

REPORT ON THE STEWART MINE HAWKEYE MINING DISTRICT
Gilpin County, Colorado 1934
By Robert J. Watson M. G.

INTRODUCTION.

The Stewart Lode is situated in section 23 of Township 2 south, Range 73 west, of Gilpin County. It lies on the crest of Stewart Hill at an altitude of about 10,300 feet, the greater length of the claim extending down the southeast side of the hill. A profile of this hill from the northeast showing the position of the Stewart shaft house is shown in Photograph No. 1. This shows the well-wooded character of the southeast slope of Stewart Hill.

Map No. 4 shows another profile from the southwest along the plane of the Stewart vein.

The mine is most easily accessible from Missouri Gulch. A fair road goes up Missouri Gulch road a branch road turns off to the west at the site of the old Douglas stamp mill, indicated on Maps 1 and 2 in the northeast corner of section 23. This branch road was surveyed. It was found to be in poor condition but a little work on it would make it passable for trucks to haul supplies of ore. The grades are not too great for motor vehicles. From the site of the Douglas mill to the Stewart shaft is a little less than one mile.

Map 2 also shows the relation of the Stewart to other claims in the vicinity the Independent, Texas, Caledonia and Proconier are all credited with a fair production. The exact amounts are difficult to obtain.

The surrounding area is well wooded, and mine timbers can be easily obtained on the Stewart claim and, if necessary, from adjoining unpatented land. There is at present quite a stream of water flowing from the upper tunnel. It would appear that this mine is sufficient for the operation of machines.

GEOLOGY OF THE STEWART LODGE.

The Stewart Lode lies in a band of granite gneiss on both sides of which are bands of schist of the Idaho Springs formation. This is shown on Map No. 1.

The Stewart Lode is a vein filling a fracture in the granite gneiss. It is generally conceded that in the Central City and Blackhawk mining districts the fractures in granite gneiss are more persistent and usually better mineralized than fractures in the Idaho Springs schist. This applies equally well to the Hawkeye district. Also, the northwest fractures such as the Stewart, Caledonia, Proconier, Independent etc. are the more important ones and have yielded a larger production than fractures running in other directions.

From a geological study of the mining districts of Central City, Blackhawk etc. which lie between four and five miles almost due south of the Stewart, it seems probable that heated magmatic waters originating in the monzonite and

monzonite porphyry were responsible for the mineralization of the fractures formed in the rocks by mountain-making movement. This same generalization may be applied equally well to the Hawkeye district. In the western part of section 22 there is a large mass of intrusive rock recognized as monzonite. A small dike of monzonite porphyry has been mapped in the northwestern part of section 23, less than one half mile from the Stewart Lode. These features are shown on Map No. 1.

DESCRIPTION OF THE STEWART MINE.

The Stewart Lode has been prospected and mined by means of a main shaft and connecting tunnel, several shallow shafts and pits, and a lower short tunnel. At the present time the workings are not in good condition. It is difficult to obtain information from the shallow shafts and pits. The lower tunnel is blocked at the portal. The shaft is accessible but rather dangerous due to rotten timbers and unfilled stopes. The upper tunnel is open and in working condition as far as the underhand stope (about 140' from the portal). For this report the shaft and upper tunnel were examined as much as could be done with safety. The pits and shallow shafts are surveyed and mapped. Samples for assay were taken from exposures that would probably yield useful information. The results of this work are shown on Maps 3 and 4. The extent of the stoping can be only inferred from the workings. This has been indicated by using the terms "stoped" and "probably stoped". The location of the ore shoot is well shown by the stoping. Without doubt only the richer portions of the mine were removed because of the high cost of treatment. The last leasers, J. Swindell and partner, attempted to mine small pillars left in the stopes. To do this they replaced timbers where it was necessary to work certain faces. Otherwise the condition of the mine has not been materially improved by their work. In a conference with them they admitted that the proper working of the Stewart mine was beyond their present financial condition and seemed to think that an expenditure of about \$2000 would place the property in good shape. As will be indicated later, the author of this report feels that any money spent on the shaft would be sheer waste. The search for the downward continuation of the ore shoot is the important thing and this could be carried on most efficiently from a tunnel below the present upper tunnel. However, if it is decided to work the adjoining claim, the "J.B." through the Stewart workings, there might be some ground for renovating the present Stewart shaft, but here again a tunnel from the Stewart would be much more efficient.

