

Magnolia Mine ✓

NAME OLD NAMES PRINCIPAL ORE MINOR MINERALS

646

T8S R35¹/₂E SW¹/₄ Sec. 22
T R S

PUBLISHED REFERENCES

Oregon Metal Mines Handbook 14B:55
Lindgren 01:684
Pardee & Hewett 14:105
Swartley 14:136
Parks & Swartley 16:14B
Hewett 31:8, 10, 16

..... Grant COUNTY

..... Granite AREA

..... 5000 ELEVATION

..... ROAD OR HIGHWAY

..... About 21 mi. Sumpter DISTANCE TO SHIPPING POINT

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) W.A. Boyce Estate

Address San Francisco, Cal.

OPERATOR

Name of claims Area Pat. Unpat.

Name of claims Area Pat. Unpat.

EQUIPMENT ON PROPERTY

MAGNOLIA MINE, GRANT COUNTY, OREGON.

Attached hereto are reports by Mr. W. J. Elmendorf, Mr. Sanderson Smith, mining engineers, and extracts from the U. S. G. S. of '22, part 2, by Waldemar Lindgren, on the Magnolia Mine, situated four miles from Granite, in the Granite District, Grant County, Oregon. Accompanying Mr. Smith's report is a property map, and a sketch map longitudinal section of the vein, showing the development and a sampling of the workings which was made some years ago, probably about 1920. I have calculated the amount of the actual, probable and Possible ore under the present development, its value and net profit that can conservatively be expected from this sampling, obtaining the following results:-

| | | | | | |
|--------------|--------------|-------------|------------|------------|-----------|
| Actual Ore | 26,712 tons, | Total Value | \$204,063. | Net Profit | \$60,636. |
| Probable ore | 4,375 " | " " | 29,375. | " " | 4,375. |
| Possible Ore | 4,375 " | " " | 35,000. | " " | 8,750. |

This is under the present development only. Further development may and probably will uncover a much larger tonnage.

Detailed calculations follow,- 12 cu. ft. per ton assumed.
Dip of vein taken at 45 degs.

No. 3, or Upper Tunnel - 190 ft. on vein.

| Length | width | ht. | Val. per ton | Tons, | Total Value |
|---------|-------|--------|--------------|-------|-------------|
| 160 ft. | 5 ft. | 42 ft. | \$7.00 | 2,800 | \$19,600. |

No. 2, or Middle Tunnel - 470 ft. on Vein.

| | | | | | | | |
|----|---|-----|---|-----|-------|-------|---------|
| 60 | x | 4 | x | 20 | 13.20 | 400 | 5,280. |
| 50 | | 3.5 | | 56 | 11.70 | 816 | 9,547. |
| 50 | | 5 | | 50 | 7.20 | 1,160 | 8,816. |
| 30 | | 4 | | 106 | 6.00 | 1,060 | 6,360. |
| 30 | | 6 | | 130 | 14.40 | 1,950 | 28,080. |
| 30 | | 7 | | 140 | 5.60 | 2,450 | 13,720. |
| 40 | | 5 | | 140 | 10.20 | 2,330 | 23,766. |
| 25 | | 4 | | 155 | 9.20 | 1,290 | 11,868. |
| 25 | | 5 | | 155 | 1.70 | 1,530 | 2,603. |
| 25 | | 5 | | 155 | 7.40 | 1,530 | 11,322. |
| 25 | | 10 | | 155 | 6.20 | 3,229 | 20,019. |

No. 1, or Lower Tunnel - 1065 ft. on vein.

| | | | | | |
|-----|---|----|------|-------|---------|
| 70 | 5 | 50 | 6.40 | 1,460 | 9,344. |
| 70 | 5 | 55 | 6.60 | 1,600 | 10,560. |
| 50 | 5 | 60 | 8.00 | 1,250 | 10,000. |
| 400 | 5 | 10 | 7.91 | 1,660 | 13,178. |

(Extension No.2 tunnel ore 10' below that level x Avg. No.2 - \$7.91)

| | | |
|----------------------|--------|-------------|
| Totals | 26,712 | \$ 204,063. |
| Avg. value per ton | | 7.63 |
| Recovery, 90% - Loss | | .76 |
| Net Recoverable | | \$6.87 |

