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Item #62

IMPERIAL MINES

FAY - SILENT FRIEND AREA

White Pine Mining District  
Hamilton, Nevada

by

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RECOMMENDATIONS FOR ORE MINERAL EXPLORATION  
in the  
SILENT FRIEND - FAY AREA  
WHITE PINE MINING DISTRICT, NEVADA

SUMMARY

The dolomite rocks of the Silent Friend claim, the Fay claim and portions of adjoining claims, contain strong mineralization along numerous east-west fractures. The oxidized mineralized material runs high in silver, copper, lead and zinc. In addition to the mineralized "feeder" fractures there are several horizons of bedded ore fed by the "feeder" fractures. One of the most important horizons for bedded ore is that of sandy dolomite at the horizon of thin quartzite beds in the dolomite. At the Fay mine and at the Rocco-Homestake mine  $1\frac{1}{2}$  miles west, old stopes at the above mentioned "quartzite horizon" are as much as 5 to 7 feet high. The accompanying cross sections show proposed diamond drill holes to explore for bedding mineralization in the dolomite rocks of the Silent Friend claim.

INTRODUCTION

The Silent Friend - Fay area is about 8000 feet S.  $15^{\circ}$  W. from the Hamilton Townsite in the White Pine Mining District, Nevada. A graded road from Hamilton to Shermantown passes about 1200 feet west of the claims, but at an elevation about 300 feet lower. However, an old road, approximately level, leads into the Silent Friend claim branching from the Shermantown road about 4000 feet north of the Silent Friend claim. This old road can very easily be dozed out for truck access onto the Silent Friend claim.

More than sufficient water for drilling purposes is available from a spring and storage tank about two miles northwest of Shermantown. The haulage distance to the proposed drill sites is about three miles.

GEOLOGY

The rocks of the Silent Friend claim and adjacent area are dolomite comprising portions of Members 3, 4 and 5 of the Lone Mountain Dolomite formation. (See Bulletin 57, Nevada Bureau of Mines publication, 1960, by Fred L. Humphrey.)

Practically all ore mined in the district, other than the rich silver chloride ore of Treasure Hill, has



occurred in three contiguous formations, two of which are dolomite; the Lone Mountain Dolomite, the underlying Hanson Creek Dolomite, and the Eureka Quartzite underlying the Hanson Creek Dolomite.

There are two fault blocks of the Lone Mountain Dolomite exposed in the Treasure Hill area east of the Belmont Fault. One block containing the Silent Friend - Fay deposits, on the west slope of Treasure Hill, is exposed for a length of about three miles, in a north-south direction, gradually being faulted out to the north. The basal member of the formation is not exposed.

The second block, about one mile square, comprises the Rocco Canyon Fault block. It is east of the large Belmont Fault and about one mile west of the first mentioned block. Both blocks of rock are strongly fractured and faulted.

The Hanson Creek Dolomite and the Eureka Quartzite should underlie the Lone Mountain Dolomite in these two fault blocks.

#### DESCRIPTION OF MEMBERS OF THE LONE MOUNTAIN DOLOMITE

Member 1 (bottom) consists of about 450 feet of light gray, coarse-grained dolomite. Member 2, 300 to 400 feet thick, consists of a lower dark fine-grained dolomite which weathers to a faint reddish tinge, overlaid by 200 feet of mostly light gray, coarse-grained dolomite.

These are regarded as one member because there are beds of the dark, fine-grained dolomite in the light gray, coarse-grained dolomite. Member 3, which averages about 300 feet thick, is a very fine-grained, white porcelaneous dolomite. There is an unusual and significant series of thin quartzite beds and sandy dolomite beds in the upper part of this member. (This is a horizon that is particularly amenable to ore-mineral replacement.) Member 4 consists of approximately 300 feet of coarse-grained sugary, alternating medium and light gray beds, with a few dark gray beds. Member 5 is dominantly a dark to medium gray, mottled dolomite between 500 and 700 feet thick. It is gradational with Member 4 over a stratigraphic interval of more than 100 feet with alternating beds of coarse-grained, light gray dolomite and mottled, dark gray dolomite. The mottled appearance of portions of this member is commonly distinct on weathered surfaces. Small medium to light gray lenses are in a matrix of dark gray fine to medium-grained dolomite.



