

The **Ground Water Investigation Program (GWIP)** answers locally identified, site-specific water resource questions prioritized by the Montana Ground Water Steering Committee (MCA 85-2-525). As mandated by the Montana Legislature, GWIP conducts research on the most urgent water issues in the State.

Development in the Tobacco Valley is increasing the demand for water. Balancing water management, development, and conservation requires a thorough understanding of how groundwater aquifers and surface waters interact. These processes are complex in the Tobacco Valley due to the highly variable nature of the glacially derived valley fill sediments. In particular, a more detailed understanding is needed of where new groundwater pumping would be likely to deplete stream flows in the Tobacco River.

**Purpose:**

Understand how groundwater development will affect the availability of groundwater and surface water in the Tobacco Valley.

**Data Collection:**

- Monitor groundwater levels in a network of wells.
- Measure stream flow to determine where streams gain water from, or lose water to the aquifer.
- Install wells to refine models of the distribution of aquifers and aquitards, to allow monitoring in areas with no available wells, and to evaluate hydrologic connections between aquifers and surface water.
- Conduct aquifer tests to refine estimates of aquifer properties.

**Products:**

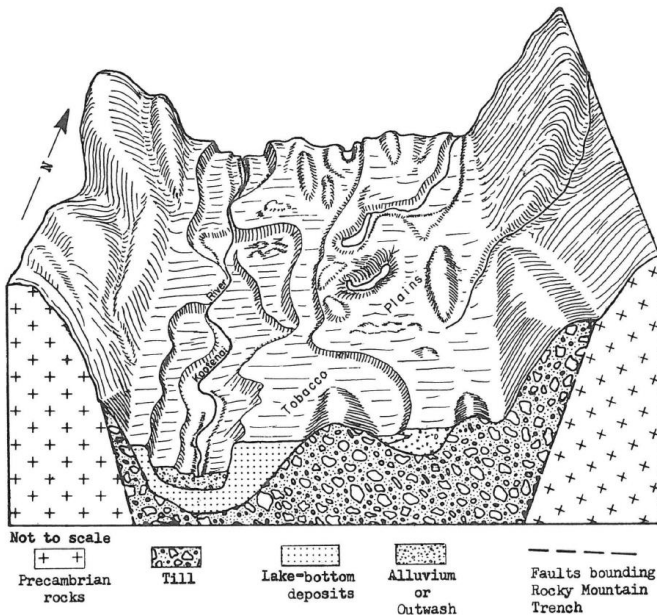
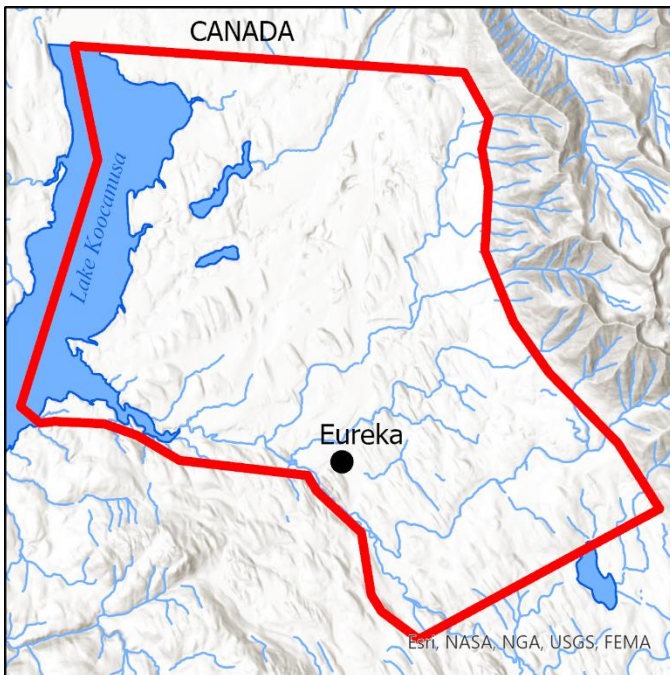
1. A report describing the aquifers and the groundwater/surface-water connections.
2. A groundwater numerical flow model to use as a management tool, and that evaluates increased groundwater development on the area aquifers and surface waters.

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*Schematic cross section across the Tobacco Valley (from Coffin and others, 1971).*