Costs - 50 tons per day basis

| | | |
|--------------------|------|------|
| Milling | 2.00 | |
| Conct. Treatment | .20 | |
| Overhead, etc. | .40 | |
| Net profit per ton | | 4.60 |
| | | 2.27 |

| | | | | | | | | |
|-----------------------|--------------|------|------|------------------|----|---------------|--------|---------|
| Between 1 & 2 tunnels | 300 | x | 5 | x | 15 | 7.00 | 1875 | 13,125. |
| | | | | | | | 4,375 | 4,375. |
| Aver. per ton | \$6.71 | 0 | Loss | .67 | - | Net recovered | \$6.04 | |
| Costs- | \$4.60 | plus | .44 | add. development | | | 5.04 | |
| | | | | | | Net Profit | \$1.00 | |
| Total Probable Ore | - 4,375 tons | | | | | | | 4,375. |

Possible Ore

Ore claimed by owner averaging \$10. per ton in last 70 ft. of No. 3 Tunnel. Assuming 150 ft. in ht. 4,375 tons.

Assuming value of \$8. per ton instead of \$10.
 Recovery 90%, and total cost \$5.20, including .60 additional devel. cost,
 net will equal \$2.00 per ton Total net \$8,750.

Ore above No. 3 tunnel is taken at an average value of \$7.00, but this probably is low, as samples of the dump of the tunnel show \$12.60 (an average of a large number of samples) But No. 3 samples on the surface shows 5 ft. at \$6.40, so that \$7.00 would appear to be quite conservative.

Ore shown by the last three samples, Nos. 5, 6, 7, in No. 2 tunnel, is omitted as being too low in grade. The No. 14 sample, showing 5 ft. in width, assaying \$20.20 was cut down to \$10.20 in val., but the No. 12 sample, showing 5 ft. assaying \$1.70 is included as is. As a matter of fact judging from the samples on either side of this sample, it is as much too low as the No. 14 is too high.

In the No. 1, or lower tunnel, while the reports state that 2,000 tons averaging \$9.00 were taken from the stopes and milled the sampling indicated on the map shows much lower values, and I have estimated a total for this tunnel of 5,970 tons at \$7.21, including in this assumption that the ore of No. 2 tunnel extends 10 ft. below that level at its average of \$7.01. Besides this I have taken only 70 ft. in length in each stope at the payable values shown of \$6.40 and \$6.60, and 50 ft. under the No. 32 sample of \$12.60, which has been taken at \$8.00. It would seem that when beginning the extraction of ore from these stopes the ore must have assayed as high as ore on the No. 2 level, else it would not have been stoped and milled in preference to the latter, and the owner claims that all of his samples have shown much higher values than those shown on the map.

Average dip of the vein is taken at 45 deg. for calculations, but the Smith report states that the dip is 30 deg. While this would show more ore, I am of opinion that the actual dip is steeper.

As Probable Ore I have assumed extensions of No. 3 tunnel 150 ft., developing 100 ft. of ore at \$6.50, although No. 1 sample on the surface is \$17.20, and the small dump about 40 ft. from there runs \$6.00 Also I have assumed 1875 tons of ore between No. 2 and No. 1 tunnels, being a block 300 ft. long extending 15 ft. below the 10 ft. of Probable ore. Probably most of the ore between 1 and 2 levels is or will be of payable grade. The average value assumed for each of these blocks is probably too low also, but it has been taken in order to be safely conservative.

The owner claims that the last 70 ft. of the No. 1 tunnel, which was driven since either of the reports were made, averages \$10. per ton. This is probably too high, and \$6. has been taken as this average, and a ht. of 150 ft. assumed. Inasmuch as there is only hearsay information as to this block of ground, I have taken it as "possible ore" only. If it actually exists with the values claimed, then it is actual and not possible ore, although the height is of course unknown.

The Possible and Probable Ore under the present development only is here considered. Extension of No. 3 tunnel would probably develop good ore bodies, after passing beyond the fault mentioned in Mr. Elmendorf's report, and additional development, both laterally and at depth should continually produce new ore shoots.

The No. 1 is the lowest tunnel that can be driven on the property, and sinking will be necessary to develop ore below this level. Lateral extensions for

more than 1500 feet within the property are possible, if the vein persists, which is more than likely, as all veins in this district are extensive. Three narrow veins that are being worked in the Buffalo, about one mile from this property, can be observed on the surface extending over two miles.

The above calculations, based on the Smith report, show an average for the actual ore of \$7.63 per ton, but the report of Mr. Elmendorf, a very competent and reliable engineer of excellent reputation, states that the ore in the upper and middle tunnels averages \$10.63 per ton, while \$9.00 is a fair average for the lower tunnel and the stopes therein. He states that the ore in the mine figures 32,000 tons, and that 20,000 tons may be taken as a fair estimate of what can be mined without further development to a grade of \$9. More work was done, and more ore developed after this report was made. If the average is \$9, the net profit will be \$3.50 per ton, and the total net for 20,000 tons, \$70,000.

