

REPORT ON THE KINGSTON GROUP OF MINES OWNED BY MRS. GEORGE E. SPENCER AND J. A. MILLER, SITUATED IN KINGSTON CANYON, ABOUT THIRTY MILES SOUTH FROM AUSTIN, NEVADA.

Helena, Montana, Aug. 3, 1893.

### R E P O R T

The Kingston Group of mines owned by Mrs. George E. Spencer and J. A. Miller, is situated in Kingston Canyon, thirty miles South of Austin, Nevada.

The District was originally called the Bunker Hill Mining District, but by the consolidation with another District it was, in 1881, named the VICTORINE MINING DISTRICT, for the mine of that name, which was then operated by an English Company.

Kingston Creek has a general Eastern Course flowing into the Big Smoky Valley from the range of mountains which separates said Valley from Reese River Valley and there is an extensive mineral belt in these mountains.

The Manhattan group of mines at Austin have been most extensively worked having produced more than \$28,000,000.00 and is still being operated.

Kingston Creek is a large and rapid stream falling an average of 700 feet a mile for the first three miles of its course above the mouth of the canyon. The mill and buildings of which fuller description will be given later are situated at the mouth of the Canyon, at this point the stream carries over 600 miners inches of water and I should judge it to be at its lowest stage.

The Kingston Group of mines is situated about two miles and a half up the canyon and up on the North side of the Creek they are on the Southern slope which is very abrupt and rocky and one of the high spurs of the mountain, known as Bunker Hill, is the loftiest summit in Central Nevada, its elevation above sea level being 11,400 feet.

The country rock here is a metamorphic lime stone of the Silurian age and is underlaid with a stratified lime stone as



is shown by exposures further down the creek.

Over the limestone is a slate and it is between this line of contact the heaviest mineralization is found. In fact it is upon this contact the Morse ledge and its extension both East and West are located. The vein where developed showing a width or thickness of from 6 to 7 feet.

As usual in such formations the productive portion of the mine will be found in chambers of ore and it is for the further work of development directly in this contact vein that money should be expended. Another vein of cropping about 100 feet down the mountainside and wholly in the lime stone is parallel with the Morse ledge and has been traced throughout a very considerable part of the ground located, but all of the development of importance is found on the Phoenician claim.

Three locations of 1500 feet in length cover both the Morse and Phoenician claims and constitute the most important part of the property, while the fourth claim 1500 X 600 feet named the Chicago is an extension of the Victorine vein and lies to the Southeast of that claim.

Upon the Morse ledge which is the middle one of these claims above mentioned nearly all of the development work has been done, and I shall therefore enter into a detailed description of the Morse which constitutes the mine proper. I have myself traced the outcroppings of this lode a distance of over 3000 feet and find it at all points strong, well defined and mineral bearing. The contact between the slate and lime being distinct and characteristic. The general course of the strike of this vein is Northeasterly and Southwesterly through the length of the first two claims while on the third it turns to a more Northerly course by reason of the surface being cut by a deep gulch which has a general southwesterly course and runs into Kingston Creek. The dip of the vein is to the Northwest and at an angle of from 27 to 30 so far as exposed in the present workings. Near the middle of the length of the Morse location a tunnel has been driven in a general northerly course for a distance of 135 feet at the end of



which it cuts the vein, then following the vein an incline is sunk about 116 feet, still in a northerly direction on a dip of 25 degrees; this is not the exact dip of the vein the incline having been driven so as to cross slightly at an angle the true dip of the vein; the vein is large and strong and filled up with broken up and partly mineralized vein lime and it is only at the bottom of the incline that good ore is exposed, the ledge being 9 feet in thickness and my own samples and assays give a value of \$80.60 per ton "Eighty Dollars and Sixty Cents per ton".

The bottom of the incline is at a depth of only 125 feet from the surface and is evidently just getting out of the line of surface disturbances and coming into what appears to be a solid ore body and should be driven down deeper to prove the vein at this point. Work was suspended here on account of the bad air but this could be remedied and work continued if desired.

