

Cowboy tungsten property, Pine Grove Hills, Lyon County, Nevada

By M. R. Klepper

In March 1943 the Cowboy tungsten claims were examined briefly by M. R. Klepper of the Geological Survey, United States Department of the Interior. In October, 1943, M. R. Klepper and Peter Joralemon spent a week mapping and studying the deposit.

The Cowboy claims, 25 miles due south from Yerington, are reached from Wellington by following the Dalzell Canyon road 12 miles southeast to Wiley, then turning 5 miles east on the Sand Canyon road. They are in the Wellington quadrangle, approximately in T. 9 N., R. 24<sup>25</sup> E. Scheelite was discovered by Drew Wilson and Norman Annett, who shipped 10 tons of ore to the Toulon mill in 1941, and 112 tons averaging 0.79 percent of  $WO_3$  (88 units) to Metals Reserve Co. at Salt Lake City in 1943. In 1943, workings consisted of 2 short adits with a total length of 300 feet, and numerous trenches and pits.

Bedrock exposures in the area are poor, and contacts are obscured by talus and soil mantle. Tactite containing scheelite has been found at widely separated localities in an arcuate contact-metamorphic zone that extends for a length of about 1.5 miles. The exploratory work done is not sufficient to prove that any of these tactite outcrops are parts of large ore bodies.

The tactite is irregularly developed in a fairly continuous band of marble 25 to 75 feet wide. The marble band is invaded irregularly from the west and south by quartz monzonite which contains many inclusions of schist and hornfels in masses as

large as 150 feet long and 50 feet wide. These inclusions do not appear to be rotated by the quartz monzonite invasion, and the bedding in them is roughly parallel to bedding in the marble. The east side of the marble layer is in contact with gneissic quartz diorite. The contact is conformable with the marble, although the quartz diorite is intrusive into the marble. In places the quartz monzonite cuts through the marble and extends into the quartz diorite.

The most extensive mineralization appears to be on the Cowboy No. 5 and No. 6 claims in the central part of the contact belt. The principal exploratory work has been done in this area. For a distance of 1,000 feet thin layers of tactite occur irregularly along both sides of the marble band, and in places near dikes or faults larger masses of tactite extend all the way across the marble. In general the tactite masses appear small and lenticular. The content of  $WO_3$  is variable and ranges from nothing to 1.0 percent. The average content in minable bodies is 0.4 to 0.6 percent.

The scheelite is fine-grained, and fluoresces pale yellow, suggestive of an appreciable molybdenum content. It is accompanied by rosettes of powellite pseudomorphous after molybdenite.

No significant estimate can be made as to the extent of the deposits until they have been explored more intensively.

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This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.