EDEN DISTRICT

LOCATION

The Eden mining district is located on the east side of the northern Kawich Range about 70 miles east of Tonopah. The district lies southeast of Kawich Peak along what Ball (1907) refers to as Little Mill Creek Canyon (now known as Eden Creek). Mines and prospects are located in the northwest quarter of Township 1 North, Range 49 East, Nye County.

HISTORY

Ball (1907) recounts that the first locations in the district were made in February 1905. Lessors were reportedly working near the mouth of Eden Creek in 1906 and 1907, and the presence of stamp mill remains there indicates early mining activity (Kral, 1951). Exploration was done in the district in 1923-24 and 1926-34, but no production resulted from that activity. There is no recorded production from the district and Kral (1951) assumes a total district production of less than $10,000.

When this district was visited in the Spring of 1986, new roads were in evidence to a new mill site at the Southern Gold Mining property near the head of Eden Creek. Mill equipment had been installed and appeared ready for use. Drilling equipment was present on new drill pads prepared east of the mill site and appeared to be awaiting the spring thaw to commence work for the year.

GEOLOGIC SETTING

The Eden district is entirely underlain by rhyolitic ash-flow tuff sheets of Oligocene-Miocene age which originated from the Kawich caldera. This caldera, which was the source for most of the tuff exposed in the norhtern Kawich Range, is centered to the northwest of the Eden district. The caldera margin is posutulated to pass in a north-south direction across Eden Creek near its mouth, then turn to the southwest, cross the range, and pass through the Silver Bow mining district on the west (Gardner and others, 1980). The Eden district is just within the southeastern margin of the caldera. Regional geologic mapping by Gardner and others (1980) shows the district to be cut by two major structural trends. A northwest-trending system of faults, parallel to the Bellehelen lineament, passes through the district. North-trending faults southwest of Eden Creek generally follow the curving margin of the caldera and may be related to the caldera ring fracture zone.

ORE DEPOSITS

Gold-silver mineralization at Eden occurs along steeply dipping, silicified shear zones in rhyolitic ash-flow tuff. In places, the rhyolite wall rock is intensely silicified parallel to the mineralized zones. The silicified zones stand out from unsilicified rock, and were called "dikes" by the early miners (Ball, 1907). Mineralized zones at the mines vary in width from veins of quartz 3 feet wide to bands of silicified rhyolite 8 feet wide intensely netted with quartz stringers. Much of the quartz is crustified and iron stained, and unoxidized quartz sometimes has a blue tinge due to the presence of fine-grained pyrite. Bladed quartz, suggestive of replacement of earlier

calcite, is also present (Ball, 1907). In ore samples collected from the district, only pyrite was seen associated with quartz. Ball (1907), however, reports pyrargyrite, cerargyrite, and native silver to be present.

GEOCHEMICAL RELATIONSHIPS

Samples taken of ores from the Eden district were very low in all metallic elements. Silver values ranges from 2 to only 70 ppm while gold values were all below our limits of detection. One sample was anomalous in arsenic, another in antimony; in all other samples these elements were below the detection limit. All base metal values were very low except molybdenum. Molybdenum values ranged from 15 to 200 ppm.

SELECTED REFERENCES

Ball, S. H. (1907) A geologic reconnaissance in southwestern Nevada and eastern California: USGS Bull. 308.

Cornwall, H. C. (1972) Geology and mineral deposits of southern Nye County, Nevada: NBMG Bull. 77.

Gardner, J. N., Eddy, A. C., Goff, F. E., and Grafft, K. S. (1980) Reconnaissance geologic map of the northern Kawich and southern Reveille Ranges, Nye County, Nevada: Los Alamos Scientific Lab. Map LA-8390.

Kral, V. E. (1951) Mineral resources of Nye County, Nevada: NBMG Bull. 50.

Lincoln, F. C. (1923) Mining districts and mineral resources of Nevada: Reno, NV, Reno Newsletter Publishing Co.