from NBMG OFR 83-9
See also 83-10 for geochemical results.

(44)
Item 3

AURA DISTRICT

0400 0003

The mines of the Aura district are located on the east slope of the Bull Run Mountains north of Bull Run Basin and west of the Maggie Summit road. All the mines in the district occur in the northeast quarter of the USGS Bull Run 15' guadrangle on National Forest land. West of Porter Peak the district adjoins the Edgemont district. Some authors refer to these districts collectively or separately as the Centennial or Bull Run districts.

Since the mines of both the Aura amd Edgemont districts generally lie at elevations between 6,500 and 8,000 feet, much of the local geology is obscurred by low growing vegetation and trees. Also, many of the workings are caved making structural observations difficult. In general, the mines in both districts explore quartz or fissure vein and replacement deposits in limestones, quartzites and shales situated near intrusive stocks and dikes. The veins in the Aura district are generally silver rich with lesser amounts of gold and base metals. Those in the Edgemont district are gold-sulfide dominated (Decker, 1962).

Many of the mines in the Aura district are patented. During our examination of the district in September 1982, we observed recently staked claims and shallow exploration work on the land adjacent to a few of the minesites. Old drill roads (probably 5-10 years old) lie above Blue Jacket Creek in the southern half of section 23 and the northwest quarter of section 35 in T44N, R52E. Some minor trenching and reworking of dumps has occurred at a few of the properties. The most active mine in the district is the Big Four Mine located about one-half mile north-northeast of Columbia Ranch. The mine is currently being mined for gold and silver on a small scale. Ownership of the mine is private and access to the property is limited.

Silver and gold-bearing lode deposits were first discovered in June 1869 and by 1870 there were ten producing mines in the district (Granger, 1957). A short time later, placers were explored along Blue Jacket Creek, California Gulch, Colombia Creek and eventually Bull Run Basin. The placers were relatively unproductive. In contrast, the lode deposits were described as "comparatively rich" in gold and silver. Granger (1957) reports that 4,293,056 ounces of silver, 67,265 ounces of gold and some copper and lead were produced from 174,638 tons of ore mined through 1949. The district ranks as the second most productive silver camp in Elko County through 1939 (Granger, 1957). Minor production from the Aura Queen Mine, Big Four Mine and possibly a few others has occurred since that time.

The geology of the Bull Run 15' quadrangle has been mapped by Decker (1962). The area underlying the Aura district is composed of Cambrian through Devonian quartzites, phyllites and limestones with some intervening units of chert and shale. The bedding generally strikes east-west and dips to the north. The rocks are likely autochthonous, but represent a transition between the eastern and western assemblages. Correlations between these sediments and rocks elsewhere in Nevada, including nearby mapped quadrangles, has not been adequately done.

In the eastern part of the district, western assemblage cherts and argillites are thrust over the transitional assemblage along the Antler-style Trial Creek Fault (Decker, 1962). The upper plate rocks are overlain by rhyolitic tuffs and flows of Miocene age.

Throughout the district, the Paleozoic rocks are folded (locally and regionally), faulted and display a low-grade, early regional metamorphism which is locally overprinted by contact aureoles produced from the intrusion of at least five dioritic to granodioritic stocks. The stocks and their associated dikes and sills

lie in an east-west trending belt through the center of the district. The largest of these bodies, the hornblende-biotite quartz diorite Columbia stock, has been dated as mid-Jurassic in age (Coats and McKee, 1972). The stocks intrude both upper and lower plate sediments.

Several large range-front faults lie along the east-west margins of the Bull Run Mountains. In addition, a series of east and northeast-striking, high-angle faults are located east of Porter Peak in the most actively mined area. We observed that several of the vein deposits are emplaced along these high-angle structures and Decker (1962) notes the presence of gossan and silicification along their traces.

The most notable feature of the vein deposits in the Aura district is their consistent similarity from one deposit to another. The veins are typically composed of white milky quartz which contains a moderate to abundant amount of unoxidized sulfides. Their massive texture and great width (ranging from 1-6') indicate they are deep-seated in origin. The veins generally strike northeast and are emplaced forcibly across bedding or along faults. The host rocks are limestones, dolomitic limestones, quartzites and shales. Adjacent to the veins the sediments are bleached, marbelized, recrystallized or silicified. They show fracturing, iron-staining and veining by calcite and less commonly quartz.

The vein material sampled from the dumps contains pyrite, galena, copper carbonate, sphalerite and some tetrahedrite and chalcopyrite. Some oxidized material showed gossany portions and iron and manganese oxides. One unpublished mine report indicates the silver occurs as chlorides. The best exposed vein we observed was at the adit of the Aura King Mine. The vein, which was 1-2' in width, was folded and cross-cut by small faults. Post-intrusive deformation of the veins makes them difficult to follow along strike (NBMG Mining District Files, see Edgemont district).

A few mines explore replacement deposits developed in limestones along faults or bedding planes. At the Aura Queen Mine the limestone is brecciated and altered along a high-angle, east-west striking fault. A sample of altered rock from the dump was iron-stained, silicified and contains pyrite and cerussite. The replacement deposits, like the vein deposits, are said to carry high valves in silver and gold (Emmons, 1910).

In the eastern part of the district, the numerous workings at the Golden Eagle Mine explore grainy, weakly mineralized, upper plate calc-silicate rocks adjacent to the granodiorite Trial Creek Stock. Mineralized quartz vein which cut the intrusives are said to occur at this locality and the Big Four Mine although this was never directly observed.

Decker (1962) suggests the mesothermal veins in the Aura district are products of late-phase solutions which emanated from the crystallizing intrusive stocks.

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