TEMPLE PEAK MOLYBDENUM DEPOSIT
SUBLETTE COUNTY

Location and Ownership

The area has been unsurveyed, and hence all locations referred to in this report are approximate. The only map that is available of the area is that of Shoshone National Forest published by the U. S. Forest Service.

The deposit consists of 59 unpatented lode claims that are located in Secs. 30 and 31, T. 32 N., R. 103 W., and Secs. 24 and 25, T. 32 N., R. 104 W. Mrs. Marjorie Pennock, Messrs. Lloyd Fiscus, Wayne Fiscus, and Garrel Stout, all of Farson, Wyoming, are the owners of the claims. In addition, Mr. G. L. Likes, Rock Springs, Wyoming, has one molybdenum claim located on the hill between Clear Lake and Rapid Lake, NE 1/4 Sec. 24, T. 32 N., R. 104 W.

The molybdenum claims may be reached by driving from Farson northeast to what is called the Big Sandy Opening. From here proceed by trail (see enclosed sketch map) approximately 10 miles to the claims.

The deposit was examined on the days of August 4, 5, and 6, 1953, in the company of Mrs. Pennock, Messrs. Lloyd Fiscus, George Smith, of Farson, and Mr. Peter Smith, Newcastle, Wyoming.

General Geology

The rocks of this area are part of the pre-Cambrian granite-gneiss complex that forms the core of the Wind River Range. The most westerly extension of this complex crops out in a series of foothills that is separated from the main mountain range by small north-south valleys filled with Tertiary sediments. On the west, these hills are partially covered by Tertiary sediments.

Glaciation is the most significant geomorphic feature of the region. Small terminal and lateral moraines extend at least one mile west of the Big Sandy Opening. The mountainous mass itself has been eroded into matterhorn-type peaks and cirques with many small lakes occupying the cirque basins.

No active glaciers are present in this particular area, but several perennial snowfields exist; the largest of which is located in the cirque northwest of Temple Peak.

Petrology

The rocks of the granite-gneiss complex in the Rapid-Temple Lakes area are very heterogeneous, and it would be exceedingly difficult to map the various types since they grade with continuous transition into one another. Although most of the "igneous-looking" specimens collected by the writer are probably granodiorites, there are those that range in composition from granite to quartz diorite. The petrology was not studied in detail for this report, but seven rock specimens were crushed and the

powdered fragments were examined rather hastily under the microscope to establish a rough classification of the various rock types.

The granodiorites vary in texture from medium-grained granular to coarse-grained granular. They may be further subdivided into leucocratic or mesocratic types with the principal mafic mineral being either an abundance of biotite or hornblende. Oligoclase, microcline, orthoclase, and quartz are the principal femic minerals. One specimen showed several fragments of microcline-albite perthite. Several outcrops along the trail near Big Sandy Lake exhibit a rude gneissoid-like banding.

Biotite and hornblende schistose inclusions are found within the granite-gneiss complex in the area, but are not sufficiently numerous to classify the entire mass as migmatitic. The migmatite area is believed to extend north of Temple Peak. The area in the vicinity of Temple Lake appears, from limited observation, to be a transitional zone between the "igneous-looking" rocks to the west and the more migmatitic rocks to the north. Here the principal rock type is a light colored granitic rock containing large elliptical porphyroblasts of orthoclase.

No basic dikes were observed in the area.

Mineralization

Molybdenum.

All of the molybdenum claims center around a northwest-southeast axis extending from the northwest side of Rapid Lake to the southeast side of Temple Lake. Further, molybdenite-bearing float has also been

reported found along the southwest side of the ridge bordering the southwest side of the Rapid-Middle-Temple Lakes area. This was not confirmed by the writer.

Only three distinct occurrences of molybdenite in place were noted by the writer. All three were found in joints that varied in strike from N. 13° E. to N. 30° E., and dip from 55° to 80° SE. Further, the mineralization occurs in two distinct associations; (1) molybdenite-quartz pods adjacent to inclusions of biotite schist, and (2) light colored medium-grained granite containing disseminated molybdenite.

