

Cooper

Scouting report, Geoventures

NEVADA

MINERAL COUNTY

SANTA FE DISTRICT

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References: Nev. Bur. Mines Bull. 58, "Geology and Mineral Deposits of Mineral County, Nevada", 1961
USGS GQ 45, Geologic Map and text, Mina Quadrangle, 1954
USGS AMS Series topographic map, Walker Lake Sheet (1964 ed.)
ABIII scouting report for Geoventures, "Santa Fe District, Sunrise Flat Area", scouted 3/25/65

General: The Santa Fe district is one of several districts listed for me to examine for Geoventures. I looked at part of it -- the Sunrise Flat area -- a month ago, and was impressed with the possibilities of the remainder of the district as seen from a distance and on the maps. This present report covers my conclusions after two more days in the district, during which time I looked at about all of the mineralization except, I think, the Iron Gate Mine. I was not able to positively identify all of the mines I saw, however.

The district is actually composed of two geologically quite separate districts. As shown on Plates 1 and 2 of Bull. 58, the northern district is a zone trending WNW, from the Todd and Santa Fe gold-lead mines at the west end to the Copper Head at the east end. The southern district or zone is about four miles from the northern one, with barren country intervening, and trends east-west for a length of about three miles, from the Ideal Mine at the west end to and beyond the Mayflower Mine at the east end. Sunrise Flat covers the eastern extension of both zones. I will treat the two zones separately here. Both zones are predominantly copper zones; lead production is mentioned from the district, but I saw no sign of lead minerals, except for a very little at the west end of the north zone.

Northern Zone: On the geologic map (Plate 2 of Bull 58), the northern zone looks most promising for geophysical exploration, because of the extensive cover of alluvium and Tertiary volcanics. On the ground, however, it is considerably less prepossessing: it is a zone of widely scattered weak mineralization, with no suggestion of a single structure or a pattern that might point to a good target.

The Todd Mine at the west end is, as described, a narrow quartz vein in granodiorite, with a little gold and small masses of galena. The Santa Fe Mine is similar, though in diorite country rock, and there are several other, smaller diggings in the diorite on similar veins. The diorite alters more easily than the granodiorite of the region, and each vein is accompanied by a small yellow altered zone. Also in this area are larger masses of differently altered rock, as much as 100' wide and several hundred feet wide -- one of them lies a couple hundred feet south of the Santa Fe Mine, which is immediately beside Highway Nevada 23, and very obvious to the passerby. These altered zones are heavily ironstained and bleached, with some development of sericite and clay minerals and some silicification: as nearly as I can determine, they are all in and along dikes of rhyolite (quartz latite?) that intrude the diorite and adjacent limestone. None of them have been

more than cursorily explored by the old timers. I infer that the alteration accompanied or shortly followed the intrusion of the rhyolite, and is not a mineralization effect.

The geologic map shows, near the north edge of the zone, an east-west contact between felsic Tertiary volcanics to the north and limestone and granodiorite to the south. This contact is a nearly vertical fault, and along its entire length is marked by a zone of brecciated, silicified and iron-stained rocks a few feet to forty feet wide. Locally, subsidiary breccia zones make off into the older rocks to the south, locally there is some garnetization of adjacent limestone, and locally there is light copper staining in either the garnet, the breccia or both. I saw no sign of mineralization in the adjacent andesite, though it is somewhat soft and perhaps altered; I suspect that the fault is older than the andesite, and was mineralized before it was deposited, then fairly recent movement dropped the andesite down along it. There are numerous small diggings along the fault, and one large shaft, the dump of which is clearly visible from Highway 23 on a barren hillside a couple of miles east of the highway. Because it has the only dump in the region large enough to account for a 1,000' shaft, I suspect it is the Giroux Shaft, which on the map is shown as being a mile farther north, where there is no digging at all on the ground. The dump of this shaft has abundant unaltered granodiorite, much of which has films of pyrite on fractures, some altered and pyritized limestone, and much oxidized breccia. The outcrops here are typical breccia, heavily iron-stained, silicified and lightly copper stained, but the unweathered dump material shows no copper, no silicification, and little brecciation except in the limestone. I suspect that much of the work below the weathered zone was done outside of the main fault zone.

I found three of the mines shown on the map south of this fault: the York, the Emma and an unmapped one in the NW corner of the township a mile from the highway on the north side of the canyon running south toward Soda Spring Valley. All three are essentially the same: irregular garnetized zones a few feet to fifty feet wide in limestone at the contact with granodiorite. At all three the garnetite is more or less stained with copper, but I would estimate that at best they could produce only a few tons of say 3% Cu. The York and Emma are described in Bull. 58 as tungsten mines.

The Black Sam prospect, described in my report of 3/25/65, is the easternmost prospect of this northern zone, and in point of introduced elements it is the best show of the zone -- though its introduced element is iron, in the form of magnetite. However, some of its material is more heavily copper-stained than any I saw elsewhere in the zone.

Southern Zone: All of the southern zone and the surrounding country is shown on the 1" = 4,000' detailed inset map on GQ 45. The sketch map accompanying the present report is an overlay for that inset, to show the distribution of the mineralized areas.

