

MEMORANDUM ON BLACK MOUNTAIN SPODUMENE DEPOSIT, BLACK MOUNTAIN, NATRONA
COUNTY, WYOMING

The Black Mountain spodumene deposit, filed on as "Spodumene No. 4" claim, in the name of Jake Stephensen, is located in the southeast quarter of section 36, T. 33 N., R. 89 W., Natrona County, Wyoming. The locality is 70 miles air line north of the town of Rawlins, 60 miles air line west of Casper, and can be reached only by unimproved ranch roads. U.S. Highway 20, an oiled road, passes 18 miles to the north.

Black Mountain is a knob of pre-Cambrian basic igneous and metamorphic rocks cut by quartz, granite, and pegmatite dikes, and is partially buried by Oligocene tuff beds, along the northern margin of the Granite Mountains in central Wyoming. Strongly folded Paleozoic and Mesozoic rocks are exposed six miles north and north-west of the spodumene locality.

The strike of the foliation in the schists is nearly east-west, and the pegmatite, granite, and quartz dikes were intruded nearly parallel to this strike. Some trend slightly north of east and some slightly south, and all are thin, commonly not more than 20 feet thick. The schists dip 60° - 80° S. and the dikes are either nearly vertical or dip steeply to the south.

The spodumene dike strikes east-northeast and can be followed for about 250 feet. The northeastern part of the dike is obscured by alluvium and the southwestern end is not well defined. Not enough development work has been done to determine either end with certainty. Width of outcrop ranges up to about 10 feet and thickness of the dike is commonly about five feet. The dike is very irregular, however, pinching and swelling rapidly in short distances, and is considerably folded. The dip is 30° - 60° SSE.

At the discovery hole, near the western end of the dike, the spodumene occurs abundantly as typical bluish-gray to greenish to pale lavender crystals, ranging in size up to more than one foot. The matrix of the dike is coarsely crystalline potash feldspar and white quartz, with some muscovite and locally abundant green and black tourmaline. East of the discovery hole, the quantity of spodumene decreases rapidly along the outcrop, but as no pits have been dug, the character in depth is not known.

The only development work on the dike consists of two small prospect pits, the largest of which is about eight feet long, five feet wide, and five feet deep. Additional prospecting will have to be done before the tonnage of spodumene can be determined. However, the amount of ore now exposed is so small, the character in depth so uncertain, the dike so thin and irregular, and the area so remote that further investigation by the Geological Survey is not warranted unless materially greater reserves are discovered.

J. David Love
Assistant Geologist

Written at Montpelier, Idaho
August 23, 1942