In addition, at a uranium mill tailings site in Rifle, a team of researchers will examine the stimulation of subsurface microorganisms aimed at reducing and immobilizing uranium in the subsurface.

EMSL capabilities such as Mössbauer spectroscopy, transmission and scanning electron microscopies, laser fluorescence spectroscopy, and subsurface flow and transport instruments will be used to support a portion of the study. Participants will include researchers from PNNL, the United States Geological Survey, Oregon State University, Purdue University, the University of Alabama, the University of California-Berkeley, and Lawrence Berkeley, Los Alamos, and Idaho national laboratories.

The Hanford Site study will complement DOE's investments to investigate an innovative cleanup approach for uranium and is expected to help develop transport models that will be applicable to contaminant movement along the entire Columbia River corridor. It will also help to provide important data to support future decision making for environmental remediation. In the Rifle study, researchers look forward to initial analysis of microbial protein expression during field-scale bioremediation. These data will make it possible to learn what nutrient factors are most important for achieving maximum rates of uranium reduction and removal from groundwater.

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