

Mill City, Nevada  
April 26, 1943

276  
J. H. 38

2410 0037

Air Mail

Mr. T. B. Nolan  
U. S. Geological Survey  
Washington, D. C.

Lakeview

Dear Mr. Nolan:

Subject: Supplementary notes on United Strategic Metals Property,  
Humboldt Canyon, Pershing County, Nevada.

Since your visit to this property in December, four hundred tons of ore have been mined from a quarry face and glory hole in the richer part of the ore body. Part of this ore has been milled at the Toulon custom mill, part at the Getchell mill, and part has been shipped to the Metals Reserve Corp. stockpile at Battle Mountain. The foreman at the property reports that the ore shipped has averaged about 1.5% WO<sub>3</sub>. A crosscut has been driven beneath the ore body at an elevation of 40' below the quarry floor.

This recent work has exposed the ore body so that a better appraisal of its worth can be made ( see sketch attached ). The ore zone at the surface lies in marble beneath a hanging wall of calcareous shale. The marble has been partly altered to a silicate rock that contains scheelite. This alteration is very irregular, and seems to have been controlled by narrow pegmatite stringers and irregular fractures. One large horse of unreplaced marble is exposed in the quarry face and glory hole. In the crosscut adit the marble-shale contact was intersected at the projected position, but was barren. The adit has been continued for 62' in barren marble, possibly an extension of the unreplaced horse at the surface, or possibly a horse not exposed at the surface. In either event its presence suggests that ore bodies along this horizon will be irregular and discontinuous.

I estimate that 400 tons of 1% WO<sub>3</sub> ore, and 1000 tons of low grade ore ( 0.25-0.50 % WO<sub>3</sub> ) are blocked out above the quarry floor. There is a reasonable expectation that extensions of the surface ore shoot may continue to the level of the crosscut. More extensive underground prospecting may develop 1000 tons of ore between the level and the quarry floor. No estimate of possible tonnage of ore below the level is warranted.

Mr. Jackson, President and General Manager of the company, was not on the property at the time of my visit, but his foreman states that the plan to convert the Standard mill to treat scheelite ore has been shelved. Their present plan is to erect on the property a 50-ton gravity mill that will yield a 15% WO<sub>3</sub> concentrate for shipment to the Salt Lake City plant. The cost of this mill is estimated at \$5,000.

Mining on this property has been temporarily suspended, and the crew is being moved to Pole Canyon in the Eugene Range, Pershing County, Nevada. Here the company has located claims adjacent to the Red Hawk property ( see memorandum of April 5, 1943 ). The foreman states that this ground is undeveloped, but that there are good showings of scheelite both north and south along the strike of the ore zone on the Red Hawk property.

In my opinion neither the conversion of the Standard mill, nor construction of a new mill is warranted at this time. The tonnage of ore blocked out on the Humboldt Canyon property is small, and prospect work is just starting on the Pole Canyon property. If subsequent exploration on these two properties and on the Red Hawk outlines any substantial tonnage of ore, a small centrally located scheelite mill would be desirable.

