

SPRING VALLEY DISTRICT

LOCATION

The Spring Valley district is located on the east flank of the Humboldt Range, T28-29N, R34-35E. The district is accessible via Nevada State Highway 400 and dirt roads extending from the highway.

HISTORY

The main lode mine in the district, the Bonanza King Mine, was discovered in 1868. The mine was worked from 1868-85 then intermittently until 1910. It has produced more than \$50,000 in gold and silver. The placer deposits in Spring Valley were discovered in 1875. Placer gold was also discovered in American Canyon, South American Canyon, and Troy Canyon. The placer deposits were fairly rich and were worked intensively from 1880-90 by Chinese miners, who drifted along the alluvial-bedrock contact from numerous shafts to mine high-grade pay streaks. The district is estimated to have produced more than \$10 million in gold making it the most productive placer district in Nevada.

Cinnabar was found in the district in 1906. Three deposits, the Kaolinite, King George and Hillside mines have produced about 500 flasks of mercury. Two small lead-silver mines, the Pacific Matchless and the Wabash Mine, are credited with producing a small amount of ore in the 1930's.

About 3000 tons of pinite (massive sericite) was mined as a refractory from 1933-48 from a deposit in the Spring Valley district.

GEOLOGICAL SETTING

Rocks of the Lower Triassic Koipato Group, including the Limerick Greenstone, Rochester and Weaver Rhyolites and rhyolite porphyry and leucogranite intrusive rocks, crop out in the core of the district. The Koipato Group rocks are overlain by the dominantly carbonate rocks of the Prida and Natchez Pass Formations of Triassic age. A granodiorite stock intrudes Rochester Rhyolite in Spring Valley Canyon. Diabase dikes and sills intrude both rocks of the Koipato Group and the Prida and Natchez Pass Formations. All of these rocks are unconformably overlain by Tertiary basalt flows.

The Mesozoic rocks are folded into a north-trending anticline which is cut by several major north-trending faults including the Black Ridge fault on the west side of the district and the Fitting fault on the east side. The Fitting fault drops the Weaver Rhyolite and the Prida and Natchez Pass Formations down against the Rochester Rhyolite.

ORE DEPOSITS

The Bonanza King Mine is located on a northwest-trending, steeply dipping vein in a diabase dike which intrudes Rochester Rhyolite (Johnson, 1977). The quartz-tourmaline vein is 3/4-1-2/3 m wide and contains pyrite,

tetrahedrite, galena, sphalerite, chalcopyrite, covellite, chalcocite, stephanite, acanthite and electrum.

The Pacific Matchless Mine is located on a quartz-tourmaline vein in leucogranite. The vein trends northerly and contains barite, galena, pyrite and chalcopyrite. The Wabash Mine explores a northerly-trending brecciated fault zone in Rochester Rhyolite. The ore contains abundant manganese oxide and galena and sphalerite.

The mercury deposits occur in carbonate rocks of the Natchez Pass Formation, King George and Hillside mines, and in highly sericitized and argillized Rochester Rhyolite, Kaolinite Mine. The ore at the Hillside and King George mines occurs as coarsely crystalline cinnabar in calcite veinlets which cut limestone. Minor native mercury, calomel and stibnite occur with the ore. At the Kaolinite Mine, the mercury occurs as small crystals and painty films, disseminated through the altered rhyolite.

The placer mines, from which the main production in the district was derived, are located in Quaternary gravels which locally exceed 30 meters in thickness. The gold occurred both in so called false bedrocks of clay, overlain by gravel, and at the bedrock-gravel contact. The source of the gold is apparently a number of quartz-tourmaline veins and veinlets in Koipato Group rocks on Black Ridge and possibly from erosion of the veins on Nenzel Hill in the Rochester district.

GEOCHEMISTRY

No samples taken.

SELECTED REFERENCES

- Bailey, E. H., and Phoenix, D. A. (1944) Quicksilver deposits of Nevada: Nevada University Bulletin, v. 38.
- Johnson, M. G. (1977) Geology and mineral deposits of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89.
- Wallace, R. E., Tatlock, D. B., Silberling, N. J., and Irwin, W. P. (1969) Geologic map of the Unionville Quadrangle, Pershing County, Nevada: U.S. Geological Survey Map GQ820.