The basal portion of the overlying Nevada Limestone consists of thin bedded limestone with buff and reddish partings quite distinct from the overlying massive limestone. In the general area of the Silent Friend claim this thin bedded limestone is dolomitized and sometimes mineralized as in the Madison Adit No. 1.

#### ORE MINERALIZATION

One of the most favorable horizons for bedded ore in the Lone Mountain Dolomite is the quartzite - sandy dolomite horizon, about 40 feet thick, at the top of Member 3; but also there are a number of dolomite beds in Members 4 and 5 that are particularly amenable to replacement. These are distinctly seen cropping out in the southern half of the Silent Friend claim, and some are shown on the sections of proposed drill holes.

While certain favorable porous beds of dolomite are particularly amenable to ore mineral replacement fed by solutions following fractures, there are also important fissure or vein type deposits in the Lone Mountain Dolomite. Two important examples in the Silent Friend - Fay area are in the Imperial claim and the Onetha claim.

This type of deposit varies from the bedding replacement in that the replaced material was first ground up along a strong fissure or fault producing wide tabular bodies of broken and pulverized dolomite. This material would be very permeable and so could be easily "flooded" and replaced by mineral bearing solutions. These fissure or vein deposits are easterly bearing with steep dip and are obviously the same as other mineralized east-west fissures, except that they accomodated a greater amount of brecciation.

#### RESULTS OF RANDOM SAMPLES

Random samples of mineralized rock in place and from piles on dumps of various prospects and mine workings in the Silent Friend - Fay area were taken for the purpose of determining the type of mineralization (ore metals present) and the percentage range that might be expected. They were not taken for the purpose of attempting to indicate a developed ore tonnage.

##### Sample locations:

1. Bottom Fay Winze No. 1 below Station A.
2. In pillar north of Sample 1. Mineralization varies 1 inch to 1 foot thick.
3. Ten feet north of Sample 2. On top of quartzite bed.



4. Ten feet south of winze bottom.
5. Station B, main adit pillar, 5 feet thick.
6. Bottom second winze, north below Station C, 8 inches thick.
7. Surface mineralized fracture, ridge top 200 feet south 40° west from Station N.
8. Silent Friend Tunnel No. 1, on drill section H-1, 2, 3. First fracture underground, mineralization one foot thick. Bears east-west.
9. Silent Friend Tunnel No. 1, second fracture underground, mineralization, 1 foot thick. Bears east-west.
10. Silent Friend Tunnel No. 1, bedding vein near portal, 6 inches to 18 inches thick.
11. Station Z-12 (surface survey), from shaft.
12. North cut, Silent Friend, dump. Bedding mineralization. Section H-7.
13. Madison Adit No. 1, bedding mineralization 8 inches thick. Station N-20.
14. Madison Adit No. 1, 55 feet west of Station N22. Three foot thick thin bedded rock above mineralized beds.
15. Madison Adit No. 1, one foot thick mineralized beds below 14.

#### SAMPLE VALUES

	<u>Cu. %</u>	<u>Ag. oz</u>	<u>Pb. %</u>	<u>Zn. %</u>
1.	6.2	29.2	17.0	8.0
2.	4.7	3.7	3.7	2.9
3.	16.5	16.9	3.6	2.9
4.	2.8	18.5	11.6	6.7
5.	9.0	3.9	3.2	2.8
6.	4.2	13.9	26.0	2.9
7.	4.7	6.1	9.0	3.0
8.	9.5	23.3	9.4	2.6
9.	8.0	29.2	12.5	14.0
10.	10.0	19.7	12.7	14.0
11.	4.2	15.9	6.0	23.0
12.	15.0	52.5	20.0	2.7
13.	21.5	30.6	7.7	14.0
14.	0.05	0.09	0.1	0.3
15.	13.5	29.2	6.1	17.0

I think it of particular economic significance that copper is present in these assayed samples in amounts relative to lead and zinc. The general greenish color of most ore



samples I have seen throughout this area indicate that copper is one of the principal ore elements. The primary minerals are completely oxidized to dominantly copper, lead, and zinc carbonates.

