SEVEN TROUGHS DISTRICT

LOCATION

The Seven Troughs district covers the central and southern parts of the Seven Troughs Range in central Pershing County. The silver-gold mines of the district are located on the eastern slope of the range in the southeast corner of T30N,R28E, and the southwest corner of T30N,R29E. Principal mining camps in the district were Seven Troughs, up Seven Troughs Canyon, Mazuma, at the mouth of this canyon, and Vernon, located to the southwest along the front of the range. The present camp of Seven Troughs, or Tunnel Camp, is not the original town but is a more recent settlement which grew near the site of the last mill operation in the district.

HISTORY

The earliest recorded mineral discoveries in the Seven Troughs range were made in Stonehouse Canyon, now considered to be in the adjacent Farrell district, in about 1863. Gold was discovered in the upper part of Seven Troughs canyon in 1905, but it was not until 1907 that the Seven Troughs began to attract attention (Ransome, 1909). The Mazuma Hills Mine opened that year followed soon after by the Fairview and Kindergarten mines. Within a short time after opening the Mazuma Mine, claims were staked along the entire east flank of the range and by 1908 25 mining companies were operating in the district (Johnson, 1977). Tales were told of ore that yielded up to $100,000 per ton, but the district average was around $45-$60 per ton (Johnson, 1977). Mining activity in the Seven Troughs district was nearly continuous from 1907 to 1962 but the most productive years were between 1908 and 1916. In the period between 1927 and 1932, an 11,900-foot drainage tunnel was driven from the range front to the central portion of the district. A few tens of thousands of tons of ore were produced from the tunnel at that time (Bruce, 1980). The district is credited with production of over 155,000 ounces of gold and around 1 million ounces of silver with a total value of slightly under $4 million.

Activity continues in the district and there have been several exploration programs carried out over the past several years. The results of these programs are not known, however, and no mining is in progress at present.

GEOLOGIC SETTING

The northwestern and southern parts of the Seven Troughs Range are underlain by Triassic and Jurassic sedimentary rocks that have been intruded and locally metamorphosed by Cretaceous granodiorite. The northeastern and central parts of the range are underlain by a thick sequence of rhyolites and andesites of Tertiary age. The volcanic rocks that make up most of the east flank of the range consist mainly of rhyolitic flows that interfinger with and intrude andesitic rocks. Distinction between the two rock types is difficult where they are complexly interfingered (Johnson, 1977).

The dominant structural features in the district are a series of subparallel, north-northeast trending faults with east side down displacements. East-trending faults are common and, where they intersect north-trending faults, the latter are commonly displaced and folded (Bruce, 1980).

Two separate alteration events have been described at Seven Troughs; an early, pervasive propylitic event which altered rocks to an assemblage of montmorillonite, quartz, chlorite, calcite, and pyrite, and a second period of argillic alteration restricted to the immediate area of mineralized structures (Bruce, 1980).

ORE DEPOSITS

The gold-silver deposits at Seven Troughs occur in a network of veins and veinlets paralleling dikes and fissures in the rhyolites and along contacts with other volcanic units. The veins generally have a north-south trend but there are many cross stringers and faults. The veins consist of soft crushed material representing zones of brecciation or small fissures filled with friable, sugary quartz and carry native gold alloyed with silver (Johnson, 1977). Some proustite and possibly some stephanite or polybasite were found with the gold in the Fairview Mine, and a little chalcopyrite was noted in 1908 in the Mazuma Mine (Ransome, 1909).

Stibnite occurs as crystalline masses in quartz in at least two localities in the district but, according to Ransome (1909), it does not appear to have any intimate connection with rich ore.

Tungsten ores are found in two general areas within the Seven Troughs district, one to the west of Vernon near the pass leading to Porter Springs, and another further south, on the eastern tip of the Seven Troughs Range.

The first area, near Vernon, was discovered in 1943 and is credited with producing about 2200 units of WO_3 between 1953 and 1962 (Stager, in prep). Most of this production came from the Holiday Mine, a contact deposit on the southwest flank of the range. At the Vernon Mine, on the east side of the range southwest of Vernon, scheelite was mined from thin quartz veins and pegmatites which cut granodiorite.

In the second area, on the southeastern tip of the Seven Troughs Range about 6 miles southwest of Vernon, scheelite is found as crystals in white quartz veins which follow northeast-striking shear zones in metasedimentary rocks. Some tungsten mineralization is also present in a thin tactite zone. This area was first claimed in the early 1970's, and has had no tungsten production.

GEOCHEMICAL RELATIONSHIPS

Samples of ores collected in the central Seven Troughs district were anomalous in silver and gold, but contained little else. All were anomalous in barium but arsenic and antimony values were low as were all base metals. A sample from the J & B Mine, north of Seven Troughs, was anomalous in arsenic as well as gold and silver, and another sample from the Portland Mine near Vernon was also high in arsenic.

Ore samples from the tungsten deposits near Vernon were uniformly high in manganese and tungsten. Two samples contained small amounts of

tin, and one contained high molybdenum. Sample 2823, from quartz veins near the tungsten prospects, contained 2.5 ppm gold.

SELECTED REFERENCES

Bruce, W. R. (1980) Geology and Mineral Deposits of the Seven Troughs Mining District, Pershing County, Nevada: SEG field trip guide, unpub.

Johnson, M. G. (1977) Geology and Mineral Deposits of Pershing County, Nevada: NBMG Bull. 89.

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.

Ransome, F. L. (1909) Notes on some Mining Districts in Humboldt County, Nevada: USGS Bull. 414.

Shamberger, H. A. (1972) The Story of Seven Troughs, Pershing County, Nevada: Nevada Historical Press, Carson City, Nevada.

Stager, H. K. (in prep) Tungsten Deposits of Nevada: NBMG Bull.