USGS

WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002WI4B

Title: Removal of Arsenic in Groundwater Using a Novel Mesoporous Sorbent

Project Type: Research

Focus Categories: Treatment, Toxic Substances, Water Quality

Keywords: arsenic, groundwater treatment, contaminated water supply, nonpoint-source pollution, Wisconsin

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: $34,314

Non-Federal Matching Funds: $28,769

Congressional District: WI - 2nd

Principal Investigator:
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Abstract

Throughout the world, arsenic is creating potentially serious environmental problems for man and other living organisms. Most reported arsenic problems in water supply systems have been found in groundwater, usually the drinking water source in rural areas. Approximately 35% of drinking water wells in Wisconsin contain > 5 mg/L of arsenic. The mesoporous mixed-oxide coating media will be developed for oxidation and adsorption treatment of arsenic using the sol-gel technique. The oxidation and adsorption process will be controlled for the effective removal of arsenic compounds based on the characteristics of the arsenic contamination in the groundwater, such as concentration ratio and total quantity of arsenite and arsenate, pH, temperature, and ionic strength. A series of column tests will be performed to remove arsenic in the groundwater using mesoporous mixed-oxide coating media.