The Stewart vein occupies a strong and persistent fracture in granite gneiss. It has a strike of N. 30 degrees W and a dip almost vertical. It has been traced for practically the full length of the claim by shafts and pits, and from the position of prospect shafts on the claims adjoining to the northwest and southeast there is good reason to suppose that the same fracture has been followed beyond the bounds of the Stewart claim itself. The vein varies in width from a few inches to several feet but is not everywhere one solid mass of mineralized quartz. It

frequently consists of a number of small sub-parallel fractures filled with quartz and pyrite with intervening masses of the country rock. The sulphides consist almost entirely of pyrite where the vein was examined for this report. Chalcopyrite has been reported from it by the last lessees, and sampling works assays have shown the presence of a little lead and zinc.

DESCRIPTION OF VEIN EXPOSURES IN THE STEWART SHAFT.

While reading this description Map 4 should be consulted. At the point

"A", 60 feet below the collar of the shaft, in a small stope to the southeast, the vein is about 8 inches wide with some mineralization in the walls. The main streak is well oxidized and consists of quartz and limonite. J. Swindell, the last lessee, says that he took out 5 tons of ore from this streak (presumably a pillar left during stoping) which netted \$13 per ton by the old price of gold at the Polar Star stamp mill in Black Hawk. The efficiency of the mill is not known to be high.

At point "B", 88 feet below the collar, there is a larger stope to the southeast. Here the streak is narrower being not more than 5 inches, and oxidation is not noticeable. The vein matter is quartz and pyrite. Swindell says that he removed a streak in this stope lying a foot or so to the southwest of the main Stewart streak. It showed "yellow Iron" (probably chalcopyrite) and assayed \$25 per ton by the old price for the two tons mined. A piece of the main streak of the Stewart vein in this stope was selected for assay. It ran 0.24 oz. or \$8.40 by the new price. It must be remembered that this exposure represents a lower grade pillar which was left untouched by the old operators.

At the point "C", 123 feet below the collar there is a stope open to the northwest. In this stope the vein is 30 inches wide but consists of several sub-parallel fractures in granite gneiss filled with quartz and pyrite. The fissure filling in some parts shows combination quartz. Some streaks show oxidation even at this depth, particularly on the west side facing north. The dip is practically vertical. Samples taken from streaks in this face gave a maximum assay of \$3.15 by the new price.

At the same depth Swindell started a drift to the southwest, at "D" on the map. This is really a crosscut to intersect the streak carrying "yellow Iron" described above. At 11 feet from the shaft they struck a very thin fracture showing a little pyrite. They continued 8 feet more without further success and decided that their thin fracture represented the same streak as that containing the "yellow iron". From the present workings it would be difficult to know if their supposition was correct.

Opposite the stope "B", the stope has been covered with stulls and lagging and the level continued as a drift to the northwest. This covering proved to be very unsafe and the attempt to explore it was abandoned. According to Swindell, this drift is very short, probably as indicated on Map 4.

The shaft is filled with water up to the tunnel level and water is overflowing through the upper tunnel. It appears that there has been underhand stoping below the upper tunnel level right up to the shaft.

DESCRIPTION OF THE VEIN IN THE UPPER TUNNEL.

The upper tunnel was examined from the portal up to the underhand stope which begins about 140 feet from the portal. The tunnel is in fair shape up to the underhand stope having been retimbered in some places by Swindell. To reach the shaft new stulls and lagging would have to be fitted to carry the rails. At a point 125 feet from the portal the vein is well exposed on the east wall and measures about 12 inches. A steak of several inches in width well mineralized with pyrite was selected for assay. This was very low grade. All the vein exposures bear out the idea that the older operators removed practically all the higher grade ore above the upper tunnel level and were following the ore shoot downward by means of an underhand stope. This method of mining brings on a drainage problem at once.

