



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2003NE36B

**Title:** Assessing the occurrence of Arsenic in groundwater: Implications for Small Water Supply Systems in Nebraska

**Project Type:** Research

**Focus Categories:** Water Quality, Groundwater, Geochemical Processes

**Keywords:** Arsenic, Public Water Supplies

**Start Date:** 04/01/2003

**End Date:** 03/31/2004

**Federal Funds:** \$15000.00

**Matching Funds:** \$39890.00

**Congressional District:** 1

**Principal Investigators:** Gosselin, David C. (University of Nebraska-Lincoln); Harvey, F.

**Abstract:** The U.S. Environmental Protection Agency has lowered the maximum contaminant level (MCL) for As from 50 ug/L to 10 ug/L. According to the Nebraska Department of Health and Human Services, more than 78 public water supply (PWS) systems in Nebraska, most serving less than 3,300 people each, will have As concentrations above the MCL. The long-term goal of our research is to reduce the economic impact of arsenic regulations on public water supply systems by providing a less costly option for achieving compliance with the 10 ug/L MCL. We will investigate an As remediation strategy that employs well hydraulics and pumping strategies to control As concentrations in PWS wells. If this alternative is viable, a dramatic reduction to As exposure could be achieved at reasonable cost. Our specific The goal of this project is to improve our understanding of As in Nebraska's groundwater and apply this knowledge to mitigating the impact of As on PWS. To assess this strategy, a detailed understanding of the occurrence, distribution and sources of As in groundwater is required. The specific objectives of this state-wide project are: 1. Determine the chemical form in which the arsenic occurs in groundwater; and 2. Determine the geological and geochemical factors that control the occurrence of arsenic. This project will provide important geochemical data that will complement our current state-wide efforts to help PWS mitigate their As problems. The conceptual model we develop for As behavior

will provide the foundation for developing recommendations for water quality management. The conclusions of this project and its approach, as well as the implementation of recommendations from our EPA-funded project, should be transferable to other small PWS systems nationwide.

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