WILLARD DISTRICT

LOCATION

The Willard district is located at the north end of the West Humboldt Range in T28N,R32-33E, Pershing County. It is accessible by dirt roads from Interstate 80 or the Coal Canyon road.

HISTORY

According to Johnson (1977) intermittent mining activity for gold, antimony and clay has taken place in the Willard district since 1905. Gold was found at the Willard Mine in 1915 and a small boom ensued. The Willard Mine area was active intermittently from 1915 until 1951 and has been the site of exploration activity during the period 1975-85 for bulk-minable gold deposits by several major companies.

Antimony was discovered at the Johnson-Heizer Mine in 1916 and about 70 tons of 45 percent antimony was produced from one ore body. Subsequently about 157 tons of 30 percent antimony and 300 tons of 5-10 percent antimony were mined after 1946 from a separate ore body. The deposit is currently idle. The Adriene and Rosal mines have less development and production. The Adriene Mine has produced about 15 tons of antimony. The Rosal Mine has produced some ore, but no production records are available.

The clay deposits in the district have been described by Papke (1970).

GEOLOGIC SETTING

Metasedimentary rocks of Triassic and Jurassic age form much of the bedrock in the Willard district. The predominant lithologies are phyllite, shale, sandstone, quartzite, and limestone. The Mesozoic rocks are intruded by rhyolitic plugs and unconformably overlain by flows and pyroclastic rocks of Tertiary age. The Mesozoic rocks are complexly folded and faulted.

ORE DEPOSITS

Minor gold-silver production has come from the Willard group in S25-26,T28N,R32E and from the Willard Mine in S36,T28N,R32E. There are numerous old workings on the Willard claim group. The main workings are located on a N65°E trending, 50°-55°NW dipping zone of anastomosing quartz and calcite veinlets 2 m wide, which cuts quartzite and phyllite. The veinlets contain abundant vuggy quartz, pyrite, fluorite and barite. At the Willard Mine, old workings are located on E-W trending brecciated, silicified zones in phyllite and sandstone. Numerous vuggy, quartz veinlets occur associated with the silicified zones. Iron oxides are locally abundant. Numerous rotary holes have been drilled in this area.

The Johnson-Heizer antimony mine is located on a zone of N40°-60°W trending quartz veins which dip up to 60°SE. The veins range up to a maximum width of 1 m and cut quartzite and phyllite. The veins have been

worked from several inclined shafts and are explored by numerous cuts and trenches. Sulfide minerals present in the veins include pyrite and stibnite. Stibiconite is relatively abundant. The veins are best developed in quartzite and pinch out in phyllites.

The Rosal Mine explores a zone of quartz veinlets and stringers 2-20 cm wide in sandstone. The veins trend N40°-80°W and dip 55°SW to nearly vertical. The phyllites adjacent to the veins are sericitized. The veins contain pods and disseminated stibnite and antimony oxides. There are several small open pits and minor underground workings on the mineralized structures. There are several rotary holes on the property which are not more than a few years old.

The Adriene Mine is located on a zone of quartz stockwork veining, 3-6 m wide in sandstone. The zone trends N65°W. Phyllite adjacent to the brecciated and mineralized sandstone is sericitized, but is largely barren of antimony mineralization. The stibnite occurs as small lenses in 2-5 cm wide quartz veinlets. Antimony oxides after stibnite are abundant. The mine is developed by several open cuts.

GEOCHEMISTRY

No data available from samples yet.

SELECTED REFERENCES

Johnson, M. G. (1977) Geology and mineral resources of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89, p. 115.

Lawrence, E. F. (1963) Antimony deposits of Nevada: Nevada Bureau of Mines and Geology Bulletin 61, p. 248.

Papke, K. G. (1970) Montmorillonite, bentonite and Fuller's earthdeposits in Nevada: Nevada Bureau of Mines and Geology Bulletin 76.