NOTES ON THE SURFACE WORKINGS.

On the Stewart claim there are a number of shallow shafts and pits. Little information could be obtained from these other than the fact that the vein was encountered in most of them. However, at "B" on Map 3, a shallow shaft, a small ore platen had been constructed and pieces of ore left on it, Apparently removed from the shaft, were panned. The pannings indicated that the ore might run from 0.3 to 0.4 oz.

As indicated on Map 3 at the point "C", a cross vein junctions with the Stewart vein. It is poorly exposed in a few pits but apparently has been interesting to someone because several shallow shafts, probably at least 25 feet deep, have been dug on it. However, the present exposures do not reveal its dip which must be close to vertical. This cross vein appears to be composed of several small veinlets containing pyrite and a quartz gangue. The veinlets diverge and unite, and where several come together may form a solid mass of quartz up to 10 inches wide.

At the Point "I" on Map 3 a piece of "float" was found which was apparently from the Stewart vein as far as the character of the ore indicated. This piece which weighed over one pound and was thoroughly oxidized assayed 1.1 oz. or \$38.50 by the new price in gold. This, together with the fact that the southeastward extension of the Stewart fracture has been prospected by shallow shafts indicates that ore shoots of some size are quite possible on the southern end of the claim.

NOTES ON THE J.B. PATENTED CLAIM

Then J.B. follows the northwestward extension of the Stewart Lode. On the southeast end of this claim there are several pits and a shaft at least 50 feet deep, marked as "A" on Map 3. About 25 feet from the collar the vein, similar to that in the Stewart, is 28 inches wide and consists of 16 inches of true fissure filling and 12 inches of altered and pyritized wall rock. A good channel sample across the whole 28 inches assayed 0.32 oz. or \$11.20 by the new price. Anyone planning to operate the Stewart would do well to acquire rights on the J. B. because, due to bad water conditions, it can be mined most easily from the Stewart workings which would drain it. The J. B. has not been adequately prospected because of the water. Continuation of the Stewart workings northwestward would develop the potential ground.

ORIGIN AND POSITION OF THE ORE SHOOT ON THE STEWART CLAIM.

From this examination of the Stewart workings which are accessible it seems probable that the ore shoot pitches steeply to the southeast, as indicated on Map 3. Any new operations should be planned with this in mind. The present lower tunnel is probably too short to reach the downward, continuation of the ore shoot. From the vertical section on Map 3 it appears that a tunnel begun at the southeasterly end of the claim would develop some 250 feet of stoping ground below the level of the upper tunnel. How much of this ground has already been mined from the underhand stope is difficult to say on account of the water. However, it seems reasonable to predict that it is not great because underhand stoping is not an easy or efficient method of mining.

As to the origin of the ore shoot which has produced, according to previous reports, in excess of \$200,000 from milling ore, we can only cite the probability that it was due to the junctioning of the cross vein with the Stewart. The junction occurs at the northwest end of the open cut and the ore shoot seems to lie to the southeast of the junction. The local enrichment of a vein near a junction is a common occurrence in ore deposits.

CONCLUSION.

The future of the Stewart claim must be looked at in the light of its past history. In common with many old mines we note that only one ore shoot was found and mined. Treatment charges were high and only ore which would now be considered fairly high grade were mined. Generally the mine was discovered by locating the ore shoot. Having mined this rich ore, a prolonged search for another ore shoot was very discouraging and generally the property was allowed to remain idle except for an occasional lessee who thought he knew where certain parts of the high grade shoot were left.

The property has not been adequately prospected. We know that the fracture is strong and persistent, and in general well mineralized. The lack of rich ore in sight does not disprove the property. The shallow shafts on other properties along the Stewart vein show that there are local enrichments and some of these are probably present in the lower southeast portion of the claim. Its favorable position with respect to the J.B. adds to the value of the Stewart. The property is well worth careful, intelligent development to the extent of several thousand dollars.

(Signed) Robert J. Watson Boulder, Colo. June 1934 "Copy"