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PRELIMINARY REPORT

On

HOULAHAN AND MAYFLOWER MINES at Luning

Mineral County, Nevada

By: Harry H. Hughes

August 11, 1961

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SUMMARY AND CONCLUSIONS

For the sake of brevity, two separate reports will be attached to this and will be considered a part of it. One is a comprehensive description of the Houlahan property, written by Mr. E. C. Watson in 1940. The other report is the result of a very complete sampling of mine dumps on both the Houlahan and Mayflower groups, and was made in 1951 by Mr. Howard W. Squires. There has been no operations on any of the properties since either report was written.

The Squires sampling is of particular importance at this time; and because of the clearly indicated care taken both as to thoroughness and accuracy, this writer is perfectly willing to accept the results of the sampling of the dumps both as to copper content and tonnages. Furthermore, from visual inspection of the dumps, this writer is convinced that Mr. Squires stayed quite safely on the conservative side, so that there is an ample factor of safety both as to tonnages and pounds of copper. It will also be noted that at one place in the Squires report, he says: "A total of 133,000 tons of copper bearing dumps was accounted for." However, since the sampled material totalled only 95,000 tons, this figure will be used in the estimates of recoverable copper in this report. This writer does not know Mr. Squires personally, but does by reputation, and has every confidence in

his integrity and ability.

These dumps are, of course, of vital importance because they alone indicate that installation of a 300 ton per day leaching plant is justified, and should return some profit. However, for a long-term profitable operation consideration of ore in place is more important. And it will be noted in the Watson report (page 10) that there are 250,000 tons in dumps and the mine (Houlahan). Since Squires assigns only 14,000 tons to these dumps there would remain 236,000 tons in place.½ Also, exposed on the face of the cliff at the Mayflower are at least 20,000 tons.

Thus, to estimate some values, we have as a start 95,000 tons of dump ore containing 4,050,000 pounds of copper (using round figures). Assuming an 80% recovery this becomes 3,240,000 pounds, which at 30¢ per pound indicates a recoverable value of $972,000.00.

Then with the estimated 250,000 tons of ore in place (of 2.5% copper), and assuming the same 80% recovery we have 10,000,000 pounds, which at 30¢ copper, is $3,000,000 gross recoverable value.

It must be remembered, too, that these figures are for only the Houlahan and Mayflower groups; and there are several other mines in the area which are available and will produce large tonnages of the copper ores with no doubt equal grade.

It is therefore this writer's considered opinion that these properties, with proper and economical management will make a very profitable operation over an indeterminate number of years.

PROPERTIES

The mine (described in the Watson report) now known as the Houlahan, consists of the following patented lode mining claims:

Willie Higgins
Norah Higgins
Saddle
Goodenough
Copper Butte
Hecla
Copper Bar

These were the original claims in the group; but to them have been added the

Annex No. 1
Annex No. 2
Annex No. 3
Annex No. 4
Footwall

The twelve claims in the group make up a compact area of more than 200 acres.

The Mayflower group consists of an unknown (to this writer at the moment) number of claims, the most important of which is the Mayflower itself. In addition there are the

Wall Street
Turk
Vacation
Little Jimmy

and others.

LOCATION See Watson's and Squires reports

HISTORY " " " " "

GEOLOGY AND ORE OCCURRENCES See Watson's and Squires reports

LOCAL CONDITIONS

The location of the subject properties have several distinct advantages to assist in furthering an economical operation. One is that since the mines are all located at short distances from the towns of Luning and Mina, no camp facilities would need to be provided to house and feed the workmen. This means a very considerable saving in capital investment. Another advantage is the millsite belonging to the Houlahan. This is located on the flat near the edge of a dry lake; and is at a central point to receive ores not only from the Houlahan and Mayflower mines, but also from others in the area. Furthermore, on the millsite there is an ample water supply within 40 feet of the surface.

A third significant advantage is that the millsite is only about two miles from the Hazen-Mina branch of the Southern Pacific railroad. Also, electric power is available in Luning from the Mineral County Power Company.

RECOMMENDATIONS

As noted under "Conclusions", this writer recommends acquiring the two groups of mines under discussion, and building the 300-ton per day leaching plant.

If this is done the following steps should be taken; and will be discussed in their order of importance and precedence.

The very first step is to take a representative composite sample of the ores and have metallurgical tests run to determine a flow sheet for the mill. This should be done by some pompetent metallurgist or metallurgical testing firm.

The ores all occur in limestones which have mostly been altered, but the writer has noted some unaltered limestone in places. This could mean that the limestones would be too acid-consuming for an acid leach so that the newer alkaline-leach method would be indicated.

Little more can be done while awaiting outcome of these tests; but if it should be considered desirable, this would be a good time to negotiate options on two additional properties which the writer has in mind. This is because of the possibility that when the word gets around that a formal legitimate operation is in the offing, the owners might raise the prices on their properties.

Assuming that the metallurgical tests turn out satisfactorily, the leaching plant will then be designed; and while being built there are a number of other steps to be taken:

First, the road to the Mayflower is badly in need of repair. Several short access roads must be built in order to be able to pick up and haul the dump ores. Estimates can be gotten from contractors in the area for all of this type of work, as this writer is firmly of the opinion that contracting is

cheaper than trying to do this kind of work on company account. There is an old saying that a mining company should not go into the trucking or earth moving business, and we believe it to be true.

There are innumerable other details to be attended to, but mostly of a minor nature and will be handled as they arise.

After the tests have been run and plant costs estimated, as well as getting estimates on costs of picking up and hauling the ores, it will be possible to work up within limits the over-all costs so that probable profits can be figured.

It must be noted that the 95,000 tons of dump ores will be treated in the leaching plant in less than a year; so during this time it will be necessary to prepare the various faces on both the Houlahan and Mayflower properties for mining all ores available for open pit operations. This is so that there will be a steady supply of ore for the plant after the dumps have been treated.

Also, as a longer range project, it will be in order to reopen all of the underground workings which have ore remaining in them, as at a later date it will be necessary to go underground for mining. This, naturally, will mean higher mining costs; but undoubtedly the grade of ores will be enough higher to justify the increased costs.

Again in the future, it will be desirable to make a geological study and map the entire area, as suggested in the Watson report, especially since the Houlahan and Mayflower are

actually one ore zone. This, however, can be deferred until the cost can be paid from operating profits, so that the capital investment will be held as low as possible.

Respectfully submitted,

Harry H Hughes

Harry H. Hughes, E.M.

Tonopah, Nevada
August 11, 1961