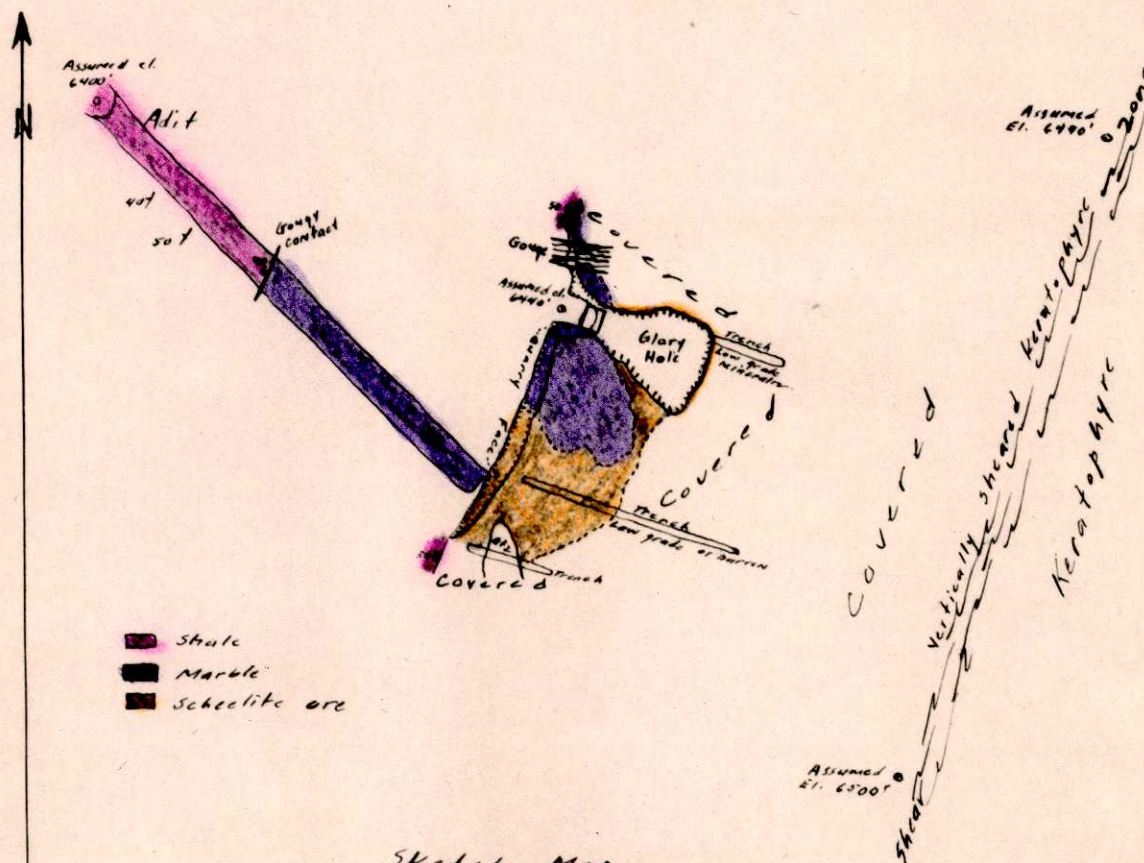
Sincerely yours,



M. R. Klepper

T. B. Nolan (3)  
S. G. Lasky  
D. M. Lemmon  
File

U. S. GEOL. SURVEY  
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ONLY



### Sketch Map

Property of United Strategic Metals Co.

Humboldt Canyon, Pershing County, Nevada

M. R. Klepper

U. S. G. S.

April 26, 1943

Scale 1" = 40'

