1080 0008

165
Item 9

CHIEF (CALIENTE) DISTRICT

LOCATION

The Chief (Caliente) district is located on the southeastern tip of the Chief range, a southern extension of the Highland range southwest of Pioche. The major mines of the district are clustered in the northwestern quarter of T3S, R67E about six miles due north of the town of Caliente. The alternate name for this district, Caliente, reflects the inclusion in the district of several small prospects located within the city limits of the town of Caliente.

HISTORY

According to Tschanz and Pampeyan, 1970, deposits in the main Chief district (that portion in T3S, R67E) were probably discovered about 1868. The district was organized in 1870, and activity was reported for the years 1871, 1872, and 1986. Work was reported in the district again in 1907, and minor, intermittent operations continued up to 1953. Total production for the period 1870 through 1953 is given as only about $93,740, mainly in gold and silver with some lead and copper.

No information is available on the old prospects located on the point just north of Meadow Valley wash, just south of the northern city limits of Caliente. These prospects may be the gold workings described in 1904 press clippings (NBMG Files) as being "at Caliente", but no production records are available on them. These workings consist of a fairly deep shaft and several cuts, tunnels and stopes. No work has been done on them in many years.

No recent work was in evidence in the main Chief district at the time of our examination (1983, 1984). Many current claims cover the district, some areas had been trenched and sampled within the past two-three years, and one area, north of the Lucky Hobo mine, had reportedly been drilled by Texas Gulf International about two years ago.

GENERAL GEOLOGY

The southern Chief range in the vicinity of the Chief district is composed of a thick sequence of Cambrian Prospect Mountain Quartzite which is locally overlain by small thrust sheet or slide block remnants of Late Cambrian Highland Peak Formation. The range is essentially an east tilted fault block, and the limestone remnants are exposed mainly in the east side of the block. Within the mine area, the small outcrops of carbonate rock are usually altered to a skarn containing wollastonite, some garnet and diopside.

Several small bodies of diorite, in the form of plugs, sills, and dikes, intrude the sedimentary formations. Many of these bodies are quite small and some appear to occur along older fault zones (Callaghan, 1936). On the map of Tertiary rocks of Lincoln County (Ekren, et al, 1977), a large outcrop of altered intrusive rock is shown to lie just to the south of the main Chief district.

Regionally, the Chief district lies just to the north of the northern margin of the Caliente caldron complex. The Tempahute lineament (Ekren, et al, 1977) is described as passing through the Chief district in an east-west direction and the intrusive body south of Chief is one of the elements which define the trace of the lineament. The altered area at Caliente, to the south of the Chief mines, is locatd on the margin of the Caliente caldron complex and it may be infered that the gold prospects there as well as the Caliente hot springs may be related to the volcanic activity of the caldron complex.

ORE DEPOSITS

Mineral deposits in the central Chief district are of two general types, fissure veins or mineralized breccia zones in the carbonate-quartzite thrust or slide block contacts. The breccia zones are from 10 to 40 feet thick and are generally cemented by mylonitic material and iron oxides or by quartz and other vein minerals. The principal metals in both types of occurrences are gold, silver, and lead. All of the ore is oxidized, and galena is the only residual sulfide. Most of the ores are very high in arsenic, and the dump materials consist mainly of masses of gossan composed of silica, iron and manganese oxides and arsenic minerals. Cerussite and mimetite are present, and barite crystals were seen in gossan at the Gold Chief property. At the Advance mine, a vein deposit in quartzite, the wall rock is highly silicified and contains fine-grained disseminated sulfides.

The prospects to the south, at Caliente, explore stockworks quartz veins which occur in altered andesite. The stockworks are concentrated at the intersection area of a N20^{o}E and a N10^{o}W shear zone. Rock in the intersection area is laced with narrow quartz veinlets. The only minerals visible are iron and manganese oxides and some jarosite.

GEOCHEMICAL RELATIONSHIPS

With the exception of two samples from the Gold Chief area on the north edge of the district, all samples were high to very high in arsenic. Most samples were also high in antimony, lead, and zinc. Copper was low in most samples, low molybdenum values were reported in some, and four samples reported tin present. Barium was reported present in all samples but was high in only three.

SELECTED REFERENCES

Callaghan, E., 1936, Geology of the Chief District, Lincoln County, Nevada: NBMG Bull. 26.

Ekren, E. B., Buchnam, R. C., Carr, W. J., Dixon, G. L., Quinlivan, W. D., 1976, East-Trending Structural Lilneaments in Central Nevada: USGS Prof. Paper 986.

Ekren, E. B., Orkild, P. P., Sargent, K. A., and Dixon, G. L., 1977, Geologic Map of Tertiary Rocks, Lincoln County, Nevada: USGS Map I-1041.

Lincoln, F. C., 1922, Mining Districts and Mineral Resources of Nevada: Nevada Newsletter Publishing Co.

Tschnz, C. M., and Pampeyan, E. H., 1970, Geology and Mineral Deposits of Lincoln County, Nevada: NBMG Bull. 73.