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Reno, Nevada, March 2, 1937

Mr. J. A. Fulton,
Mackay School of Mines,
Reno, Nevada.

REPORT ON JUMBO MINE, HUMBOLDT COUNTY, NEVADA.
Owned by George B. Austin and Associates.

CONCLUSION

This occurrence of gold and silver along with feldspar crystals in numerous stringers in shale is almost unique. For this reason it is very difficult to apply to the occurrence any knowledge gained from other mines. However, the large number of veins and stringers bearing high values in gold, combined with the ease with which the ore can be mined and the metal extracted, make the possibilities of this mining property very attractive.

The property is sufficiently developed and equipped so that the present mill can be put under a 25 to 30-ton per day production in a very short time, and at the same time continue the exploration work in the mine.

LOCATION

This property is situated in the Slumbering Hills, Humboldt County, Nevada, and is about 46 miles by road from Winnemucca, Nevada, 32 miles of which is oiled highway and 14 miles of unimproved county road. The property is also about 35 miles north by unimproved road from Jungo, Nevada, a station on the Western Pacific Railroad.

PROPERTY

Mining Claims.

Jumbo group of five claims; Jumbo; Jumbo No. 1; Jumbo No. 2; Jumbo No. 3, and Big Tom.

Blue Eagle group of three claims; Blue Eagle No. 1; Blue Eagle No. 2; and Blue Eagle No. 3.

Also the mining claim, Camp No. 1, and several mill sites in the vicinity of the mill which are sufficient for the impounding of mill tailings.

The mining claims have all been surveyed by a Mineral Surveyor so there should be no fractions occurring between the claims that might be cause for a discrepancy over property rights.

GEOLOGY AND MINERAL OCCURRENCE

The Slumbering Hills are made up of shale, which is probably either Permian or Triassic in age, rhyolite and granite. In a few places a capping of basaltic rock, indicating that at least a large portion of this area has been at one time covered with this basaltic capping.

GEOLOGY AND MINERAL OCCURRENCE, Continued.

The country rock covered by the Jumbo and Blue Eagle groups of claims is shale of both a thin-bedded and blocky nature tipped up to such an extent that the bedding planes now have a dip of from 55 to 70 degrees to the East.

About five miles south of the Jumbo group of claims there is exposed a large area of granitic rock which intruded the older sediments, emanations from which probably account for the mineralisation of the sediments along fissures and bedding planes.

The mineralising solution came up along a large number of fissures and bedding planes which are now shown to cover an area approximately 400 feet in width and 900 feet in length.

These fissures have been filled in part by crystals of a vein-forming feldspar (adularia?). The gold and silver occurs native along with these feldspar crystals within the fissures. At several places on the Jumbo group of claims these fissures or crystal stringers have already been proven to carry sufficient values to produce ore of a mineable width. With further exploration work there is little doubt that many more of these crystal stringers will be found, some of which will be close enough together to produce ore of considerable width.

If the assumption that the vein-forming crystals, gold and silver were given off and deposited along fissures by emanation from the underlying granitic rock, is correct, then the values should extend to considerable depth.

EXPLORATION AND DEVELOPMENT

The occurrence of gold in place was first discovered near the top of the ridge which lead to the driving of the tunnels shown on the map as Nos. 5 and 4. Other promising fissures were discovered in the course of exploring the surface, some of which have been opened up by tunnels.

While examining and sampling the property the various tunnels were numbered in the order in which sampled and are shown on the sketch map with the position in which each sample was taken.

At the time of sampling the property no surface samples could be taken due to deep snow.

Tunnel No. 1

This tunnel was started in order to explore a strong vein that had been found on the hillside above. At its portal this tunnel exposed a vein striking S 72 deg. E. and dipping 56 deg. S.W. which I have designated as the "Red Vein" on the map. This vein showed good gold pannings but to date no further exploration work has been done on it. Tunnel No. 1 was driven on into the hill until it reached the vein for which it was being driven and then continued along the vein exposing it for a length of 104 feet. This vein has proven to contain ore of good grade and has been partially stoped above the tunnel level. The average width as stoped so far has been about 3 feet but the vein appears to be widening at the face of the tunnel, as is indicated by sample #10 which was taken over a width of 7 feet.

