



Bingham and Pine Canyon-Parvenu Tunnel Inspections Rio Tinto Kennecott Utah Copper

Location: Bingham Canyon Mine - Salt Lake City, UT

Date: 2014

Structure: Water Conveyance Tunnels

Length: Bingham Tunnel - 7,660 feet (2,335 meters)
Parvenu Tunnel - 7,460 feet (2,275 meters)

Cross-Section: Bingham Tunnel: From 12 to 20 feet (3.7 to 6 meters) at springline
Parvenu Tunnel: From 7 to 12 feet (2 to 3.7 meters) at springline

Geology: Tertiary Volcanics and Latite Porphyry, with variable alteration

Client: Rio Tinto Kennecott Utah Copper

Owner: Rio Tinto Kennecott Utah Copper



Figure 1. Overview of Bingham Canyon Mine.



Figure 2. Portal of Bingham Tunnel.

Mining Tunnel Inspection Services:

The Bingham Canyon Mine is an open pit copper mine near Salt Lake City, Utah, USA, and is operated by the Rio Tinto subsidiary Kennecott Utah Copper (RTKUC). Historically, the area around the Bingham Canyon mine is a historic mining district dating back over 100 years. Several old underground mines exist in and around the open pit area. Some of the old tunnels of these mines are utilized by RTKUC for purposes other than mining.

These legacy tunnels are approximately 1.5 miles in length each. The Bingham Tunnel was driven in the early 1950's while the Parvenu Tunnel was mined in early 1900's. The tunnels have varying geometries with widths ranging from 7 feet to 12 feet and heights from 7 feet to 20 feet.

Gall Zeidler Consultants (GZ) was commissioned by RTKUC to inspect the Bingham tunnel and Pine Canyon-Parvenu tunnel, prepare a report of findings regarding the condition of the existing ground support, and develop a ground control management plan that included a risk assessment regarding ground hazards and the support modifications required to upgrade the tunnel to comply with the Safety Standards. The results of these efforts were utilized for the development of a feasibility study to estimate the costs for tunnel rehabilitation. Both tunnels are used for dewatering and depressurization of the pit walls and their continuous functionality is critical for the unimpeded operation of the mine.