2320 0006

(153)

Item 6

HILLTOP DISTRICT

The Hilltop (Kimberly, Maysville, Pittsburg) mining district is located on the northeast slope of Shoshone Peak in the north central part of the north-northeast trending Shoshone Range in T29 and 30N, R46E, Lander County. Access to the district is 18 miles southeast from Battle Mountain and Interstate 80 along moderately used dirt roads. The Hilltop district is adjoined by the Bullion district on the southeast and the Lewis district on the northwest and is aligned along the Battle Mountain-Eureka mineral belt.

The district was explored in the 1860's when miners were prospecting radially outward from Austin. Prospecting continued through the 1870's and 1880's, but with no production recorded. The district was formally established in 1906, and in 1907 Scow, Anderson, and DuBorg discovered gold around the older workings (Vandenberg, 1939). This and other discoveries resulted in a boom in 1908. A 10-stamp almagamation mill was built that year and milling operations began in 1912. In 1914 placer gold was discovered in Crum Canyon by John Nelson, but recorded production from the placer was less than $3,000. No accurate records exist, but production of gold and silver from 1887 to 1908 probably did not exceed $200,000. Sporadic activity from 1908 to 1951 produced over $800,000 from gold, silver, copper, and lead ores (Stager, 1977). There has been a recent surge of surface and subsurface exploration in the district, probably due to the increase in gold and silver prices. There are indications that some of the older dumps are being milled for residual minerals.

The Hilltop district is underlain by an east-tilted, fault block of Paleozoic siliceous sediments that has been intruded and overlain by Tertiary igneous rocks. The west side of the range is marked by a steep fault scarp cut with deeply incised valleys. The east side has a rolling topography with moderate relief. Two major periods of tectonic activity preceeded basin and range faulting: The Roberts

J. Tingley + P. Smith (1982) Mineral Inventory of Eureka-Shoshone Resource Area: NBMG ~~82-10~~ 83-3.
See also 83-4 for geochemical results.

Mountains Thrust, suggested to be middle Paleozoic, and the Lewis orogeny (named by Gullily and Gates, 1965), tentatively dated as post-early Triassic and prior to the intrusion of Tertiary stocks. Windows in the Roberts Mountain thrust sheet are exposed in several nearby areas of the Shoshone Range. Within the upper plate of the thrust fault are at least 10 subordinate thrust faults and innumerable small ones which superimpose wedges and slices of rocks upon one another (Gates, 1956). The upper plate is highly folded, with minor thrust faulting producing isoclinal and recumbent folds. The moderately folded, single thrust sheet of the Lewis orogeny extends across the exposed edges of four or five lower thrust sheets of the Roberts Mountain Thrust (Gilluly and Gates, 1965). There are at least two stages of Cenozoic volcanism in the area: the earlier is marked by the intrusion of quartz monzonite/granodiorite porphyry stocks, and the later by volcanic eruption (Gilluly and Gates, 1965) and suggested subsidence of the Mt. Lewis Cauldera (Wrucke and Silberman, 1975). Near the crest of the range are the remains of a volcanic complex which Wrucke and Silberman (1975) suggest to be a 31-33 m.y. old, 10-mile wide subsided caudera, which they named the Mt. Lewis Cauldera. The physical features have been deformed by subsidence and erosion, but the area is ringed by concentric, steeply inward dipping faults. Plugs, breccia pipes and intrusive breccia are found along the ring fault. In the center of the complex are quartz monzonite, rhyolite porphyry and pumiceous vitrophyre. After the volcanic eruptions, normal faulting associated with basin and range movement resulted in a northwest facing fault scarp (Gilluly and Gates, 1965).

A belt of intrusives and associated mesothermal silver, gold, copper and lead deposits extend northwest across the Shoshone Range, encompassing three districts: Bullion, Hilltop, and Lewis (Gilluly and Gates, 1965). In the Hilltop district many of the former producing mines are located at the contact between the Tertiary granodiorite intrusives and the Paleozoic country rocks. The wallrock located in the mines is commonly recrystallized, bleached, and sericitized. Many ore deposits

localized in quartz veins along faults and shear zones in the upper plate of the Roberts Thrust Fault. These deposits occur in tabular lodes, sheeted zones, and fissure veins with a short vertical range and are oxidized down to approximately 100 feet (Gilluly and Gates, 1965). The ore minerals include native gold, auriferous pyrite, arsenopyrite, galena, sphalerite, tetrahedrite, chalcopyrite, native copper and pyargyrite. Gangue minerals include quartz, calcite, barite, and iron oxides. Small bodies of sulfide ore also occurs in fractures in the quartzite which is cut by leached porphyry carrying gold-bearing quartz stringers. The quartzite near the ore is impregnated with pyrite and is locally kaolinized (Emmons, 1910). Gold tellurides have also been reported (Vandenberg, 1938). In Crum Canyon, minor low grade manganese deposits of wad, pyrolusite and psilomaline have been found along fracture zones in the cherts of the Valmy Formation. Barite has been found throughout the district with commercial size replacement deposits confined to the Devonian Slaven Chert and as replacement veins below the thrust plate (Cowan, 1950). Bedded barite extends along a northeast trend and appears to be unrelated to the metallic deposits in the district in both distribution and origin (Gilluly and Gates, 1965). Previous production of barite in the district has exceeded more than 50,000 tons from open workings, however, no activity associated with barite was observed.

The only activity noted during the field inspection of the district was the old Hilltop (Independent) Mine being drilled by Boyles Drilling from Salt Lake City. There were indications that the older dumps around the Hilltop Mine were being milled for residual minerals.

Selected References:

Cowan, A. G. and Pontius, D. C. (1950). Geology of a portion of Crescent Valley and Hilltop quadrangles, Nevada. Unpublished M.A. Thesis, UCLA.

Emmons, W. H. (1910). Reconnaissance of some mining camps in Nevada. U.S.G.S. Bull. 408.

Gilluly, J. and Gates, O. (1965). Tectonic and igneous geology of the northern Shoshone Range, Nevada, with section on Economic Geology by Ketner. U.S.G.S. P.P. 465.

Gates, Olcott (1956). Tertiary volcanism and brecciation in the Shoshone Range, Nevada. Unpublished Ph.D. Dissertation, John Hopkins University.

Hilltop Mining District, Battle Mountain, Lander County, Nevada. Unpublished report on file at the NBMG.

Horton, R. C. (1963). An inventory of barite occurrences in Nevada. NBMG Report 4.

Lawrence, E. F. (1963). Antimony deposits of Nevada. NBMG Bull. 61.

Lincoln, F. C. (1923). Mining districts and mineral resources of Nevada. Nevada Newsletter Publishing Co., Reno, NV.

Sirdevan, W. H. (1913). Report on the Estes Property (The Mary Hill Group), Corral Canyon.

Stewart, J. H., McKee, E. H., and Stager, H. K. (1977). Geology and mineral deposits of Lander County, Nevada. NBMG Bull. 88.

Vandenberg, W. O. (1939). Reconnaissance of mining districts in Lander County, Nevada. U.S.B.M. I.C. 7043.