At a distance of 330 feet southwesterly from No. 1 tunnel another tunnel is driven in a northerly direction 107 feet to where it cuts the vein at a depth of 70 feet. A level was driven in the vein 42 feet in an easterly direction exposing a good vein of ore about 8 feet in thickness on an average value of \$33.00, 18 to 20 inches of the hanging wall is high grade and my samples taken there assayed \$88. "Eighty Eight Dollars". At a depth of 118 feet in this incline a level or drift was run to the northwest but broke into the foot wall and not following the hanging wall, an absolutely useless piece of work was the result. From a point where this drift was started the incline was continued 15 feet further but so flattened as to follow the hanging wall of the vein, exposing very fair looking ore one foot thick. The face of this incline is spotted with a very high grade of chloride and bromide ore in appearance as good as anything there is in the mine but there is not much of it.

The whole of this development while not having opened any very large amount of ore is of a promising character and would induce very considerable expenditures for further development and



if properly directed I am confident that ore enough of high grade could be extracted to pay for nearly all the work which will have to be done to prove this mine.

Near the northeastern end of the ground embraced within the Morse, a tunnel and flat incline, most of which is on the vein have been driven showing a vein width of from 5 to 7 feet. A foot of ore on the hanging wall will average \$29.20 per ton and is continuous throughout the whole incline.

On the lower vein but on the same plane a tunnel is run in on the vein about 70 feet showing a thickness of from three to four feet of fine ore. In my judgement the probabilities are very strong that the two veins will come together and at the point of junction one can almost certainly look for large ore chambers. For this reason I can see the desirability of doing some development work upon the lower vein, possibly upon the above mentioned tunnel which is near the southwest corner of the Morse location.

On the next claim northeast of the Morse location which is called the California an incline 43 feet long has been driven in the contact vein showing fully 10 feet in thickness and about 100 feet further on to the northeast the same vein has again been tapped by a pit about 10 feet deep showing quartz on the same character. The mountain is very steep and the opportunity to get the direct measurement is not very favorable but as I have already stated the Morse vein which is on the contact has been traced for 3000 feet fully establishing its character and continuity.

At a vertical depth of 33 feet between the lower and upper of the tunnels on the Morse ledge a working tunnel has been driven in the mountain a distance of 525 feet that will require to be driven the additional distance of about 700 feet before reaching the Morse ledge which it will cut, if the dip of the vein remains constant, at a depth of over 700 feet from the surface measured on the incline.

The vein being so flat and by reason of its character and



position likely to change its dip, I am convinced that more work should be done directly upon the vein before continuing the tunnel work and I am quite sure that the course of the tunnel would have to be altered in order that it may reach the vein in the shortest distance. At any rate it is quite certain that the working tunnel should not be continued until more of the vein itself be exposed by sinking one or both of the inclines which constitute the main working on the Horse ledge.

The claim southwest of the Horse is called the Provider and upon this but little development work has been done as the contact and the vein is covered pretty deeply by a heavy slide of broken slate. The three main claims embrace 4500 feet in length on the principal or Horse Vein and with the exception of about 600 feet which is on the Phoenician claim the same locations embrace the lower claim which is wholly in limestone.

The other claim the Chicago is located southeast of the Victorine Mine and has considerable development work upon it, three tunnels, one 145 feet long, one 60 feet long and the third about 40 feet in length, all showing a very large vein of gold bearing quartz, this vein lies flat and so far as shown plays only a minor part in the value of the whole property, but it is quite possible that ore shoots of great value may yet be encountered upon this claim.

The main contact between the Horse lode promises very richly for the opening of ore bodies and when you take into consideration the fact that if the three shipments of ore from this property, that the assay value per ton was \$92.00, \$96.00 and \$126.00 respectively and of this value fully one half is gold there could be no question but that the mines afford a very promising field for the investment of capital for development.

The average of assays of a large number of samples give a value of \$30.25 per ton of which 19.75 is gold and \$10.50 silver counting the latter as worth 70¢ per ounce and at this rate silver is valued throughout the report.



The averages of all the assays and samples which were taken from all parts of the property, 18 in number, gave \$33.25 per ton, \$25. of which was gold and \$8.25 in silver. The average of those samples taken on the lower or PHeocian claim was \$42.30, 29.40 in gold and 12.90 in silver; the gold value in the above ranges from 58% to 75% of the whole value and I believe that it may be safely estimated that 60% of the ore is gold and 40% silver. While at the present time silver is bringing a low price in the market I must nevertheless express my belief that the existence of so large a percentage of silver in the ore is a fortunate circumstance and goes to prove the continuity of the vein and retention of its values to a great depth.

