

# Uranium mining legacy issues in Utah: Assessment and remediation of previous impacts

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INSCC Auditorium

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Several thousand abandoned uranium (U) waste-dumps exist throughout the state of Utah, with many of these sites located on Federal lands managed by the Bureau of Land Management. These abandoned waste dumps present unique characteristics that make it difficult to identify non-point source pollution contributions to the specific watersheds. These characteristics include: (1) located primarily in watersheds with ephemeral drainages; (2) waste-dump materials are radioactive for thousands of years; (3) intense rainfall and snowmelt events can mobilize and transport radioactive material and associated trace elements long distances over relatively short time periods; and (4) remote locations do not allow for cost effective water and suspended sediment sampling during storm and snowmelt runoff events. Once identified, potential clean-up technologies that may be applied to U legacy properties in Utah include permeable reactive barriers (PRBs). Although PRBs may represent a cost-effective technology for removal of U and other contaminants from ground water in remote settings, little is known about the effects of aging on the hydrology and biogeochemistry of PRBs. Long-term hydrologic and biogeochemical data have been collected from a PRB installed in a U-contaminated aquifer near Fry Canyon, Utah, and operated continuously from September 1997 thru 2006. During this period, more than 99 percent of the input U was removed from the ground water.