

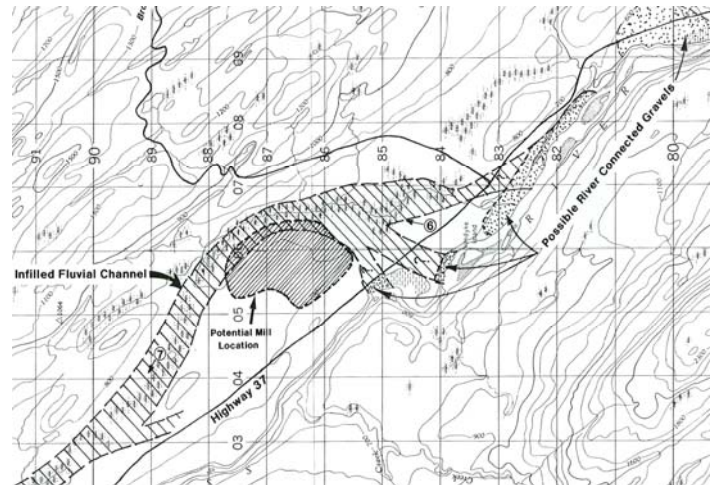
Orenda Forest Products Limited Regional Water Supply Investigation British Columbia, Canada



Orenda Forest Products Limited proposed the construction of a groundwood pulp mill situated in northwestern British Columbia, near the coastal community of Stewart. However, a primary constraint in the selection of a mill site was the long-term availability of a water supply.

To determine the feasibility of developing a sustainable water supply, a regional ground water investigation was required. The investigation was designed and undertaken in three stages:

1. Geologic and Air Photo Review
2. Geophysical Survey
3. Detailed Ground Water Assessment
 - Test Hole and Pilot Well Construction
 - Aquifer Test Program
 - Water Balance Analysis



The geologic and air photo analyses identified three overburden deposits in which ground water supply appeared favorable. A subsequent geophysical survey, involving seismic and resistivity techniques, was used to further define a deep, infilled, glaciofluvial channel. This glaciofluvial channel was the overburden deposit believed to have the greatest potential for a long-term water supply. Consequently, six test holes and one pilot well were constructed in this infilled channel. Pilot well installation and testing was performed over a one-month period. Subsequent predictive hydraulic analyses and 2-D analytical modeling were used to assess the impact of long-term pumping on the water table.

Effective management of a ground water supply requires that a balance be maintained between the volume of water removed from the aquifer and the amount of water recharging the aquifer. A critical component of the final water supply investigation was to complete a water balance analysis to ensure the long-term availability of the water supply. The water balance analysis confirmed the availability of water supply for the mill site.

PROJECT HIGHLIGHTS:

- ✓ **Project completed on schedule and within budget.**
- ✓ **Integrated a variety of techniques (air photo interpretation, geophysics, aquifer testing, predictive analyses and ground water modeling) to successfully find and develop a 1,000 gallon per minute water supply.**
- ✓ **Completed a complex water balance analysis to ensure the sustainability of the water supply.**