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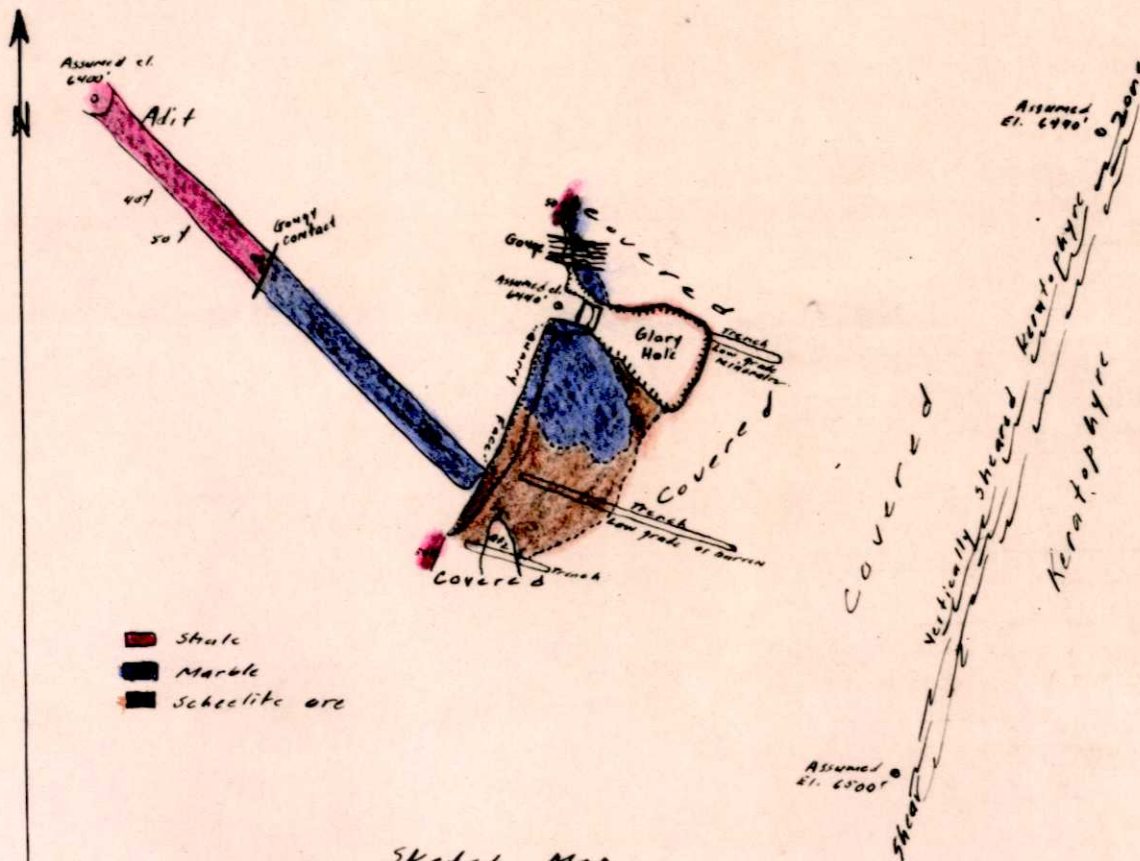


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T. B. Nolan (3)  
S. G. Lasky  
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April 26, 1943

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1.

O. T. D. J.  
Pershing Co.  
(winning claim)  
11-5-42  
K. J. J. J.  
11-5-42

MEMORANDUM ON SCHEELITE-BERYL PROPERTY OF UNITED STRATEGIC  
METALS CO. IN HUMBOLDT CANYON, PERSHING COUNTY, NEVADA

Location

The property of United Strategic Metals Co. consists of four claims (Lakeview group) in Secs. 6, 7 and 8, T. 31 N., R. 34 E., Mount Diablo base and meridian, Pershing County, Nevada. The claims are located on the north side of Humboldt Canyon near the north end of the Humboldt Range at an elevation of approximately 6400' and are reached by a  $4\frac{1}{2}$  mile dirt road (1) turning southwest from U. S. Highway # 40 at Humboldt, Nevada. Humboldt, a section point on the Southern Pacific R. R., is 32 miles northeast of Lovelock by Highway # 40.

History and Ownership

The claims were located about ten years ago by Mr. Fred Nagle of Lovelock and leased in 1942 to the United Strategic Metals Co. of Winnemucca, Nevada (2). Construction of a road from the mouth of Humboldt Canyon to the mine was started early in September and is now nearly completed.

Geology

The area is underlain by a thick sequence of dense dark blue limestone with some argillaceous members. Near the mine this sequence dips to the northwest at angles of between 45 degrees and 60 degrees and has been intruded by quartz monzonite (?) that has been silicified and sheared near the contact. This silicified intrusive crops out as cliffs southeast of the limestone belt.

- (1). The last mile of this road is now under construction.
- (2). Ben Jackson, Winnemucca, Pres. and Gen. Mgr.; Dr. Swain, Nampa, Idaho, V. Pres.; Thomas Salter, Winnemucca, Sec'y.-Treas.

In the vicinity of the mine the limestone-monzonite (?) contact is covered by talus from these cliffs. The sheared northwestern margin of the cliffs suggests that the contact may be a fault that parallels the strike of the bedding, but dips more steeply to the northwest.