The zone consists of three separate mineralized areas, as the overlay shows. The western area is on the pediment at the western foot of the mountain range, and is about half covered by alluvium. The mineralization in this area consists of altered thin-bedded limestones of the Triassic Gabbs formation. Iron and copper staining are mainly concentrated in clay-altered limestone beds adjacent to garnetite. Some of the mineralized material contains a little magnetite, but in some of the deposits I could find no magnetite. There are no extensive exposures, but it is clear that clay alteration and copper mineralization are quite strongly localized by favorable beds; garnetization may also be stratigraphically controlled, but appears not to be as extensive along bedding as the other two features. In one area on the pediment there is some evidence that a series of beds perhaps 50' thick are clay-altered and copper-bearing. The only exploration that appears to be more than 50' or so deep is the shaft shown on the overlay at the south end of the area; this shaft is probably 500' or more deep, and was mostly in limestone. Near the western edge of outcrops toward the north end of the pediment is one shallow shaft that has on its dump abundant unaltered granodiorite; this is the only intrusive rock I saw in the area. The Gabbs formation is predominantly shale and fine quartzite; this rock is hornfelsed throughout most of the area, and in most places carries very fine-grained disseminated pyrite, which causes it to have a light brown color in outcrop. The interbedded limestones, where not clay-altered or garnetized, are marbled. GQ 45 interprets this area as a northeast-trending syncline, and the outcrop pattern suggests that the beds generally strike northeasterly, but there is a great deal of minor faulting and folding.

The central area is a basin about 1/4 mile in diameter surrounded by steep hills. Most of the basin floor is covered by alluvium, and on the slopes all around are shows of copper mineralization associated with garnetite and clay-altered limestone. The strongest show is on the north side of the basin, where a zone 50' wide and several hundred feet long is irregularly altered along beds and fractures, with numerous pockets of strong copper mineralization. A shaft several hundred feet deep, with a large dump, explores this zone (this may be the Champion-Anderson shaft, described as being 400' deep); there are some fragments containing sulfides on the dump. On the east side of the basin there is a cluster of diggings a couple of hundred feet in diameter on copper-bearing partly-garnetized limestone in the vicinity of small granodiorite masses, all close to a very strong north-striking fault (probably the westernmost of the through-going faults in the Inset of GQ 45). The granodiorite exposed in small masses at several points in the basin is, for the most part, fresh and unaltered, but locally there are small areas of argillization or silicification (both weak). In the middle of the basin floor there is a small outcrop area of granodiorite that locally has a few narrow quartz stringers and traces of iron stain, but on the whole is unaltered. All of the country rock of the basin is, according to GQ 45, the limestone member of the Triassic Luning formation.

The eastern mineralized area of the zone is the one-square-mile area comprising the upper basin of New York Canyon. Most of the old diggings are around the edges of the area: the Mayflower Mine at the west edge, a cluster of glory holes up to 50' in diameter at the south end, and a great many adits, shafts and pits on the upper slopes of the basin at the east and north edges of the area. In the central, lower part of the basin there are scattered outcrops of jasperized, lightly copper-stained brecciated dolomite that have been little explored by the old timers. The main mineralization shows have some garnetite, but clay alteration is predominant; copper staining is abundant, though for the most part not very intense (because of the selective mining and shipping of the ore, probably). I found no magnetite. As nearly as I can tell, none of the workings extend more than 100' below the surface, except for the Wallstreet adit, which may penetrate far enough into its ridge to attain backs of as much as 400'. Judging by its portal (marked by a large timber orebin) the Wallstreet adit follows a steeply-dipping mineralized bed in the Luning dolomite for a distance of 1,000' or more, and judging by pits and shallow workings, the same bed is mineralized for 1,000' or more in the opposite direction. The Wallstreet is credited in Bull. 58 with production of \$856,000 in copper. The Mayflower Mine (marked by a long horizontal cut in the steep slope) has vertical stringers of copper carbonates up to 1" thick in a horizontal limestone bed overlying shales of the Gabbs formation and capped by Sunrise formation shales. The underlying shales are lightly impregnated with pyrite, the only sulfides I saw in the area.

Property Ownership: I did not attempt to determine any ownership in the northern zone of the district, except that as noted in my 3/25/65 report, the Black Sam property was located 1/19/65 by L. M. Lyons and H. Reddy of 413 G. St., Hawthorne, Nevada.

In the western area of the southern zone I found no location notices, though the ground has obviously been located at one or several times. Probably this area is open. In the middle area, I found one 4x4 post with the inscription "4612 HEC 4" -- this is clearly a patent survey post. Elsewhere in the middle area I found a location notice for the Hercules No. 1 claim, located 9/15/55 by Willis I. Barnes, Box 1053, Hawthorne. The eastern area appears completely covered (except for preexisting claims?) by the Lucky group of claims, located 11/17/62 by Jack C. Bishop and an illegible person; these claims have very neat, legal location pits dug by a skid loader, suggesting that they were intended to be pretty permanent claims.

Previous work: In the eastern area of the southern zone, there is evidence that some geophysical work has been done in the past year or two -- probably since the Lucky claims were located. Along the west side of the area, passing through the Mayflower pit, is a line of 1"x2" stakes neatly labeled "1E +00", etc., and extending at least to 37E (in the southern area of glory holes). I didn't notice that these stakes were accompanied by holes dug in the ground. East of the

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road through the basin, however, I found a line of crude stakes marked by flagging, with small pits beside each stake, indicating that at least this one line has been run by some electrical geophysical technique.

A handwritten signature in dark ink, appearing to read 'A. Baker III', with a long horizontal stroke extending to the right.

Arthur Baker III

Area scouted April 27-28, 1965

To accompany report: NEVADA
MINERAL COUNTY
SANTA FE DISTRICT
(4/28/65 scouting report by ABIII)
Overlay for Inset on USGS GQ 45, Mina Quadrangle
Distribution of mineralization in southern zone of
Santa Fe district.

Scale 1" = 4,000'