EXPLORATION AND DEVELOPMENT, Continued.

Tunnel No. 1 Continued.

The Red Vein and the main vein in No. 1 Tunnel should intersect about 60 feet southeast from the portal of No. 1 Tunnel and both bearing good values, should be very productive at their intersection. Exploration work has not been carried far enough to expose this intersection as yet.

Tunnel No. 2

This tunnel was driven along several stringers of crystals and the fines from the tunnel were all hauled to the mill. The vein has been partially stoped above the level. Average width of stope about 4 feet.

At a point about 55 feet from the portal a crosscut was driven into the west wall and exposed several more stringers of crystals paralleling those in the drift. Samples Nos. 15 and 16 were taken from this crosscut.

Tunnel No. 3

This tunnel was started in order to open the ore exposed in tunnels 4 and 5 at a greater depth, and to facilitate mining.

At a point 26 feet from the portal a cross vein that panned some gold and having a width of 7.5 feet was cut by the tunnel. Samples Nos. 23-24-25 were taken from this cross vein.

Tunnel No. 4

This tunnel drifted in along several streaks of crystals that were contained within a width of 2 feet. This ore was of high value so was stoped to the overburden. Part of this ore still remains in the stope, about 120 tons as estimated. Samples Nos. 29-30-31 were taken from this broken ore.

This tunnel also exposed what appears to be two cross veins, one about 10 feet from the portal and the other 87 feet from the portal. As the stope was partially filled with broken ore at the time of the examination, the cross vein 87 feet from the portal was only exposed at the top of the pile of broken ore. Samples Nos. 26 and 27 were taken from the cross vein near the portal. Sample No. 28 was taken from the cross vein 87 feet from the portal.

A winze under the stope in this tunnel about 15 to 20 feet deep is reputed to have shown very high values but could not be sampled as it was covered with broken ore.

Tunnel No. 5

This tunnel was driven on the same parallel crystal streaks as was Tunnel No. 4 and for most of its length has been stoped to the surface. Cross veins were exposed in this tunnel also, one about 10 feet from the portal upon which no work has been done. Two others are exposed and crosscuts from the main tunnel have been driven out along them.

Tunnel No. 4 has not been driven ahead far enough to expose any of the cross veins in Tunnel No. 5.

EXPLORATION AND DEVELOPMENT, Continued

Tunnels Nos. 6 and 7

Tunnel No. 6 is being driven to explore the ore that was exposed in Tunnel No. 7 which attained such a shallow depth that no stoping could be done above the level.

A red vein containing some crystals is exposed 158 feet from the portal of Tunnel No. 6. #41 is a sample from this vein.

In the vicinity of Tunnel No. 7 there is reputed to have been exposed by surface trenching a large number of stringers paralleling those in Tunnel No. 7 and it is unfortunate that snow prevented the sampling of these trenches.

Tunnel No. 8

This tunnel is being driven in order to attain depth enough on the veins exposed to facilitate mining and at the same time explore the area between veins that are already exposed.

The difference in elevation between this tunnel and the top of the hill is approximately 250 feet.

This tunnel should cut the vein in Tunnel No. 2 in approximately 80 feet more and could then be continued into the hill to expose the other veins.

SURFACE EXPOSURES

It is very unfortunate that the surface was covered with deep snow at the time of examination as there is very little doubt that sampling of the surface would have shown large widths of mill grade ore.

One of the most promising looking areas is near the top of the hill and consists of a zone of thin bedded shale from 40 to 50 feet thick that showed good gold pannings when I visited the property last summer.

MINING METHOD

The mining that has been done so far indicates that the ore and wall rock will stand with little or no support. No timber has been required in the tunnels and stoping has been done by the open stulled stope method. Hence the mining costs should be comparatively cheap.