Some sampling by other engineers more recently, I have been informed, showed average values of between \$10. and \$11. for most of the ore, particularly in the lower tunnel. The true values perhaps lie between these shown by the different reports, and a thorough sampling of the mine, especially of the lower tunnel, is necessary to determine it accurately. In any case the property would appear to be a valuable one, and worthy of serious consideration.

The estimated costs I am sure can be attained, the milling cost estimate being a little excessive, and on a basis of 75 tons per day this should not be more than \$1.50 to \$1.60 per ton. While perhaps fifty to sixty tons per day output would be sufficient until further development work has exposed additional ore bodies, a vein of this width and ore shoots of the magnitude indicated in this property should justify a daily output of 75 tons at least, and a seventy-five ton mill, or one that can be easily increased to this tonnage will cost very little more than a fifty ton plant. It should not be difficult to keep ore reserves developed for this tonnage.

The stamp mill burned entirely some years ago, but it would appear that such a process was entirely unsuited for the ore. It is probable that the gold is associated almost entirely with the pyrite, and I am of opinion only from inspection of the ore that flotation, followed by cyanide treatment of the concentrates would be entirely successful. Metallurgical tests along this line should be started first, and some preliminary tests made before any other expenditure to determine with certainty the treatment and recovery, although I would anticipate no difficulty with this problem.

Power is available from a Power Co's. line, about one mile distant.

Granite, four miles from the property, is eighteen miles from Sumpter, from which there is a railroad and first class auto road to Baker, thirty miles distant. This auto road is open all winter, and the mail stage runs every day. The road from Granite to the Buffalo Mine passes the property, and is open all winter for sleighs and wagons. Horses are used between Granite and Sumpter in the winter.

15 tons of actual ore have been developed per foot of development, and the cost of development on this basis will be 63 cts. per ton. It is fair to take an actual cost somewhat less, and it probably would not be over 50 cts.

Detailed estimates which I have made show that a capital of \$50,000. will provide a mill, the necessary mine equipment, surface equipment, repairs to present building, three in number in fairly good condition, and some working capital to operate this property on a 50 to 60 tons daily capacity. The net profit available on the actual ore, based on the Smith or lowest sampling values, would be more than \$60,000., while the probable and possible ore amounts to about \$13,000. more. If the ore and values in the lower tunnel equal the amounts claimed by the owner, or even somewhat less, the net profit on actual developed ore alone will amount to \$75,000. With systematic development the property should be made a continuous producer on a scale of at least 75 tons or more per day, making conservatively a net profit over all costs, including development of \$50,000. or more yearly.

(Signed) Wm. C. Madge

E. H.

REPORT ON THE MAGNOLIA GROUP OF MINES, GRANT COUNTY, OREGON.

The properties belonging to the Magnolia Group consist of seven quartz claims, with four acres for mill site, held under location rights. A complete list of properties is shown on the sketch plan.

LOCATION. The properties are well situated in Grant County, Oregon, four miles from the town of Granite, and connected by wagon road with Sumpter, 18 miles distant, connecting there with the railroad. The mine has been shut down for sometime, but has been re-opened and prospected the last six months. Under a former management a ten stamp mill was erected, and some 2000 tons of ore run through just as it came from the mine, and it pulped \$9.00 per ton, and saved about 65% of the values. and in my opinion if so equipped with cyanide treatment which it needs, will save 95% of the values.

FORMATION.

The formation is slate and argillit, identical with that of the North Pole, Columbia, E. & E. and Red Boy and Buffalo, in which all of the paying mines of this section are found. The ore is a white and black quartz, carrying sulphides which contain most of the values.

MINE.

The mine is situated on the slope of a mountain, and is worked and opened by three tunnels on the Magnolia, all run in on the vein. Tunnel No. 1 is the lowest, is 360 ft. long, and is 300 ft. deep at the face. Tunnel No. 2 is 495 ft. long, and is 86 ft. above Tunnel No. 1. Tunnel No. 3 is said to be 185 ft. long, but I was only able to get in 160 ft. All of these tunnels have been run in on the hanging wall. The vein shows 3 ft. 6 in. to 14 ft. wide. The course of the vein is generally northerly and southerly, dipping 30 deg. to the East; All of the levels are connected by upraises, making all good air throughout the mine.

