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Item 2

ALPHA DISTRICT

The Alpha (Irwin?) mining district is located in the north trending Sulphur Springs Range between Garden Pass to the south and Telegraph Canyon to the north in T23, 24, 25, R52E, Eureka County. There is access to all areas of the district from Nevada Highway 20 along reasonably good dirt roads.

The extent of early mining activity in the district is largely unknown. The oldest workings in the district consist of shallow inclined shafts and tunnels that were developed before 1910. A concentration plant was built approximately 3 miles west of the mines, but the treatment of ore was apparently unsatisfactory and it was abandoned (Emmons, 1910). During some period prior to 1951, limestone was mined for road beds (Forsman, 1951). The Old Whalen Mine had a period of activity from 1909-1913 when it produced small amounts of lead and copper, but there has been no recorded production since that time. Small shipments of silver and copper from the Prince of Wales Mine were made during World War I. Recent activity in the district consists of extensive drilling and geochemical sampling around the older workings.

The Sulphur Springs Range is a north trending graben-horst structure flanked on the east and west by north trending, high angle, en echelon faults. Silurian-Devonian carbonates of the lower plate of the Roberts Thrust fault are in contact with Permian conglomerates for approximately 11 miles in the southern part of the range (Merriam, Anderson, 1943) and with the Ordovician Vinini Formation in the north. Forsman (1951) suggests a north trending anticline in the middle of the range. The north trending, steeply east dipping reverse Irwin Faults (named by Forsman) brings the anticlinaly folded carbonate rocks into contact with Permian conglomerates. The fault cuts off increasingly more of the Permian sediments northward (DeJoia, 1952). The lower, undeformed carbonate plate was found to lie unconformably on the steeply dipping, highly faulted and contorted bedded cherts of the allochthonous Vinini Formation. This has been

J. Tingley + P. Smith (1982) Mineral Inventory of Eureka-Shoshone Resource area: NBMG OFR 82-10. 83-3/83-4

suggested to be the result of gravity slides during the Cretaceous (Forsman, 1952, Winterer, 1968). On the east facing slope of the Sulphur Springs Range are arcuate beach lines and terraces of Pleistocene Lake Lahonton (Forsman, 1951). Within the district ore minerals appear in replacement deposits in the east dipping Silurian Lone Mountain and Devonian Nevada Formations, both dolomites, in sheet zones that follow stratification (Emmons, 1910), and in breccia along north trending fault zones associated with the Roberts Thrust fault, gravity slide blocks, and basin and range faulting. Mineable ores include argentiferous galena, sphalerite, pyrite, and copper carbonates. The sulfide ores are oxidized to a depth of several hundred feet (Roberts, et al., 1967). Bedded and vein barite, calcite, and dolomite occur as gangue minerals and cement the fault breccia. The silicified dolomite is stained with copper oxides and calcite and silica fill vugs and fractures. Roberts (1960) suggests that since the Sulphur Range, which includes the Alpha, Mineral Hill, and Union mining districts, lies between the Shoshone-Eureka and Lynn-Pinon northwest trending mineral belts, that these districts identify a separate, less distinct, parallel mineral belt.

The Old Whalen Mine workings, which includes the Klondike Claims and the Vigilante Claims, are located on a northeast trending, steeply dipping fault contact between north trending, southeast dipping Paleozoic carbonates and the siliceous western assemblage. Sulfides occur in barite which, along with calcite, cements the fault breccia. The carbonate wall rocks have been silicified in the vicinity of the fault. The site has over 1,000 feet of underground workings at the main mine with peripheral surface workings.

The Pince of Wales mine consists of several thousand feet of workings following a north trending contact between the Ordovician Vinini Formation and the Devonian Nevada Formation.

The rocks along the contact are highly brecciated and silicified. Copper minerals occur as replacement pods in the limestone host rock and as a cement in the breccia. It was noted that the degree of mineralization of the limestone

decreases from south to north. Southeast of the Prince of Wales Mine, about one and one quarter miles, the MS Claims (Eastern Morn) follow a N10°-40°E southwest dipping fault and shear zone in the Nevada Formation. The fault breccia and shear zones are cemented by copper minerals and calcite with the mineralized zone marked by gossan outcrops. The mine workings total less than 300 feet.

The Frazier Creek Claims are located west of the district on a low hill approximately 1 mile west of Nevada Highway 20, along dirt roads which are often washed out. Most of the previous workings have been obliterated by drilling done within the last 5 years. Here, the medium grey dolomite host rock (Nevada Formation) is fractured, with copper minerals coating surfaces and infilling fractures.

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