



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002UT1B

Title: Source Water Protection Assessment Tools Development

Project Type: Research

Focus Categories: Water Quality, Hydrology, Models

Keywords: Drinking Water, Watersheds, Pollutant Transport

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: \$56,510

Non-Federal Matching Funds: \$112,351

Congressional District: UT1

Principal Investigators:

Ronald C. Sims
Utah State University

Darwin L. Sorensen
Utah State University

Abstract

A computer-based tool to assist in determining the susceptibility of drinking water sources to contamination is being developed. The tool improves the use of scientific information and professional experience in the susceptibility assessment process. The work proposed here is a continuation of a research project addressing this topic. Considerable progress has been made in designing and programming the assessment tool. The tool will incorporate a probabilistic network methodology for integrating watershed information to evaluate the susceptibility of Utah drinking water sources to unacceptable contamination. Specific practical objectives are to:

- 1) Integrate ground water pollutant transport simulation with the existing surface water transport model to provide an estimate of conjunctive pollution potential.
- 2) Design and integrate a Bayesian Belief Network methodology into the pollutant transport simulation system that will allow the user to evaluate the potential for contamination to occur based on a range of hydrologic conditions, the probability of accidents occurring, and a distribution of pollutant contamination concentration at the source.
- 3) Conduct a one-day workshop for drinking water source managers in Utah and the intermountain region. The assessment tool will be introduced, basic instruction on the concepts and processes used to develop the tool will be presented, and hands-on practice in the use of the tool will be facilitated.