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

(67)
Item 2

2820 0002

LIME MOUNTAIN DISTRICT

The Lime Mountain district is located in northern Elko County. The district occupies Lime Mountain, a 7,000' peak which forms the southern tip of the Bull Run Mountains. The main mines in the district are located in the eastern half of section 1, T42N, R51E about halfway up the east slope of the peak. The Lime Mountain area and most of the rest of the southern Bull Run Mountains is BLM administered. However, a few of the mines and the millsite are patented.

Much of the early history of the district is not known, but Emmons, 1910, indicates the district was discovered at about the same time as the Edgemont district which adjoins it on the north, i.e. circa 1870-1890. Production figures given by Smith, 1976, begin in 1918 and span through 24 years of mining activity. The main commodity produced during this time was copper. Significant quantities of silver, gold and zinc were also produced. In total, almost three times more silver was produced than gold (25,795 oz. Ag/8,423 oz. Au). Ninety-five percent of the recorded production was derived from the Lime Mountain Mine. Prior to 1918, the most productive mine in the district was the Eldorado.

Although the district has been relatively inactive since the 1950s, the presence of patented and unpatented claims in the area suggests at least a limited interest in the deposits. Since the main adits were driven, some minor prospecting has been done adjacent to the mines and east of Lime Mountain.

The geology of Lime Mountain as mapped by Bushnell, 1962, consists predominately of Cambrian sediments which grade from an older basal quartzite unit on the west into younger phyllites and limestones on the east. All of the prospected ore deposits occur in the limestones of the upper Cambrian Porter Peak Formation. Although not shown on Bushnells' map, several high-angle faults disrupt the otherwise consistent north-east strike and south-east dip of the bedded sediments at the mine sites. The Trail Creek thrust fault lies directly north of Lime Mountain. North of the thrust, the siliceous sediments of the upper plate are intruded by a plug composed of porphyritic andesite. The plug, which forms the southern half of Wilson Peak, is considered to be post-Miocene in age. It is the probable source vent for some of the Miocene and Pliocene andesitic and rhyolitic flows and tuffs which overlie lacustrine deposits south and west of Lime Mountain.

The mineral deposits of Lime Mountain are concentrated in a small area. The ore occurs in contact metasomatic deposits explored by four or more west-trending adits. According to Emmons, 1910, the limestones exposed at the mine sites are metamorphosed to marble with little development of garnet or other contact minerals. However, the latter mines were obviously developed in contact zones as several samples of dense, dark green and brown, garnet-diopside-epidote tactite were collected from the dumps during our field examination of the area. The tactite contains pyrite, chalcopyrite and galena, all finely crystalline and unoxidized. No scheelite was observed. According to Emmons, 1910, bornite and secondary chalcocite are present, occurring with calcite, quartz and white mica.

The ore zones are enhanced and also disrupted by faults. Numerous north and northeast-striking high-angle faults displace the bedded limestones which outcrop at the mine site. In addition, a pyritized and altered rhyolitic dike (?) intrudes limestones near the mines. The contact between the two rock types strike N60°W and dips 40°SW. The igneous rock is porphyritic in texture and probably hypabyssal in origin. Emmons, 1910, states that other porphyritic and diabasic dikes outcrop above the mine and 1000' to the northwest. The contact effects displayed in the altered and mineralized limestones may have been produced by the intrusion of dikes or possibly by a buried intrusive body related to the Wilson Peak plug.

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