The three prospects are described as follows:

(1). About one-fourth mile southwest of Rapid Lake a 3 1/2-foot wide zone of biotite schist containing quartz pods and molybdenite strikes N. 17° E. and dips 73° SE. Here the wall rock of granodiorite forms a well defined contact with the mineralized schist zone. Because of the brief examination made, it is not clear to the writer whether the biotite schist zones are xenoliths or reaction zones formed by segregation of biotite crystals from a granitic magma.

The molybdenite is found in randomly oriented clots and veinlets within a 5 1/2-inch vein. In addition, molybdenite also occurs lining fractures adjacent to the granodiorite-schist contact. The mineralized zone is exposed for a distance of approximately ten feet. An assay of a chip sample taken by

the writer and analyzed by the Natural Resources Research Institute yielded 2.03% Mo. This is a high grade sample and should not be construed as indicating the average grade of the vein. The only other metallic mineral identified from this zone was pyrite. It is not abundant.

(2). Slightly northeast of Rapid Lake is a molybdenite-bearing coarse-grained granodiorite zone that occupies a fracture striking N. 13° E. and dipping 55° SE. The prospect is almost caved, and no information could be secured on the size and extent of the deposit. The fracture, however, can be rudely projected into the molybdenite-bearing zone described in (1) above. This deposit is the Clear Lode claim owned by G. L. Likes.

(3). Just south of the northwest end of Temple Lake is a molybdenum-bearing granitic dike (?) that strikes N. 30° E. and dips 80° SE. The molybdenite is found disseminated as small clots and veinlets within a light colored medium-grained orthoclase-and biotite-bearing granite. The molybdenum-bearing dike is approximately 5 feet wide and is exposed for a distance of several hundred feet.

The wall rock here is a very coarse-grained granite containing elliptical-shaped orthoclase porphyroblasts varying from 1/2 to 3/4 inches in length. The wall rock also shows

a network of irregular quartz veins which range up to 3 inches in width.

Quartz.

Northwest of Temple Peak, between the head of Temple Lake and Frozen Lake (not indicated on the map), is a quartz vein varying from one to two feet thick and striking N. 80° E. and dipping 46° N. The wall rock is a limonite-stained altered granite that contains pyrite and traces of chalcopyrite (?). The quartz crystals, which average about 1/2 to 1 inch in length, are milky white to colorless, twinned, and show fair to good rhombohedron crystal faces. It is doubtful if they would be suitable for their pyroelectric and piezoelectric properties.

Conclusions

Although molybdenite-bearing float has been reported found over an area of approximately 2 1/2 square miles in this vicinity as well as on the drainage of the Popo Agie River on the east side of the divide, because of its inaccessibility the area cannot be considered to have economic possibilities at the present time without future exploration. Since many prospect pits have been covered by recent slides due to a northward dipping joint system, it is realized that more molybdenum-bearing veins or zones may be present than were observed by the writer. As a guide for future exploration for molybdenum in the area, the writer suggests that the individual joints and granite dikes (?) lying approximately within

the arc of N. 10° E. to N. 40° E. be traced and examined in detail for a distance of at least one mile north and south of this area. Further, a study of the petrology and structure, as well as the mineralization would aid in the understanding of the pre-Cambrian granite-gneiss complex of the Wind River Range, which is virtually unknown from a geological viewpoint.