MILLING METHOD

This is an exceptionally easy ore from which to recover the metal values. The ore is soft and easily crushed and easily ground. The metal content is liberated with moderately fine grinding, leaving the metal in such a state that a large percentage can be immediately recovered on the amalgamation plates.

A high extraction can be made by first amalgamating and then either tabling, floating or cyaniding the amalgamation tailings.

WATER SUPPLY

Sufficient water for milling purposes can be obtained by pumping from wells at the edge of the valley about one mile from the present mill. The water from a well already drilled has proven pure enough for culinary purposes.

ORE TRANSPORTATION

Five miles of road have been constructed from the mine to the mill but in its present condition is inadequate for the transporting of any appreciable amount of ore and supplies. However, a small amount of improvement such as widening, straightening and surfacing would put the present road into condition.

The present mill is situated approximately 5 miles by road from the mine. The cost of trucking the ore from mine to mill should not exceed 60 cents per ton.

MACHINERY, EQUIPMENT, ETC.

The present buildings at the mine consist of two small but well constructed houses used as sleeping quarters and two buildings built of old railroad ties, one of which is equipped and being used as a boarding house. The other is being used as a storehouse.

Buildings at the mine are adequate to accomodate about 6 men.

Sufficient buildings have been constructed at the mill to house a mill crew of 4 or 5 men.

Equipment at the mine consists of one portable Gardner Denver air compresor large enough to operate two machine drills; one machine drill with air hoses, mountings, drill steel, etc; several hundred feet of 1-inch and 1½-inch air pipe; two mine cars and several hundred feet of mine track.

Mill

A mill complete with Deisel powered electric generator and electric motor-driven units; coarse crusher; coarse and fine ore bins; truck dumping platform, and water supply has been constructed, 5 miles by road from the mine. The capacity of this mill on soft ore of this type is about 25 tons per 24-hour day.

Water for milling purposes is obtained from a well approximately 1 mile from the mill and is pumped up to storage tanks at the mill.

The flow sheet of the present mill is very simple and consists as follows: Ore from coarse ore bin is crushed by a jaw crusher and passes into the fine ore bin from which it goes to a ball mill in closed circuit with a classifier. Overflow from the classifier passes over an amalgamator and directly to a concentrating table.

ORE RESERVES

At the present time the property is little developed and an estimate of ore reserves is impossible. However, if the production of the mine up to the present time is taken into consideration, the possibilities for ore are almost unlimited.

The present owners, who are to be highly commended upon their work, have had to rely upon the mine for the financing of all development and construction, which it has done even under adverse conditions. This alone should be a good recommendation.

Respectfully submitted,

Bernard York

Bernard York

March 2, 1937

SAMPLES

TUNNEL No. 1

No.

1 West wall of tunnel at portal. Iron-stained cross vein shown as "Red Vein" on map. Width 3.5'

2 East wall of tunnel at portal. Iron-stained cross vein shown as "Red Vein" on mpa. Width 2.2'

3 Vein that has been partially stoped above tunnel. North face of drift. Width 2.6'. Sample taken 17' N. of Survey Sta. #3.

4 North face of stope 18 ft. above tunnel. Width 3 feet. Sample taken 17 feet north of Survey Sta. #3.

5 Floor sample under stope. 5' S. of Survey Sta. #3. Width 3.7'.

6 Floor sample under stope. 15.8 feet south of Survey Sta. #3, Width 3.6'.

7 Floor sample under stope. 31.3 feet south of Survey Sta. #3. Width 4.4'.

8 South end of stope. 10 feet above floor of tunnel. 53.2 feet south of Survey Sta. #3. Width 2.4'.

9 Back of small stope above ore chute. 70.8 feet south of Survey Sta. #3. Width 2.5'.

10 Face of tunnel. 86.8 feet south of Survey Sta. #3. Width 7.0'.

~~11~~

TUNNEL No. 2

11 Across back of drift. 5.8 feet north of Survey Sta. #2. Width 2.5'.

12 Across back of drift. 9.9 feet south of Survey Sta. #2. Width 3.0'.

13 Across back of drift, 24.2 feet south of Survey Sta. #2. Width 1.8'.

14 Across back of drift, 39.4 feet south of Survey Sta. #2. Width 3.0'.

15 North wall of crosscut, 39.4 feet south of Survey Sta. #2. Width 4'.

16 North wall of crosscut from sample #15 to face. Width 5.0'.
Samples 14-15-16 constitute a continuous width of 12 feet.