Silver fluctuates in amount relative to one or more of the base elements, but it is not readily apparent that it is principally associated with any particular one of them.

Most of the above samples that were cut from rock in place represent ore thicknesses ranging between two inches and one foot. It is obvious that if sizable mineralized bodies averaging greater than one foot thick could be found, with similar values, they would be potential ore bodies.

One of the problems, in addition to finding an ore body or bodies of large tonnage, is finding a plant to treat the oxidized ore minerals.

#### RECOMMENDATIONS

As I previously stated, the rocks of the quartzite horizon at the top of Member 3 of the Lone Mountain Dolomite are particularly amenable to ore mineral replacement. Also there are a number of dolomite beds in Members 4 and 5 of this formation that are also amenable to ore mineral replacement.

The southern half of the Silent Friend claim contains rocks of these members at and near the surface. There are a number of steep dipping, strongly mineralized east-west fractures cutting these rocks, and there are a number of old "diggings" that were made while mining along bedding mineralization fed by these mineralizing fractures. Some of these are shown on the plan map. Assay sample number 10 is bedding mineralization on line of section H-1, and sample number 12 came from bedding mineralization on line of section H-7.

Five vertical cross sections are included that follow the lines of sections H 1 - H 2 - H 3, H 4, H 5 - H 6, H 7, and H 8. The numbers of sections correspond to recommended drill holes.

The proposed drill holes are shown on the cross sections, and the drill sites are shown on the lines of sections on the plan map.



The cross sections show known bedding mineralization and also the approximate depth to the quartzite horizon.

My preliminary recommendation is to drill proposed holes H1, H4, and H7A. These holes should be drilled to the depth of the quartzite horizon. The approximate position of the quartzite horizon is shown on the cross sections at a probable minimum dip of 25 degrees and a probable maximum dip of 35 degrees. In addition there is at least one other known horizon of potential bedding mineralization on each section (except H8) above the quartzite horizon; and there could be several because the bedding mineralization shown in each section is not the same stratigraphic horizon.

Hole H1 will have a depth ranging between 250 feet and 320 feet.

Hole H4 will have a depth ranging between 300 feet and 380 feet.

Hole H7A will have a depth ranging between 230 feet and 300 feet.

With any reasonable encouragement from one or more of the above three holes then hole H5 should be drilled. This hole would have a depth ranging between 230 feet and 300 feet.

Following the drilling of the above four holes, again with any reasonable encouragement, holes H7, H2, and H6 should be drilled followed in turn by holes H3 and H8. (Hole H7 might be moved 50 feet easterly depending on information from H7A.)

Most known mineralized fractures ("feeder fractures") are easterly bearing, having a steep dip approaching vertical. In order to explore by drilling for such mineralized fractures or "veins" wide enough to make ore bodies as in the Imperial claim, it will be necessary to have a drill rig that is capable of drilling angled holes. The previously proposed drilling program may give some encouraging data relative to the mineralized fractures or "veins", in which case an additional drilling program of angled holes may be contemplated.

A recommended project, separate from the drilling programs, is continued mapping and sampling in and around the Madison Adit No. 1. The two samples No. 13 and No. 15 represent bedding mineralization 8 inches thick and one foot thick respectively from the Madison Adit. They are among the richer samples collected for this report. Mapping and sampling should also be done in and around the old workings at the northeast corner of the Madison claim to tie in with the Madison Adit No. 1.



At the grade of samples No. 13 and No. 15 the ore "layer" would not have to be much thicker to make it potentially economic.