### Scheelite-Beryl Deposit

Scheelite and beryl occur in a zone of contact metamorphic rock that lies between silicified monzonite (?) and a sharply defined <sup>hanging</sup> ~~footwall~~ of unaltered argillaceous limestone that dips at angles between 45 and 60 degrees to the northwest. The <sup>foot</sup> ~~hanging~~ wall contact is poorly exposed but 50' of barren contact rock may lie between the ore and monzonite (?). In the contact zone the sedimentary rock has been altered to a fine-grained, dark gray aggregate of sericite, quartz, fluorite and possibly diopside. Small crystals of scheelite and possibly some beryl are disseminated in this rock. Small pockets and stringers of pegmatite are common near the <sup>foot</sup> ~~hanging~~ wall of the ore body. These contain coarse white mica, quartz, fluorite and well developed crystals of creamy scheelite and colorless beryl. In a general way the grade of scheelite ore increases with the amount of pegmatite. Macroscopic crystals of beryl seem to be limited to the pegmatite zones or the contact rock adjacent to them. At the surface one or more of the minerals of the pegmatite have been leached out leaving cavities lined with brown powder, probably an iron oxide. The contact rock is cut by barren quartz veins and both are cut by the pegmatite stringers.

### Grade of Ore and Reserves

The ore body is cross cut in three places at 70-foot intervals. Each cut is about 40' long, 3' wide and 5' to 20' deep. From these cuts about 75 tons of ore estimated to contain about 0.75%  $WO_3$  and a few tenths of one per cent  $BeO$  has been removed and stockpiled.

The northwestern side of the ore body is limited by a <sup>hanging</sup> ~~footwall~~ of barren, argillaceous limestone. The best grade of ore occurs within twenty feet of



the <sup>hanging</sup> footwall. It is estimated that this zone averages between 0.5% and 0.75%  $WO_3$  and possibly 0.25%  $BeO$ , although there are a few 1' to 2' bands with a higher percentage of both minerals. The grade of ore decreases toward the <sup>foot</sup> hanging wall and it is not likely that a 25' to 30' width will average better than 0.5%  $WO_3$  and 0.1% to 0.2%  $BeO$ . There are no exposures between the almost barren <sup>foot</sup> hanging wall rock in the cuts and the sheared intrusive rock that crops out about 50' to the southeast. It is likely that the ore zone extends northeastward beneath the talus, but in the southwest cut the ore is narrower and of lower grade and may be pinching out.

If mineralization is continuous between the three cuts, and it seems likely that it is, the length of the ore body is at least 140'. Until the ore zone is more completely exposed and samples are taken for assay the probable width of mineable rock can only be estimated. It will have to be determined whether the entire zone, 20' to 50' wide, can successfully be mined as low grade ore or whether only one or two zones of 1%  $WO_3$  ore that are only a few feet wide must be selectively taken. A low grade zone 25' wide would contain about 300 tons of ore per foot of depth, but not more than 60 tons of 1% ore can be expected per foot of depth. It seems likely that no mineable zone contains more than 0.5%  $BeO$ , nor that the entire body contains more than 0.1%  $BeO$ .

#### Plans for Development

Within the next few weeks the surface of the ore body will be stripped of overburden and sampled. Tentative plans have been made for the Standard Cyaniding Co. of Lovelock to mill the ore if a body is indicated from which 100 to 200 tons averaging between 0.5% and 0.75%  $WO_3$  can be mined daily. According to this plan Standard Cyaniding would convert a part of the daily capacity of their idle 750-ton cyanide mill to flotation of scheelite. This mill is only 14 miles by road from the United Strategic Metals Co. mine.

Mr. Bradley of Standard Cyaniding states that it would not be feasible to convert less than 100 tons of daily capacity to flotation, and that conversion of an additional 100 tons of capacity would entail only a little more capital expenditure a slightly higher operating cost. He estimates that an expenditure of \$10,000 would be necessary. Milling of 20,000 tons of low grade ore would probably amortize this capital outlay.

The Callahan Lead-Zinc Co., Boise, Idaho is reported to hold promising scheelite claims in Pole Canyon in the Eagle Mountains, Pershing Co., Nevada. An attempt is now being made by United Strategic and Standard Cyaniding to line this property up as a contributor to the mill, if it is converted.

