EXHIBIT 5
DATE 1/20/05
HB 6, 8

Critical Resource Assessment, Alluvial Aquifers of Northern Big Horn County

A Renewable Resource Grant Proposal

Issues:

- Residents of northern Big Horn County are dependent on thin, shallow deposits of alluvial sand and gravel as the primary source of ground water. Ground water is the only source of potable water outside the city of Hardin.
- Ground water in the sand and gravel deposits is recharged primarily by flood irrigation and ditch leakage. Decreases in recharge due to drought, changes in irrigation practices, or land use can have significant affects on ground water.
- The alluvial ground water is shallow and vulnerable to contamination.
- Ground-water information, including water-quality data, for the northern Big Horn River valley is very scarce. There have been no previous ground-water investigations, and no anticipated aquifer assessment by other programs in the foreseeable future. Obtaining these data will be essential for planning and management of this critical and increasingly scarce resource.

The Proposed Project:

The ongoing drought is impacting the shallow ground-water system of northern Big Horn County, and changes in irrigation practices and land use will likely have an even stronger impact in the near future. The purpose of this project will be to collect critical data to evaluate and manage those impacts (Figure 1).

Project tasks:

- Conduct a comprehensive inventory of wells, springs and streams.
- Sample for water-quality constituents and for hydrologic tracers.
- Install and monitor test wells to obtain aquifer parameters and detailed water level fluctuations.
- Install and monitor soil moisture probes to further evaluate irrigation percolation rates.

Project products:

- Detailed maps of aquifer distribution and ground-water availability, ground-water flow, drilling depths, ground-water quality, and nitrate concentrations.
- A comprehensive report describing the activities and findings of the project will be made available publicly as an MBMG publication.
- All data will be available through the MBMG's GWIC database. Public meetings will be held periodically to disseminate project information and to gain input and identify concerns.

Project Setting
Critical Resource Assessment
Alluvial Aquifers of Northern Big Horn County