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NBMG OFR 83-11
See also 83-12 for geochemical results.

(29)
Item 8

GOLD BUTTE DISTRICT

The Gold Butte mining district is located in the southern part of the Virgin Range in the northeastern part of Clark County, Nevada. It is bounded on the west and south by Lake Mead, on the east by the Arizona-Nevada state boundary, and on the north by an arbitrary east-west line throughout St. Thomas Gap. Access to the district is south from Interstate Highway 15 along the north-south Gold Butte Road and fair to extremely rough dirt roads, or by boat from Lake Mead.

The district was first mined in 1873 when Daniel Bonelli discovered and began mining vermiculite deposits that occur northeast of Gold Butte Lode gold mining began about 1905 and the town of Gold Butte was laid out in 1908. Shipments of argentiferous copper and zinc were reported from 1912 to 1918, but from 1918 through 1941, gold was the principal, albeit, minor commonodity produced. Intermittent small-scale placer operations contributed to gold production after 1926 (Hill, 1916; Lincoln, 1923; Vanderburg, 1936,1937). Currently the southern part of the district is being explored by individual prospectors. No activity was observed in the northern part of the district. Mr. Eddie Bozell, owner of the Treasure Hawk Mine (formerly the Radio Crystal Mine), was kind enough to provide a tour of his operation, however, he did not permit the taking of samples, photos, or notes, thereby severly restricting the inspection. The Treasure Hawk Mine is a completely self-sustaining placer operation and is currently producing enough gold to support at least 5 persons. Assessment work is the only activity observed on the other active properties in the district. A full-time caretaker was in residence at the Vermiculite Mine at the time it was visited.

Mineral production from the district includes gold, silver, copper, lead, zinc, vermiculite sheet mica, and magnesite. Scheelite and powellite have been noted in the joints and fractures and disseminated in the granitic dikes, however, no tungsten production has been reported.

The district is divided into two distinctly different geological areas by the northeast trending Gold Butte Fault, a left-lateral fault with no apparent vertical displacement, and an approximate 11.25 km horizontal displacement. North of the fault, a series of north-trending ridges and valleys formed by steeply easterly dipping beds of Paleozoic quartzite, limestone and chert, interbedded with limy shale are faulted against Precambrian gneisses and overlain by Tertiary sediments. Mineralization in this area appears to be confined to Trampand Azure Ridges, where small, irregular replacement bodies of oxidized copper, lead and zinc ore occurs along fractures in Mississippian and Cambrian carbonates (Longwell, et al, 1965). Uranium has been reported along joints, in the Tertiary Horse Springs Formation (Garside, 1973).

Rocks south of the dividing fault are chiefly Precambrian gneisses and schists which have been intruded by Precambrian, medium to coarse grained, porphyritic, locally perthitic rapakivi-like granite. The granites underlie the metamorphic rocks wherever exposed and represent a roof portion of a granite batholith, with numerous cupolas, dikes, inclusions, and intrusion breccias. Rb-Sr age-dating have determined the age of the batholith to be 1.06×10^8 to 1.09×10^8 years (Volboth, 1962). The Precambrian complex is flanked on the west by the same north-trending carbonate ridges described to the north and displaced to the west by the Gold Butte Fault. Cutting both gneisse and granites are small, irregular, vuggy, quartz veins and stringers, massive pegmatite bearing radioactive minerals (Garside, 1973), and aplite dikes. The quartz veins are virtually vertical and strike generally north-northeast. The veins have a strong tendency to branch, then unite at a distance. The country rock adjacent to the veins is lightly altered to sericite and chlorite. Minor free gold occurs in the more heavily mineralized veins (Hill, 1916). Gangue minerals include quartz and fluorite. It has been noted that the granites in the Gold Butte region have a high rare earth content (Weyler, 1965).

Leighton (1967) suggests that the origin of the vermiculite deposits in the district is the result of hydrothermal alteration of mafic minerals, particularly biotite, as a result of the intrusion of pegmatite dikes in the area. The vermiculite is most abundant, of higher quality, and possesses zonal relationships near the pegmatite dikes. Leighton also suggests that meteoric waters continued the process of vermiculitization after the hydrothermal activity had ceased.

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