If development and sampling indicates that only the higher grade portions of the ore body can be mined, the ore will probably be trucked to the Toulon mill of Rare Metals Corp.

In either case tailing samples will be taken to indicate whether there is enough BeO in the ore to warrant an attempt at its recovery.

Pertinent data is tabulated below. E means estimated.

Mill	Rec'yw	Grade Conc.	Mining	Costs per ton in \$			Total	Lowest grade possible
				Crushing	Milling	(3)		
Stand. Cyanid.	90-95%E	40%E	2.00E	1.50	4.00	2.00	9.50	0.6% WO <sub>3</sub>
Toulon	80-85%E	65%E	4.00E	4.00	7.00	-	15.00	1.0% plus

(3). Includes freight, cleanup of flotation concentrates and amortization.

Treatment by Standard Cyaniding would require 100-ton daily minimum. Maximum daily tonnage that could be handled at Toulon would probably average 25.

T. B. Nolan ✓  
H. M. Bannerman  
S. G. Lasky  
D. M. Lemmon  
G. L. Allen  
File

*M. R. Klepper*  
M. R. Klepper  
Ass't. Geologist  
October 28, 1942

Appendix

Two samples were taken on the United Strategic Metals Co. property. These are being shipped to Mr. H. M. Bannerman, U. S. Geological Survey, Washington, D. C. by "Express Collect". I recommend that these be assayed for both beryllium and tungsten.

Sample No. U-1. Best grade beryl ore on property. Taken from ore stockpile. The sample may represent 3 tons out of a total of 75 tons in the stockpile, and probably was mined from near the footwall of the deposit. My estimate is that not more than 1 ton of this type of ore could be sorted from every 25 or 30 tons mined.

$W O_3 - 1.78$

$B e O - 0.36$

Sample No. U-2. Chip sample taken at 2' intervals around the walls of the open cuts. The average width of the mineralized zone sampled was 30'. This sample would represent the maximum possible width of low grade ore. It is probable that the mineable width will be less than the width of this sample.

$W O_3 - 0.51$

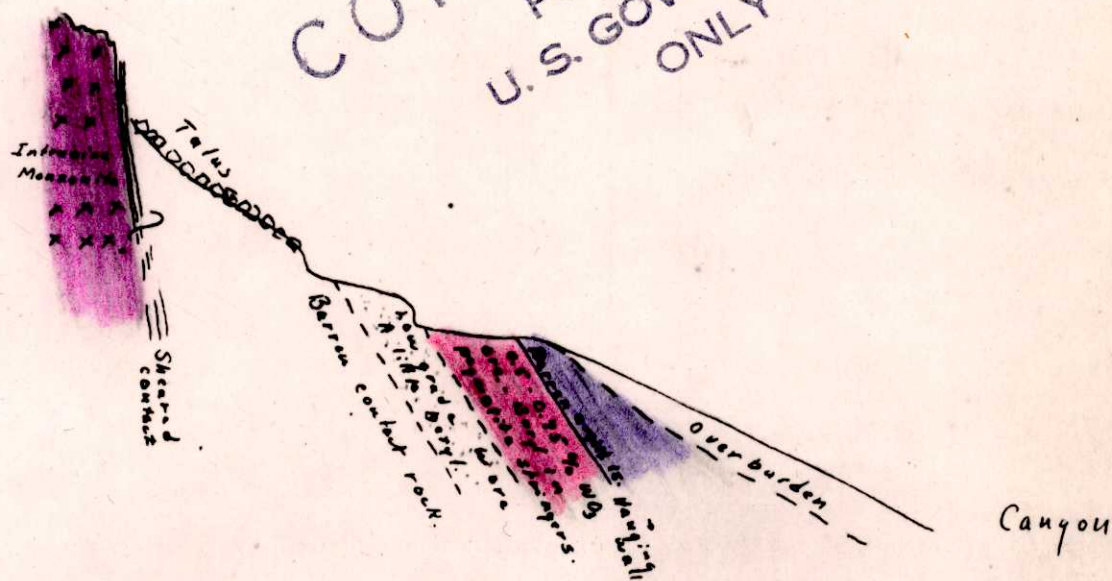
$B e O - 0.24$

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Copied from Klepper letter to  
Holen, 11-5-42.

