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Item 6

SPENCER HOT SPRINGS DISTRICT

The Spencer Hot Springs district includes the area surrounding the Linka-Conquest Tungsten Mines and Spencer Hot Springs in the northern Toquima Range southeast of Austin, Lander County. The district covers a very small area north of the Pete's Canyon road on the edge of Smoky Valley. The National Forest boundary extends through the center of the district, the Linka Mine is west of the boundary on BLM land, the Conquest Mine is to the east, inside the National Forest.

Recorded mining activity in the district began in 1941 with the discovery of the Linka Tungsten deposit by Steve Linka. Tungsten ores were mined on a small scale at the Linka and later at the adjoining Conquest Mine in the 1945's and again in 1955-56. About 66,420 tons of ore averaging 0.45% WO_3 were produced during this period. The Spencer Hot Springs, about one mile west of the tungsten deposits on the edge of Smoky Valley, is a well-known hot spring, and has been used by the local residents for years as a hot bath-recreation area. Until recently, there was a large concrete-lined pool at the site and the area was used for swimming.

Several well sites are visible near the hot springs, but it is not known who drilled them or what the geothermal potential of the area might be. Two old shafts to the east of the springs but west of the Linka Mine appear to pre-date the work at Linka but there are no records on these properties.

The Spencer Hot Springs district covers a group of low hills and are slightly separated from the main portion of the Toquima Range and are surrounded on all sides by alluvium and Tertiary tuffs. The hills are underlain primarily by Paleozoic sedimentary rocks which have been locally intruded by Jurassic aged granitic rocks. The Roberts Mountain Thrust Fault is exposed in the central portion of the district; eastern facies carbonate rocks of the Ordovician Anteleop Valley Formation are exposed west of the fault and chert and shale of

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

the western facies Vinini Formation, also Ordovician age, are exposed on the ridges east of the fault trace.

Ash flow tuffs of Miocene or Oligocene age are exposed in the southern part of the district.

Scheelite mineralization at Linka-Conquest occurs in lenses and tabular masses of skarn which have formed along the contact of the intrusive and limestones of the Ordovician Antelope Valley Formation. The contact zone is poorly exposed, and is cut by dikes and high angle faults. The granite mass is to the west of the contact, extending under tuffs and alluvium westward into Smoky Valley. The exposed carbonate rocks at Linka are all in the lower plate of the Roberts Mountain Thrust zone, and the thrust contact crops out a few hundred feet southeast of the Linka. At the Conquest Mine, east of the Linka, skarns have formed in rocks which are mapped as upper plate Vinini Formation. Complex folding and silification of the rocks makes structural and lithologic correlations in this area questionable, but it appears that skarns have formed in both upper and lower plate rocks. The lower plate Antelope Valley Formation carbonates, however, appear to be more favorable for the formation of skarns. If the Antelope Valley Formation is present beneath a thrust contact below the Conquest outcrops, larger skarn deposits could await discovery there.

Tungsten occurs at Linka-Conquest in the form of scheelite, and forms as fine to medium grained crystals along bedding and fracture surfaces in the skarn. Small amounts of molybdenite and chalcopyrite are also present.

The old shaft on the west edge of the district, east of the hot springs, explores an altered skarn zone, highly iron stained and fractured. This alteration is probably related to recent hot springs activity.

Selected References:

McKee, E. H. (1976) Geology of the northern part of the Toquima Range, Lander, Eureka, and Nye Counties, Nevada. U.S.G.S. P.P. 931.

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Johnson, A. C., and Benson, W. T. (1963) Tungsten resources of Nevada. U.S.B.M. Unpublished Manuscript, NBMG Files.

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