

FILE NOTE**Re: Inspection of the Grum Underground Exploration Ramp**

An inspection of the Grum Ramp was carried out on Tuesday, August 20, 1996 by the following Anvil Range staff:

Derek Davies, Senior Occupational and Safety Advisor
Harold Foster, Foreman
Fritz Prugger, Project Manager

The purpose of the inspection was to observe general conditions of the Grum ramp to use the findings as an aid in predicting ground conditions in the proposed Blind Creek ramp.

The Grum ramp was constructed by Canadian Mine Development (CMD) in the late 1970's to explore the Grum deposit from underground. It dips at about 15% and has a cross section about 5.0m wide and by 5.5m high, with an arched back. As it curves to the North, the shape of the roof follows the foliation of the phyllites. The inspection was carried out from the portal to the water level in the ramp at elevation 1192m, a distance of some 600m.

The portal is closed off by a steel screen. Access is through a steel door, which is normally locked. Of the two existing keys one is in the office of the chief mine engineer, the other is at security.

The first 75m of the ramp, where it passes through glacial till, are lined with a corrugated steel culvert. The immediate contact between the culvert and the bedrock is shotcreted. Shotcrete is also used in some places along the walls. Back support consists of rebar bolts with either steel plates, or steel straps about 10 inches wide. The steel plates and steelstraps do not show any sign of pressure or movement of rock.

In two places the ramp goes through a fault where heavy steel arches with wooden lagging and cribbing form the support. Loose material has entered the ramp at these two places.

A section of corrugated steel (about 3ft x 2ft) has been cut out of the culvert. At this point, loose material has also entered the ramp. Except for the three places mentioned above, the ramp is in excellent condition. No loose could be observed along the back or the walls. Not even blasting in the nearby open pit has affected ground conditions in the ramp.

The floor of the ramp consists of fine silt, and is slippery. Air conditions are excellent. Oxygen content is 20.6 to 20.7%. No Carbon Monoxide was observed.

Thickness of overburden is considerably greater at Blind Creek than at Grum. Consequently, higher pressure will have an effect on ground conditions there.

A handwritten signature consisting of the letters 'F' and 'P' in a cursive, stylized font. The 'F' is on the left and the 'P' is on the right, with a small horizontal line under the 'P'.