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Item 9

UNION DISTRICT

The Union mining district is located on the west flank of the southern Shoshone Mountains in Nye County, in T11,12N,R39E. The district is geographically separated into two more or less distinct mining centers, the Berlin-Ione area and the Grantsville area. The district is accessible along good roads from Nevada Highway 25, 50 miles south from U.S. Highway 50 and 55 miles from Austin. The district is partially located in the Ichthyosaur Paleontological National Monument and the Toiyabe National Forest.

The Union district was organized and the towns of Ione and Grantsville established in 1863 after ore was discovered by P. A. Haven. In 1864 Nye County was formed from Esmeralda County, and Ione became the first county seat. The county seat was moved from Ione to Belmont in 1867 and by 1869 mining activity in the district had begun to decline. The district boomed briefly from 1878-1885, but thereafter enjoyed only minor periods of activity up to World War II. Berlin was founded in the 1890's and became the site of mining activity until 1909. The tailings were milled from 1911-1914 and production in the area was sporadic. Mercury was discovered at the Quicksilver property near Ione in 1907 and became the chief commodity from the district up to 1920, with over 10,000 flasks produced for the period. Afterwards the annual production until 1944 was 50 flasks (Bailey, et al., 1944). There were small production figures for fluorite in the 1950's and for tungsten in 1960. More recently the Standard Slag Company drilled the district in 1971. The district has had nearly continuous activity since its organization producing over \$4 million (Kleinhampl, in press), principally from mercury, gold (lode and placer), and silver, with minor amounts of antimony, fluorite and tungsten.

The southern Shoshone Mountains are a narrow, north-northeast trending range on the west side of the Reese River Valley. Silberling (1959) suggests that the rocks underlying the Union district are a window of north-striking,

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



east-dipping Permian, Triassic, and Jurassic meta-andesite, clastics and calcareous bedded sediments. Most of the workings are in the Triassic Luning and Grantsville Formations. The sediments are flanked by Tertiary lavas and pyroclastics. Locally the sediments are intruded by Tertiary aplite and rhyolite porphyry dikes and a granodiorite stock intrudes near Ione. Quaternary black lavas cap the volcanic sequence. Locally the sediments are in thrust contact and overturned to the east. The area was deformed in the early Middle Jurassic prior to the emplacement of the Late Mesozoic or early Tertiary granitic intrusions. Localized fold and thrust faults developed, possibly related to the Nevada Jurassic orogeny (Silberling, 1959). East-west transverse faults cut the north-northeast trending normal faults which shape the Shoshone Range. Tingley (1971) suggests that the sediments north and south of Grantsville Canyon are folded into a north trending, south plunging anticline.

The mineral occurrences for the district are as follows: The gold and silver ore lodes occur as replacement deposits in brecciated limestone which are associated with the normal fault zones, in fissure quartz vein deposits, and in shear seams in Tertiary rhyolites (Kral, 1951, Kleinhampl, in press). Ore minerals include argentiferous galena, sphalerite, pyrite, and tetrahedrite. The tungsten minerals are located in the contact metamorphic zone associated with the intrusions. The antimony ore fills fissure veins in the north trending, steeply dipping fractured fault zone in the Luning Formation. Associated with the stibnite is pyrite, copper carbonates, silver and selenium (Kleinhampl, in press). Copper ore (sulfide and carbonate) was mined from east-west shear zones in Triassic metasediments (Kral, 1951). Cinnabar deposits are found at shallow depth in the Triassic clastics following fractures, near gouge zones, as painty films on fracture surfaces, and locally as replacement and disseminated deposits. Cinnabar is also found in Tertiary agglomerates, and in rhyolitic and andesitic tuffs (Kral, 1951). The fluorite ore is scattered throughout the district and



is associated with the north and west trending fault zones. The ore occurs as small irregular masses in replacement bodies in silicified zones adjacent to the faults. The 1971 drilling by Standard Slag indicated a shallow ore deposit with reserves of over 400,000 tons of 18.5%  $\text{CaF}_2$  at shallow depth (Papke, 1979).

Union Carbide Corporation has held property in the Grantsville part of the district for several years, and has been exploring the base metal-tungsten potential of that area.

During the recent (1981) field examination of the district, work was in progress at the Mercury Mining Company Mine, where the previously underground operation was being converted to an open pit. A mill was nearing completion and it appeared that it would soon be in operation.

#### Selected References:

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- Silberling, N. J. (1959) Pre-Tertiary stratigraphy and Upper Triassic paleontology of the Union District, Shoshone Mountains, Nevada. U.S.G.S. P.P. 322.
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