



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2003ND28B

**Title:** A Study of Microbial Regrowth Potential of Water in Fargo, North Dakota and Moorhead, Minnesota

**Project Type:** Research

**Focus Categories:** Water Supply, Treatment, Water Quality

**Keywords:** Microbial regrowth potential, Biodegradable dissolved organic carbon, Assimilable organic carbon

**Start Date:** 03/01/2004

**End Date:** 02/28/2005

**Federal Funds:** \$9,690

**Non-Federal Matching Funds:** \$19,381

**Congressional District:** 1

**Principal Investigator:**

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**Abstract**

In recent years, water quality scientists and engineers have emphasized on the biodegradability of dissolved organic matter in both raw and treated waters. This is because the biodegradable organic matter (BOM) in treated water can induce the growth or regrowth of microorganisms in the distribution system of drinking water. Residual BOM is usually the most important limiting factor responsible for bacterial regrowth in the water distribution system (Rittmann and Snoeyink, 1984). One of the most effective methods in controlling the bacterial growth in the distribution system is to limit the amount of BOM required for the growth of heterotrophic bacteria in treated water (Servais et al., 1993). Water containing BOM less than a minimum concentration that supports the bacterial growth is usually biologically stable. The regrowth potential of water in Fargo, North Dakota and Moorhead, Minnesota has never been evaluated. The goal of this study is to examine the concentrations of these two parameters in treated water provided by the Fargo and Moorhead water treatment plants. Collecting BDOC and AOC data is a first step to achieve the ultimate goal. The data will also indicate the degree of susceptibility of drinking water of Fargo and Moorhead to microbial

proliferation. The study will benefit the cities in limiting the number of microorganisms in tap water if necessary.