**WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID**: RI2161

**Title**: Membranes for Gyclodextrin Enhanced Removal of Toxics from Groundwater

**Focus Categories**: Toxic Substances, Groundwater

**Keywords**: groundwater, contaminants, membranes, cyclodextrins

**Start Date**: 03/01/2001

**End Date**: 02/28/2002

**Federal Funds**: $29,552

**Non-Federal Matching Funds**: $59,189

**Congressional District**: RI 2

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**Abstract**

Dense zones of non-aqueous liquids, such as chlorinated organic compounds, are a long-term source for groundwater contamination. Water flushing and pump-and-treat methodologies remove contaminants slowly. Chemical agents can be added to increase the solubility and hence removal rate of the organic compounds. Cyclodextrins have been proposed as flushing agents because they entrap the contaminants for in-situ removal techniques. While proposed for dense concentrations, this study will also examine the role of cyclodextrins as a collectable scavenging agent. The key to the proposed process is the separation of contaminant-laden cyclodextrins from the water and the removal of the contaminants from the cyclodextrins so that the flushing agent can be recycled. A dual membrane process is to be studied as a solution. The focus will be on optimizing membrane choices in this one-year study. Results are expected to be used later in field trials.