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Vicksburg

WARM SPRINGS DISTRICT

LOCATION

The Warm Springs district is at the northern end of the Pine Forest Range in northwest Humboldt County. Included within the district are some mines that were formerly described as being in the Pueblo Mountains district to the north, the Painted Hills Mine to the west, and some copper-silver prospects to the northeast. The small community of Denio on the Nevada-Oregon border is the only nearby settlement other than Winnemucca which is 105 miles to the southeast.

HISTORY

The first activity in the district was in 1863 and included the building of a small mill that was burned down in 1864 by hostile Bannock Indians who drove the settlers out shortly thereafter (Vanderburg, 1938, p. 49). Undoubtedly there was more mining and prospecting before the 1890's but none was reported until the discovery of the Cowden Mine near the town site of Denio in 1894. Free gold in quartz veins and silver associated with copper have been mined or prospected in the district since the 1890 era. The official production figures for the district during the first 60 years are not available but the Ashdown Mine is credited with at least $400,000 for that period. During that same period the Painted Hills Mine was supplying mercury to the Ashdown Mill to treat gold ore. Tungsten was discovered in the district in the early 1940's and was the major metal product produced during the period 1936 to 1944 (Stager, in prep). The American Copper and Nickel Co. sunk a decline on a massive molybdenite ore body discovered at the Ashdown Mine during a 1980 drilling program. Some high-grade molybdenum ore has been mined and stockpiled but the operation is on hold until the price for molybdenum improves. Currently copper-silver mineralization north of Denio Summit is being prospected and drilled, and the old Adams or Homer Verne gold mine is being reopened after being idle for decades.

GEOLOGIC SETTING

Granodiorite of Cretaceous age forms the highland and about eighty percent of the exposed rock in the Pine Forest Range. The oldest rocks are Triassic-Jurassic slates, phyllites and quartzites surviving as pendants or remnants along the crest or northeast flank of the Range. The lower hills to the north are covered by basalts and sediments of Tertiary age. There are at least two major rock assemblages in the Pueblo Hills to the north that are not present in the Pine Forest Range, otherwise the districts are very similar. The Pueblo Mountains have a lower, undivided section of Permian volcanics and sedimentary rocks and some Tertiary volcanic flows of rhyolite and dacite composition.

NBMG 85-3

ORE DEPOSITS

Quartz veins in both granodiorite and metasediments have been mined for gold with by-products of silver, lead, and copper. The biggest producer in the district has been the Ashdown-Vicksburg complex on the west side of the Range. The Ashdown was also the site of a mill that treated the gold ores using the mercury production from the Painted Hills Mine located about 6 miles to the west on the northeast side of the McGee Mountains. The Painted Hills Mine is currently closed but was operated as an open-pit in its later years even though some of the underground workings still exist. The mercury mineralization at the mine site appears to have been deposited in a hot spring environment that is now partly exposed by the open-pit. The mine apparently operated only during times when the Ashdown mill was processing gold ores. Other gold producers in the district include the Cherry Gulch Mine to the south of the Ashdown and the Adams or Homer Verne in section 6 near the crest of the range.

The workings at the Adams Mine are in large quartz vein systems hosted in phyllites and slates of Triassic age. The main development was on an east-west vein ranging in width from 8-12 feet and dipping steeply to the south. The vein expands and contracts along its strike forming large pods up to 20 feet in width. The vein appears to be part of a fissure filling system and other parallel veins are reported to be traceable at the surface for 3,000 feet to the east. The ore is iron-stained, brecciated vein quartz with local pockets of free gold. Both the Adams and the Cherry Gulch mines have extensive workings and have operated intermittently for years but neither has any reported production. A number of small mines and prospects on quartz veins systems exist within the nearby canyons but nothing is known of their history.

Tungsten was first discovered in the district in 1942, at the site of the Defense Mine which later became the districts largest producer. From 1942-44 the mine yielded 3,000 tons of ore and about 2,600 units of WO_3. The tungsten ore was milled at the old Ashdown Mill about 4 miles south of the Defense Mine. The mine was again active in 1953 to 1956 and then from 1967 to 1971 yielding an additional 1,200 units of WO_3 (Stager, in prep). Two types of ore bodies were mined, tactite bodies along the contact between granite and metamorphic rocks and quartz veins along shear zones. Another small tungsten producer located on the western side of the range about a mile north of the Ashdown Mine, the Last Chance, yielded 11 tons of ore assaying 58 percent WO_3. Mining at this deposit was from tactites in mica schists and hornfels intruded by granodiorite. Another thirty-two tons of ore containing 1.0 percent WO_3 was reported as part of the production from the Ashdown in 1954 but may have been milled and not mined from the property.

Copper and silver mineralization associated with quartz veins mostly within granodiorite occur along the north and northeast margins of the district. At one of these deposits, the Hall Mine located on the southeast end of the Pueblo Mountains, the main workings are on a 30-40 foot wide quartz vein that outcrops in shales and schists but is very near a granodiorite contact. The vein contains masses of copper sulfides and oxides along fractures and as clots within the matrix of a vein that is partly brecciated. Similar deposits occur northeast of Denio Summit and include the Wedding Ring Group near the Wilder Creek Ranch.

GEOCHEMICAL RELATIONSHIPS

The range of silver values in the copper-silver veins was from 20 ppm at the Hall Mine to 150 to 500 ppm for the mines and prospects northeast of Denio Summit. The gold values for the same samples ranged from .20 to .80 ppm. The Denio Summit samples were also anomalous in copper, bismuth and barium. One sample was high in antimony and there was a modest amount of lead, present in all of the samples. Gold values from quartz veins sampled at the Ashdown, Cherry Gulch and Adams mines were 3.2, 4.2 and 12.0 ppm respectively. Tungsten samples were not lamped in the field so the results were erratic but they were not surprising. Tungsten appeared in several of the vein samples, one at the Ashdown Mine and another at the Cherry Creek Mine. Oddly enough, molybdenum was present in anomalous amounts in all of the samples from Ashdown Mine not just those from the new ore body.

SELECTED REFERENCES

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Willden, R. (1964) Geology and Mineral Deposits of Humboldt County, Nevada: NBMG Bull. 59.