17 Cut on south wall of drift, 16 feet south of Survey Sta. #3. Width 3.0'.

18 North end of stope about 10 feet above level. Width 5.0'.

19 North end of shallow winze, 6 feet south of Survey Sta. #4. Width 5.9'.

20 South end of shallow winze, 13 feet south of Survey Sta. #4. Width 4.7'.

21 Across back of drift 24.9 ft. south of Survey Sta. #5 and 4 ft. south of south end of stope. Width 3.0'.

22 Across back of drift 51.8 feet south of Survey Sta. #5 and 3 ft. N. of face. Width 3.3'.

SAMPLES

TUNNEL NO. 3

No.

The following three samples were taken from what appears to be a cross vein striking N. 27 deg. E, with a vertical dip. Combined width 7.5'.

23 South wall of tunnel 26.2 feet from portal. Width 2'.

24 South wall of tunnel 28 feet from portal. Width 3.2'.

25 South wall of tunnel 31.4 feet from portal. Width 2.3'.

TUNNEL NO. 4

Samples 26 and 27 were taken on what appears to be a cross vein having a width of about 7 feet.

26 South wall of tunnel, 6.5 feet from portal. Width 3.3'.

27 North wall of drift, 11.5 feet from portal. Width 5.6'.

28 Sample of what appears to be a cross vein striking N. 20 deg. E. and dipping 43 deg. E. 87 feet from portal.
Composite of cuts from north and south walls of stope. Width 1.9'.

Samples 29-30-31 are grab samples taken from broken ore in stope. Average width of stope about 2 feet. These three samples represent as nearly as can be estimated a tonnage of about 120 tons.

29 Grab sample from broken ore in stope. From 94 ft. from portal to 68 ft. from portal.

30 Grab sample from broken ore in stope. From 68 ft. from portal to 34 ft. from portal.

31 Grab sample from broken ore in stope. From 34 ft. from portal to 12 ft. from portal.

TUNNEL NO. 5

Samples 32-33-34 were taken from a cross seam striking N. 22 deg. E and dipping 70 deg. E.

32 South wall of tunnel opposite first north crosscut. Width 3 ft. Sample taken 15 feet from portal.

33 Across back of first north crosscut. 9.2 ft. north from south wall of drift. Width 1.7'.

34 Across face of first north crosscut 17.4 ft. from south wall of drift. Width 1.1'.

Sample #35 was taken on what appears to be a cross vein composed of thin bedded material showing some red stain and striking about N. 12 deg. E. and dipping 55 det. E.

35 North wall of tunnel about 10 ft. from portal. Width 4.6'.

36 Floor sample under stope. 35.5 ft. from portal. Width 2.9'.

37 Face of south crosscut 9.5 ft. south of drift. Width 3.0'.

TUNNEL NO. 5 Cont'd.

No.

38 Back of north crosscut, 46.5 ft. in from portal. 12.7 feet north of drift. Width 2.0 ft.

39 Back of north crosscut as sample #38. 25.7 ft. north of drift. Width 2.4'.

40 Face of north crosscut as sample #38. 40.3 ft. north of drift. Width 2.5'.

TUNNEL NO. 6

41 Sample taken across what appears to be a vein cutting across the tunnel at a sharp angle, 157.8 feet from portal and having a vertical dip. Width 2'.

TUNNEL NO. 7

This tunnel was driven along a small seam of crystals in blocky shale.

42 Sample taken across a width of 1 foot near right wall at face, 46 feet from portal.

TUNNEL NO. 8

Gouge and crystal streak crossing tunnel 43 feet from portal, striking S. 24 deg. E. Dip 80 deg. W. Width 1.0'.