TIMBER
There is an abundance of timber all over the property, and the surrounding country. It can be contracted for and delivered at \$2.50 per cord. There are from 800 to 1000 cords that can be bought at \$2.50 per cord, delivered. The timber is admirably suited for mining purposes, logging, etc.

ORE RESERVES

There are at least 30,000 tons of ore that can be depended upon, that give an average of \$7.68 from large samples, and a great tonnage is available with a little more development that will average much better. The samples shown on the sketch map were taken by myself, Mr. Longmaid of Montana, and H. J. Jorey, M. E. As our average was within a few cents of each other it may be presumed to be correct. A noticeable feature of the mine is that it is richest where widest. There is a break in the vein 760 ft. in. We caught the vein again in 54 ft., and it is now 5 ft. wide, and averages \$7.00 to \$8.00. The vein is opened at this point, and on the surface by small cuts and shafts some 400 ft. beyond the break and face of tunnel No. 3. As ~~the~~ found rich seams of ore running into the vein that assay as high as \$200. per ton on this ground just 127 ft. from present face of tunnel, it is more than probable that we shall find the largest and richest ore shoots beyond us, taking as a criterion the results shown in the North Pole, E. & E., Columbia, Red Boy and Bonanza mines, and Buffalo, where seams identical in character have intersected the main vein, and invariably have formed deposits ahead of us. And a fair average now would be \$9.00 to \$10.00 per ton. There is a ten stamp mill with rockbreaker, sizer, and four concentrators, three Johnson and one Frue vanner. 30,000 tons of ore are now in sight that can be depended upon, and can be mined and delivered at the mill at a very low cost. By utilizing the water power the cost of treatment will be extremely moderate.

Respectfully

(Signed) C. Sanderson Smith

(The assays are shown on the sectional sketch herewith)

Dear Sir:-

As requested by you I have examined the property known as the Magnolia Group of mining claims, and the adjoining claims, Ajax No. 1, Ajax No. 2 and Golden Star. A sketch of the property is enclosed.

Several quartz veins in the slates outcrop within the boundaries of the property, the most extensively developed of which is the Magnolia vein, which has a general course N. 53 deg. E. This is opened on the Magnolia claim by several open cuts and three tunnels, viz:- No. 1, 236 ft. long, and about 125 ft. deep at the face; No. 2, 490 ft. long, and about 125 ft. below No. 1; No. 3, 815 ft. long, and 86 ft. below No. 2. All of these workings are on the vein, and show it to be a well defined fissure, with clean walls and a strong gouge, varying in width from 2 ft. 6 in. to 14 ft. This vein is well mineralized with pyrite, and with a little blend and still less galena, and carries its values almost entirely in gold. Intruded porphyritic rock shows at many points in the vein.

The No. 1 tunnel was sampled every 10 ft. by a Mr. Thatcher, and his samples are said to have given an average of \$10.63 per ton in gold for its entire length. This value is confirmed by several other samplings, and may be taken as a fair average. The width of this ore is not shown, as many portions of the tunnel do not expose both walls, but it was in no place less than 3 ft. wide.

The No. 2 tunnel is more than 100 ft. below No. 1, and the vein and character of the ore are similar, with somewhat less oxidized ore in this lower working. At one point in this tunnel the vein is opened about 20 ft. south of the winze to tunnel No. 3 by crosscuts for a width of 14 ft. A great number of assays have been placed at my disposal, and it is safe to presume that the grade of ore in this tunnel is about the same as that in No. 1 tunnel. No. 2 is connected with No. 3 tunnel by two winzes, both of which are open and in the vein throughout.

Tunnel No. 3 is 86 ft. below No. 2, and is by far the most important working on the property. Like the other tunnels and their connections, this is on the vein, and I consider that an average width of 7 ft. for its first 760 ft. would be a conservative estimate. At that point a fault, which appears on the surface and in the two upper tunnels, has thrown the vein some 15 ft. or 20 ft. to the West, and while in the face 14" of ore shows, it is not in my opinion the vein, but a feeder to it. The vein will be reached by a short crosscut West. Two stopes have been started and partially mined in the tunnel, about 2000 tons of ore having been extracted. This ore ran \$9.00 in gold per ton, and is a fair average of what can be extracted from the mine upon the resumption of work, without discrimination or sorting. Two samples of mine, taken at an average width of 4 ft of the vein gave \$13.73 and \$11.95 gold per ton, but for purposes of calculation may be considered rather high.

