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BALD MOUNTAIN

ALLIGATOR RIDGE

The Alligator Ridge area is located in northwestern White Pine County, about 60 miles northwest of Ely. Alligator Ridge is a north-south trending ridge which lies west of Long Valley and south of Bald Mountain in the southern Ruby Range. Although Alligator Ridge is usually included within the older Bald Mountain district which lies to the northwest, no historic mining activity is recorded for the area of the newly discovered Vantage deposits at Alligator Ridge and they rate independent consideration.

The Vantage disseminated gold deposits were discovered June 23, 1976 by a professional prospector working on a grubstake agreement with American Selco. Outcrops of jasperoid were recognized and sampled and most of the original samples ran 0.1 to 1 ppm gold. Detailed soil sampling followed by geologic mapping and drilling of 12 shallow holes confirmed the presence of a major disseminated gold discovery. The first drill hole ran 0.12 ounces gold/ton from 15 feet to 130 feet (Shule, Sutherland, 1981). Published reserves (1981) were 5 million tons of 0.12 ounces gold per ton.

The Alligator Ridge Mine, operated as a joint venture between Amselco Minerals, Inc. and Occidental Minerals Corporation, began operation in July 1981. Mining is by open pit methods. The ore is crushed and placed on leach pads for cyanide leaching. The 1981 production was projected as 589,830 tons of ore at 0.118 ounces gold per ton. There are proven reserves for a 6 year mine life and satellite reserves should extend beyond that (Amselco memo, GSN trip, 1981).

NBMG OFR 83-1

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The deposit occurs in Paleozoic rocks along the eastern limb of a north-trending anticline which parallels the trend of Alligator Ridge. Disseminated gold occurs in silicified siltstone of the Mississippian Pilot Shale, with higher grade ore occurring in discontinuous carbonaceous lenses. The ore zone lies directly above a jasperoid unit which has replaced the lowest portion of the Pilot Shale, marking a transition zone between the Pilot Shale and the underlying Devonian Devils Gate Limestone.

Mineralization is apparently related to a north-northeast striking fault zone (Vantage Fault). This fault has upthrown the Devils Gate on the east against the Pilot and Joana Formations on the west. Ore is disseminated in the brecciated, silicified siltstones. Alteration consists of jasperoid (silicification) and de-calcification of carbonate rocks. Stibnite crystals have been seen in the jasperoid. Open fractures in the mineralized zone often contain jarosite, barite, goethite and quartz. Very sparse visible gold is present in quartz veinlets in oxidized portions of the ore zone. In the carbonaceous portions of the deposit, pyrite and realgar are present. A sample taken from Amselco's ore pile showed anomalous arsenic and antimony values.

Exposures of what may be hydrothermal breccias were seen in the east and south walls of the Vantage I pit. Kaolinite which coats drusy quartz in cavities in this breccia may be hypogene and related to the primary ore forming event.

Jasperoid is present in the overlying Joana Limestone and Tertiary volcaniclastic sedimentary rocks exposed in the Vantage I pit are altered and may contain gold mineralization.

Exploration activity (in 1981) was fairly intense along the entire extent of Alligator Ridge. The western limb of the anticline exposed at the Vantage deposits forms the eastern flank of Buck Mountain, and that area, as well as other areas both north and south along Alligator Ridge, are sites of exploration activity.

Selected References

Findlay, William F. (1960) Geology of a part of the Buck Mountain quadrangle, East-central Nevada, USC, MA thesis.

McCarthy, R. J. (1974) Geology of the Maverick Springs Range, NV, CSU, San Diego, MS thesis.

Merill, J. D. (1960) Geology of the lower part of the Buck Mountain quadrangle, UCLA, MS thesis.

Schule, W. and Sutherland, S. (1981) GSN tour of Alligator Ridge Mine, September 25, 1981, unpublished information.