(2nd, 11-9-42)

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0 50'

Vertical Section at Right Angles to the  
Ore body.

There is no observed structure that would pinch or cut off the  
ore body at relatively shallow depth.

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Report No. D-1584 Cont'd

For M. R. Klepper  
(Bannerman's memoranda of 11/12/42  
and 1/9/43)

Beryllium. Spectrographic tests

Semi-quantitative spectrographic estimation of beryllium in ores from  
Nevada. Plates T-90 and T-91.

For locations see D-1552 and D-1584

<u>Sample</u>	<u>Percent BeO</u>
D-1552 (U-1) .....	0.10
(U-2) .. .....	.08
(T-1) .. .....	.06
D-1584 (T-2) .. .....	.08

The spectrographic reference standards were those used in an earlier study (Report D-1497), beryllium in pegmatitic material), and were made by adding known amounts of beryl to the following base mixture.

6 parts quartz  
4 parts orthoclase  
1 part muscovite  
0.3 part  $\text{Fe}_2\text{O}_3$

The four Nevada samples differed in composition from the reference standards in containing considerably more Ca, Mg, and F. For this reason, these spectrographic results are to be taken as indicating merely the order of magnitude of the absolute amounts of beryllium. The relative amounts of beryllium among the four samples are accurately indicated in the spectrographic results.

U. S. GEOL. SURVEY

By K. J. Miska

**CONFIDENTIAL** Reported February 1, 1943.

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ONLY

R. C. Wells,  
Chief Chemist



MEMORANDUM ON SCHEELITE-BERYL PROPERTY OF UNITED STRATEGIC  
METALS CO. IN HUMBOLDT CANYON, PERSHING COUNTY, NEVADA

CORRECTION

Change "footwall" to "hanging wall" on page 2, lines 7, 14 and 27;  
page 3, line 1; and page 5, line 8.

Change "hanging wall" to "footwall" on page 2, line 9; and page 3,  
lines 3 and 5.

M. R. Klepper

Lusinsky + I leave today for Nixon. Will inform  
you as soon as established if more efficient address  
heard from you that Milluly + Live Page will be  
in Lovelock any day to do a little at Majuba

*Wooty*

Nov 4, 1942



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Location

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I estimate that 400 tons of 1%  $WO_3$  ore, and 1000 tons of low grade ore ( 0.25-0.50 %  $WO_3$  ) are blocked out above the quarry floor. There is a reasonable expectation that extensions of the surface ore shoot may continue to the level of the crosscut. More extensive underground prospecting may develop 1000 tons of ore between the level and the quarry floor. No estimate of possible tonnage of ore below the level is warranted.

Mr. Jackson, President and General Manager of the company, was not on the property at the time of my visit, but his foreman states that the plan to convert the Standard mill to treat scheelite ore has been shelved. Their present plan is to erect on the property a 50-ton gravity mill that will yield a 15%  $WO_3$  concentrate for shipment to the Salt Lake City plant. The cost of this mill is estimated at \$5,000.

Mining on this property has been temporarily suspended, and the crew is being moved to Pole Canyon in the Eugene Range, Pershing County, Nevada. Here the company has located claims adjacent to the Red Hawk property ( see memorandum of April 5, 1943 ). The foreman states that this ground is undeveloped, but that there are good showings of scheelite both north and south along the strike of the ore zone on the Red Hawk property.



In my opinion neither the conversion of the Standard mill, nor construction of a new mill is warranted at this time. The tonnage of ore blockaded out on the Humboldt Canyon property is small, and prospect work is just starting on the Pole Canyon property. If subsequent exploration on these two properties and on the Red Hawk outlines any substantial tonnage of ore, a small centrally located scheelite mill would be desirable.

Sincerely yours,

T. E. Nolan (3)  
S. G. Lasky ✓  
D. M. Lannon  
File

M. R. Klepper