William H. Wilson
Assistant State Geologist
Geological Survey of Wyoming
June 13, 1955

September 29, 1953

10400

1405 - Molybdenum

W. Wilson

Aug. 31, 1953

Molybdenum

Molybdenum

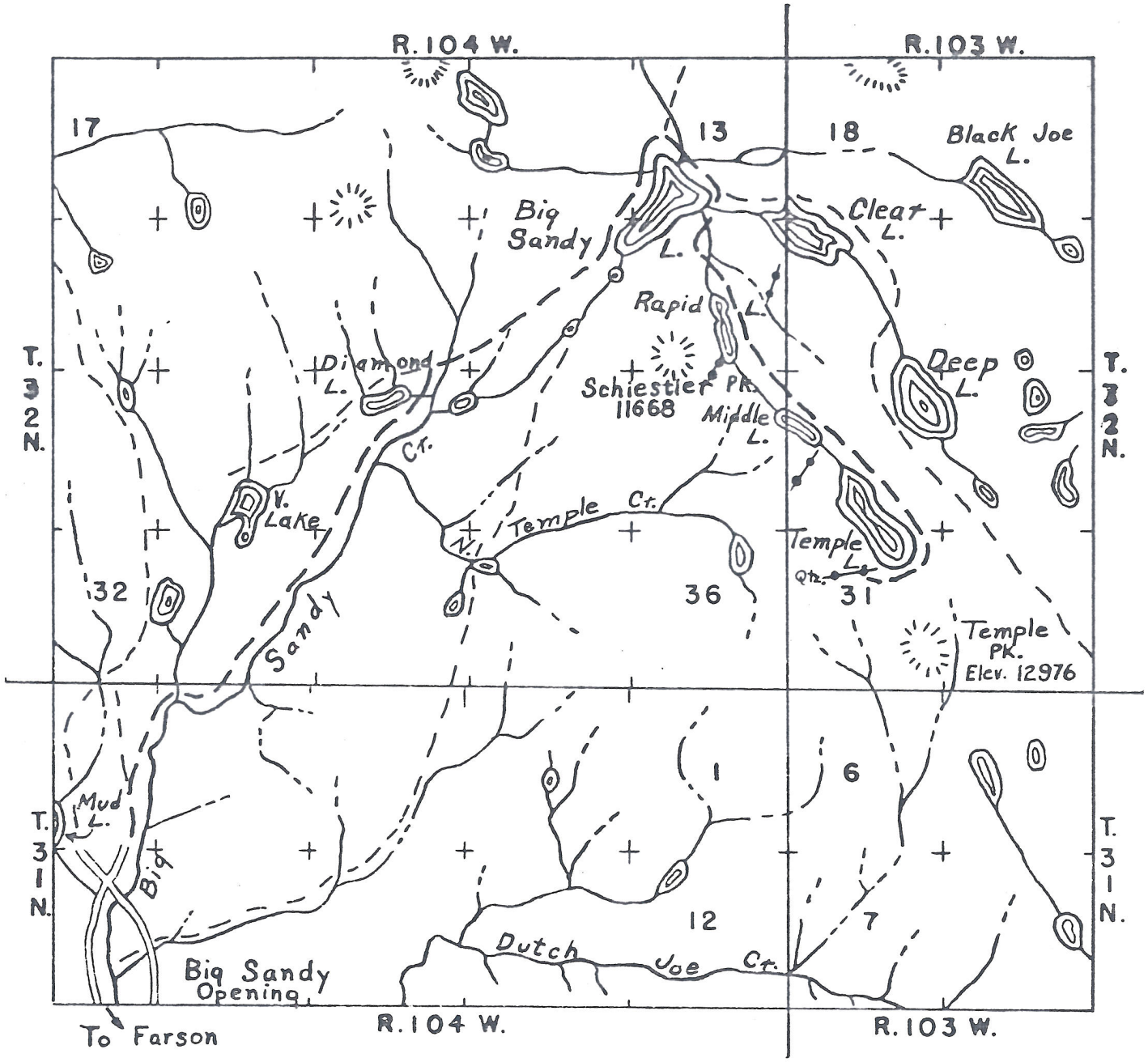
10400	2.03%

R. Rasmussen

Walter E. Rasmussen

Sept. 13 53

Sept. 29 53



Trail

Trail to the Temple Pk. Molybdenum Deposit

Molybdenite Vein

Scale: 1 inch = 1 mile

SKETCH MAP OF TEMPLE PEAK MOLYBDENUM DEPOSITS

Base Map: Shoshone National Forest, U.S. Forest Service