USBM I.C. 6902
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Relief (Antelope Springs) District

WO. VANDERBURG 6268

Item 3

The Relief or Antelope Springs district is 22 miles east of Lovelock by fair desert road via Coal Canyon. The quicksilver deposits are at the south end of the East Humboldt Range.

The quicksilver deposits were discovered in 1912. A 12-pipe retort was erected in 1914 on ground later owned by the Pershing Quicksilver Co., and subsequently a similar retort was built on another property 1½ miles east. The two retorts operated until 1919 and are said to have produced 200 flasks of mercury. Interest in the district was revived by the boom in mercury mining in 1927, and several companies were financed.

The rocks are mainly sedimentaries consisting of limestone, sandstone, and shale. The cinnabar occurs in the limestone and sandstone at or near their contact with the overlying shale. The ore bodies occur in lenses 5 to 40 feet wide, the boundaries of which are determined by the lowest-grade material that can be profitably mined. The limestone bed is quite hard and dense, and little timber is required in mining.

The Nevada Quicksilver Mine, Inc., acquired 328 acres in the district, and in 1928 it was one of the largest producers of mercury in the United States. The Mammoth property was added to its holdings in 1929. The reduction plant built in 1928 consisted of a rotary kiln, 3 feet in diameter and 40 foot in length, with dust-precipitating and mercury-condensing equipment. The capacity of the plant was 40 tons per day. For a time production was 600 flasks per month. The company ceased operations in 1931, and the mill was dismantled and the equipment sold several years ago. The mine is developed by a shaft 450 feet deep.

The property of the Pershing Quicksilver Co. 3 miles south of the Nevada Quicksilver Mine, Inc., comprises 8 lode-mining claims, 160 acres of ground held under placer locations, and 160 acres of patented mineral land. The company became active in the district in 1926. A reduction plant was completed in February 1928. The company suspended operations in 1931 owing to a drop in the price of quicksilver.

The mine is opened by three adits. The ore is blocked out by raises and crosscuts at 50-foot intervals. The shrinkage system of mining is employed. The ore breaks well, and little timber is required for support.

The property is equipped with a power plant consisting of an 80 hp. and a 120-hp. Diesel engine. Electric current is also purchased from the Sierra Pacific Power Co. Water is scarce in the region, but enough for ordinary needs is piped from Antelope Springs 2 miles away.

Figure 6 shows a flow sheet of the reduction plant prepared from an article by Adamson.[11/] The rotary furnace has a capacity of about 50 tons of ore per day and the Herreshoff of 85 tons. The mercury from the condensers is run into a concrete launder that has an outlet into one of two submerged cast-iron pots holding 100 flasks each.

O. H. Oleson of Lovelock and E. E. Grelle own six claims and two fractions adjoining the property of the Nevada Quicksilver Mine, Inc. Development work comprises a 75-foot shaft, 400 feet of tunnels, and surface workings, a total of 1,000 feet. About 60 tons of ore left on the dump were taken out during development. Other claims are held in the district by various owners, but none were active when the author visited them.

There is a deposit of antimony about 6 miles northeast of the quicksilver deposits. George Senn first worked the deposit in 1864 and erected a small crucible furnace that is reported to have been unsuccessful. During the World War 400 tons of ore averaging 35 percent antimony was produced. The property has been idle for many years.