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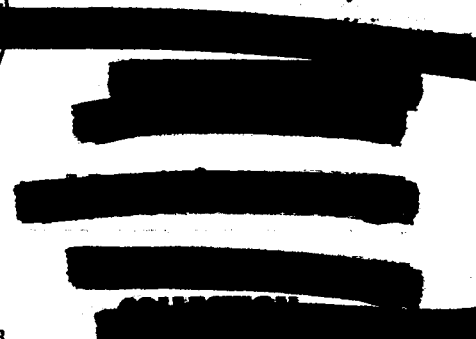
War Minerals Report 300

MUIR INLET OR NUNATAK MOLYBDENUM DEPOSITS
GLACIER BAY, SOUTHEASTERN ALASKA

Supplement to War Minerals Report 40

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WAR MINERALS REPORT

UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

W. M. R. 300 - Molybdenum

June 1943

MUIR INLET OR NUNATAK MOLYBDENUM DEPOSITS

Glacier Bay, Southeastern Alaska

(Supplement to W. M. R. 40)

The War Minerals Reports of the Bureau of Mines are issued by the United States Department of the Interior to give official expression to the conclusions reached on various investigations relating to domestic minerals. These reports are based upon the field work of the Bureau of Mines and upon data made available to the Department from other sources. The primary purpose of these reports is to provide essential information to the war agencies of the United States Government and to assist owners and operators of mining properties in the production of minerals vital to the prosecution of the war.

SUMMARY

The molybdenum deposits on the east shore of Muir Inlet have been described in War Minerals Report 40. The work proposed in that report has been completed. It was shown that the grade of material is too low to be of commercial interest at this time.

One deposit contains approximately 48,000 tons of material with an average of 0.07 percent molybdenum per foot of depth, and another contains 1,000 tons of material with an average of 0.10 percent molybdenum per foot of depth. Mineralization probably continues to considerable depth.

No further work on this deposit by the Bureau of Mines is proposed at this time.

INTRODUCTION

The molybdenum deposits of the Muir Inlet or Nunatak district in Glacier Bay, Territory of Alaska, were sampled and diamond drilled recently by a field party of the Bureau of Mines. Funds to explore the deposit were made

Board. While the project was under way, 219 channel samples were cut and 285 lineal feet of core drilling was completed. None of the bodies were commercially important.

SAMPLING AND ANALYSIS

Stockwork Deposits

According to Twenhofel, the stockwork molybdenite deposits outcrop over an area of about two million square feet and are partly covered by glacial moraine. The more noticeable mineralization is confined largely to an area of about 550,000 square feet. This is designated as Area No. 1 and was selected for systematic exploration.

A total of 203 channel samples averaging 0.07 percent molybdenum were cut over a length of 1,440 feet. The highest analysis for this group was 0.52 percent molybdenum, and only four samples assayed 0.15 percent or more. Two core-drill holes were put down in this area; hole 1, at an inclination of -30°, was completed to a depth of 46.7 feet, and hole 2, at an inclination of -45°, was completed to a depth of 238.1 feet. This latter hole reached a vertical depth of 169 feet below the surface, or 158 feet below sea level.

The grease ordinarily used to lubricate the drill rods could easily float the molybdenite during core drilling in this type of deposit. The possibility was anticipated, and provision was made to recover all of the sludge for analysis. Following are total weighted core and sludge and adjusted average analyses:

Hole	Core	Sludge	Adjusted average
1	0.043	0.041	0.042
2	.063	.073	.072

The same uniformly low-grade mineralization found on the surface continued to the bottom of the holes. Only two samples contained more than 0.15 percent molybdenum.

² Twenhofel, William S., Summary of the Results of the Field Investigation of the Carlin and Molybdenite Deposits of the Nunatak Area, Alaska.

Fault Deposits

According to the Geological Survey there are four faults that contain more molybdenite than is found in the wall rock. The Nunatak fault is particularly large and well mineralized. This deposit was selected for exploration and is designated Area No. 2. Samples were cut in 12 channels spaced over a length of 1,100 feet, and contained an average of 0.10 percent molybdenum. The average width of fault samples was 10.3 feet. Only three of the samples obtained from this deposit contained more than 0.15 percent molybdenum.

RESERVES

Area 1 contains 48,000 tons per foot of depth and averages 0.07 percent molybdenum. The stockwork of which the area is a part, according to the Geological Survey, contains about 200,000 tons per foot of depth, probably of lower grade than that of Area No. 1.

The Nunatak fault deposit, according to the Geological Survey, contains 1,000 tons per foot of depth, averaging 0.10 percent molybdenum.

All of the investigated molybdenite deposits in this area are below commercial grade.

BENEFICIATION TESTS

Two samples were shipped to the Bureau's laboratory in Rolla, Mo., for metallurgical test. One was taken near the first drill site in Area No. 1. The other was obtained from the shear zone in Area No. 2. These samples proved to be of considerably higher grade than the average for the deposit.

A concentrate containing 88.04 percent molybdenum sulfide was recovered from the sample from Area No. 1, whereas that from Area No. 2 (Nunatak fault) yielded a concentrate containing 94.49 percent molybdenum sulfide. As molybdenum concentrates are usually quoted on the basis of 90

percent minimum molybdenum sulfide content, the product made from the Area No. 1 sample was slightly below specifications; but the other was considerably better than the minimum.

CONCLUSIONS

Reserves of molybdenum-bearing materials have been shown to exist in the two deposits investigated on Muir Inlet. The molybdenum content of the material in Area No. 1 is estimated at 0.07 percent. The grade of the material from the Nunatak fault deposit averages 0.10 percent molybdenum.

Metallurgical investigations by the Bureau of Mines indicate that concentration by flotation to a marketable product is possible but not of economic interest at this time.

The Bureau's investigation indicated that the deposits are of little interest as a source of molybdenum and that further work is not warranted at present.