In all mines where both gold and silver occur the values are more uniform and certain to a great depth. Many samples of this ore will give very rich assays but I have been careful in taking my samples to take only fair samples of the ore exposed, rejecting pieces which were noticeably high grade, in this way I have arrived at what is certainly a very fair estimate of what the ore would mill, namely \$30.00 per ton and the net result if all details were properly handled ~~xxx~~ would be quite satisfactory to owners. I would again state that in all of my figuring of values I call silver 70¢ per ounce, so it is proper to observe that with a higher price for silver quite an addition would be made in the average values herein quoted.

There is no doubt but what the large profits which might reasonable be expected from the mines such as this is likely to prove will come from the chambers of ore which in such formations are always high grade. The contact is the base of operations but the line should be prospected thoroughly. In every way the outlook for a productive property is very promising. The ore is a Bromo Chloride with some black sulphurates and the proper treatment is milling with pans



and settlers and frue vanners for the concentration of the tailings.

I am thoroughly famaliar with the process of ore reduction and similiar ores are successfully treated in Montana and a saving of 85% is effected. Of course it would be best to make a through test of the ores before any mill construction should be entered into.

And now I come to the description of the milling plant and the surrounding buildings. The mill is a large stone and brick structure with frame addition and contains 30 stamps with the usual accessories, 6 self feeders, and the rock breaker these with the pulleys, shafting and belting could be utilized for milling the ores from the Morse vein and by the addition of pans and settlers and probably frue vanners for the concentration of the tailings as complete a milling plant as could be desired would be had, the balance of the old mill consisting mainly of the Hears gas Chlorinations apparatus is wholly useless. Mrs. Spencer own one third of this mill and the remaining two thirds of the machinery that would be usefull to a new company could be purchased at a very low figure. The stamp mortar plates and self feeders are all of the best material and construction and just suited for milling ore from the Morse mine. The repairs to this portion of the machinery would cost very little and pans and settlers could be added to the present mill building which would be the proper course until such time as determination could be reached as to the construction of a mill at the mine probably at the mouth of the tunnel where a mill site has been located.

This mill was run by water power; an 18 inch pipe about 2200 feet in length being used to carry the water under pressure from the creek to the wheel. A small amount of repairs would be necessary to make this power available. I would call attention to the fact that a much larger power could be obtained by taking the water from higher up the dstream, also that as to the ultimate



location of a mill at the mine, ample power could be obtained to run 30 stamps and the machinery suggested, for the reduction of the ores.

It is rare that the facilities for working a mine are so exceptionally favorable and in making an estimate it is proper to take into account the power and fortunate situation of the mine as bearing upon the greater net profit which is obtainable therefrom, besides the mill building there is a stone warehouse, a stone blacksmith shop, a brick assay office 2 large frame buildings suitable for boarding houses and bunk house for the men. The total expenditure for putting in ten of the stamps, adding pans and settlers would not exceed \$5000. There is a sufficient amount of timber in the mountains to supply the needed fire wood and mining timbers and for building purposes brick have been manufactured right here in the gulch, costing less than lumber, which has been shipped by rail to Austin and then hauled 30 miles by team.

A good building stone and limestone for the purpose of making mortar is also obtained right here; cord wood costs \$3.00 cut per cord and in quantities as could be obtained for \$2.00 per cord.

I have other suggestions regarding the opening and proper development of the mines but will mention more of them at this time, the proper time would be after negotiations for the mine itself were closed. It is sufficient to add that the Kingston group of mines is well known in that locality and that all indications point to their being bonanza ore bodies in this great contact vein when further explorations shall develop the property.

The amount of money expended by General Spencer, the former owner, would seem to have put the mines on a paying basis had the expenditures been directed with the proper intelligence and caution but there was so much dead work done that might have placed to better advantage that the result was not what one



had a right to expect, that is, the proving of the mine and the immediate necessity of development on the vein which after that proved satisfactory might be supplemented and completed by the extention and completion of the main working tunnel.

In conclusion, the character, size and extensive vein promises largely for the opening of a very satisfactory mining property and the existence directly at the mine of water power in abundance and other facilities for the cheap working of the mine with buildings and a portion of the machinery now on the ground and available by paying the small purchase price, this combination makes the enterprise an especially attractive one and the very low and favorable terms at which this prospect can be offered, it is an opportunity rarely met with and as such I give my hearty endorsement.

(Signed) Frank L. Sizer

Mining Engineer.