All of the workings of the mine are well timbered, and the extraction of ore from the existing stopes could be economically commenced at once.

While the ore, as opened in the mine, figures about 32,000 tons, I consider that 20,000 tons may be taken as a fair estimate of what can be mined without further development to a grade of \$9.00, and is a conservative basis for calculation.

A surface tram from the top of the mill leads to No. 3 tunnel. The mill contains a 9 X 15 Blake crusher, ten 1000 lb stamps, amalgamating plates, sizers, and four tables of the 6 ft. vanner type. The mill is in excellent condition throughout, with steam power and 4,000 cords of wood on hand.

2,000 tons of ore, which gave an average value of \$9.00 gold at the stamps were run through, and \$1.80 gold per ton was saved on the plates. A pyrite concentrate was made, which from my samples shows \$20.77 per ton. Presuming that there were required 10 tons of ore to give 1 ton of concentrates, which is about what was

done, 57% of the values were lost, and a product which was not marketable, was made in the concentrates.

The installation and operation of a mill of this character for the saving of values in an ore of this class would warrant extended criticism, were it not for the fact that such examples of bad judgment in mill construction are to be found in all our mining districts. The only wonder is that so much as these figures show was saved.

The whole mine and mill are in excellent condition, the location almost ideal, wood and water abundant, and I am informed that a favorable bond can be had upon the property.

I have purposely omitted mention of the Ajax group, which is valuable ground, with a good vein well developed, and of the Golden Star, which, for its entire length undoubtedly owns the extension of the Magnolia vein. But both are important, and should be included on any bond on the property.

(Signed) W. J. Elmendorf.

Samples taken by Elmendorf, and assayed by
O. P. Moore & Co., Spokane, Wash.

| No. | 1 | .14 ozs. Au. | .2 ozs. Ag. | \$3.00 | Total Value |
|-----|-----|--------------|-------------|--------|-------------|
| 2 | .60 | | 2.4 | | 13.72 |
| 3 | .46 | | .44 | | 9.94 |
| 4 | .96 | | .93 | | 20.97 |
| 5 | .56 | | .38 | | 11.95 |
| 6 | .12 | | .2 | | 2.50 |

Gold at \$20.67 per oz. Silver at 55 cts. per oz.

GOLD BELT OF THE BLUE MOUNTAINS OF OREGON

By Waldemar Lindgren

U. S. G. S. Annual '22, Pt. 2

Gold Quartz Veins

General Statement,- The important veins in the Granite District are chiefly contained in the argillites, and present in general a similarity to those of Sumpter and Cracker Creek Districts. There are two prominent vein systems:- The first extends from the Cougar mine in a northeasterly direction towards the Magnolia and Buffalo, and the veins dip southeast at steep angles. The second is developed near the Red Boy mine, these veins having a northerly strike, and dipping West at angles of from 50 to 70 degs.

Magnolia Mine,- This is located about five miles northwest from Granite. The road leads up Granite Creek for four miles, and then up a narrow gulch for 1-1/2 miles. The elevation at the mill is 5,300 ft. Ascending some hundreds of feet further brings us to the summit of the divide between the North Fork of John Day and Granite Creek.

The Magnolia mine was bonded in 1899 by English capitalists, and a ten stamp mill erected. Work was discontinued after a short run, and in the summer of 1909, when visited, the mine was idle, and a large pile of concentrates heaped up outside the mill.

The developments consist of three tunnels, the lowest at mill level being 760 ft. long, giving a depth on the vein of 286 ft. The two upper tunnels aggregate 550 ft. in length.

The country rock is black argillite, or clay slate. At Granite Creek, below the mine, the slates are distinctly contact metamorphosed, indicating the proximity of the Granite contact. The slates near the mine show distinct fissility, strike N. 35 deg. W., and dip 60 deg. SW.

The vein strikes northeasterly, and is said to show from 3-1/2 to 14 feet of mixed quartz and slate. In tunnel No. 1 two pay shoots are reported. 180 and 140 feet long. In the middle vein is another pay shoot 400 feet long. In all 30,000 tons of low grade ore are said to be in sight. The richest ore is found in the upper tunnel. It is stated that during the short run of 2000 tons of ore with a value of \$9.00 per ton was treated. Only a small percentage of the assay value was saved. The ore contains a considerable amount of pyrite. The concentrates were found to assay .94 ounces gold, and 1.38 ounces silver per ton.

(Above are extracts from United States Geo. Reports)