

NE-26-40450 Utilization of Apatite Group Minerals for In Situ Precipitation of Radionuclides and Metals from Groundwater

Ur-Energy USA Inc., headquartered in Casper, WY, is a U.S. uranium mining company focused on in-situ recovery (ISR) operations. The company's mission is to expand domestic uranium production while reducing costs and improving safety and environmental performance.

Ur-Energy seeks to improve groundwater restoration following ISR uranium mining, a process that can take years and add significant costs to uranium production. The company is developing an apatite-based treatment method to more efficiently sequester heavy metals and radionuclides, potentially reducing restoration time, costs, and environmental impacts.

Ur-Energy will work with Pacific Northwest National Laboratory (PNNL) and their extensive experience developing and deploying apatite-based groundwater remediation technologies at DOE sites including Hanford, Rifle, Moab, and Durita to perform testing of selected formulas to determine the ability to sequester heavy metals for mine water restoration. PNNL possesses both scientific expertise and specialized laboratory instrumentation—such as SEM, X-ray diffraction, Raman spectroscopy, and radiological handling capabilities—needed to optimize apatite formulations for uranium mine groundwater restoration. In addition, PNNL has the regulatory authority and experience to safely receive and analyze radioactive source and byproduct materials that most commercial laboratories cannot accommodate. Successful development of the apatite treatment method would lower uranium production costs while providing long-term environmental protection and making U.S. uranium production more globally competitive.