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UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

DMEA-2750, Tungsten Lead Company
Ferthing County, Nev.

Benjamin H. Sheahan, Mining Engineer
U. S. Bureau of Mines

January 29, 1953

DMEA-2750 (Tungsten)

Name and address of applicant: William Berger
Tungsten Lead Company
Room 7, Professional Bldg.
Winnemucca, Nev.

Name and location of property: Tungsten Lead Company, Pershing Co.,
Nev.

SUMMARY

The Tungsten-Lead Company, Inc. property consists of 16 unpatented claims located high on the east slope of the Eugene Mountains, Pershing County, Nev. The property is reached by following the Pole Canyon road 8.4 miles northerly from Tungsten, Nev.

The Middle Hill area which was formerly known as the Red Hawk mine was developed by a shallow 30-foot incline shaft. An adit now caved and filled was examined by a geologist^{1/} of the U. S. Geological Survey in 1943. The access road was constructed at Government expense in 1944 and a production of 266 tons of tungsten ore containing 266 units of WO_3 was produced. Narrow, lenticular, scheelite bearing tactite lenses occur in metamorphosed sedimentary rock with regional strikes of N. 10° E. to N. 50° E. and dips of 40 to 60 degrees to the northwest.

The North Hill and South Hill areas are developed by short adits, however near occurrences of small lenticular shaped tactite lenses contain insufficient tungsten mineralization to constitute ore.

The property was incorporated in 1950 and was promoted by J. G. Tomlinson of Winnemucca. An application for access road improvement

^{1/} M. R. Klepper.

was denied following an examination by engineers^{2/} of the U. S. Bureau of Mines in June 1951.

Mr. J. G. Tomlinson conveyed control in the property to Mr. William Berger, an investment broker of Santa Rosa, Calif., who now maintains an office at Winnemucca.

Mr. Berger claims that the corporation has spent over \$85,000. Since only 140 feet of underground work was done, some road repair work, and the production of 142.5 tons of non-commercial mixed ore, at least a fairly large portion of the money was not spent on the property.

A request for a Government exploration loan was made by Mr. Berger in October 1952 and the property was examined on December 2 and 3, 1952 by an engineer^{3/} of the U. S. Bureau of Mines jointly with geologists^{4/} of the U. S. Geological Survey.

CONCLUSIONS

The tungsten mineralization is too low grade, and the scheelite bearing lenses are too small to warrant an exploration loan.

The applicant for the exploration loan lacks necessary qualifications to conduct an exploration project competently.

RECOMMENDATIONS

The exploration loan should be denied.

TIME SPENT ON PROPERTY

The engineer and geologists examined the property from 10:00 A.M.,

^{2/} E. J. Watson and B. H. Sheahan.

^{3/} B. H. Sheahan.

^{4/} R. J. Roberts and D. C. Arnold.

Dec. 2 to 5:00 P.M., Dec. 3, 1932. The Eugene Mountains in this region were partly covered with snow. Mr. William Berger and Marion E. Price, his supervisor, accompanied the examination team.

NAME AND LOCATION OF PROPERTY

The Tungsten Lead Company, Inc., Red Hawk mine, is located on the east slope of the Eugene Mountains in the Central Mining District, Pershing County, Nev., and is about three miles northwest of the Nevada-Massachusetts Tungsten mine.

The property is reached from Winnemucca, the nearest town, by following U. S. Highway 40 southwesterly 27 miles to Mill City, turn right and follow paved road toward tungsten 3 miles to road fork opposite the mill building, turn right and follow an unimproved road northerly 3 miles to a road fork leading westerly into Pole Canyon, follow the Pole Canyon road 5.4 miles to the property. The total distance by road from Winnemucca, Nevada is 43.4 miles to the Middle Hill (Red Hawk shaft).

The sixteen unpatented Tungsten Lead mining claims No. 1 to No. 16 are located in sections 16, 17, 20 and 21, T. 34 N., R. 34 E., at elevations from 6200 feet to 7000 feet.

CONDITION AND SEASONAL ACCESSIBILITY OF ROAD TO PROPERTY

The paved roads from Winnemucca to Tungsten are all weather and are seldom closed. The partly improved road from Tungsten to the property in Pole Canyon is open most of the year except during periods of heavy snow or rain. The property was reached by four wheel drive vehicles in December 1932.

COMPETENCY OF APPLICANT AND OPERATING PERSONNEL

The applicant, Mr. William Berger, is an investment broker. He has practically no mining experience. Mr. Berger stated that the corporation had expended over \$85,000. Judging from the small amount of work done by the corporation, which includes only 140 feet of underground exploration work, and a few weeks work on surface trenching and road improvement with a bulldozer, the applicant would be a very poor risk to handle Government funds for exploration work.

The applicant, Mr. William Berger, was in charge of the cooperation work when over 140 tons of mixed ore and waste was hauled to a custom mill at Tuolumne, Nev. The material apparently contains insufficient scheelite to pay for milling. It is quite possible that this material was hauled for promotional reasons.

Mr. Berger stated that the company was incorporated in Nevada with a capitalization of 218,000 shares at \$1.00 par value. Some of this stock was said to have been sold to business men at Santa Rosa, Calif., which was Mr. Berger's former residence.

The applicant does not appear to be competent to conduct an exploration project.

The personnel at the property included Mr. Marion E. Price, an engineer employee, and one workman. Because of stormy weather, no work was being done.

APPLICANT'S PROPERTY RIGHTS

The applicant stated that he and his associates held the majority of the stock in the corporation. The sixteen unpatented Tungsten Lead

mining claims are said to be owned by the corporation. The location certificates are said to be filed at the Pershing County recorder's office at Lovelock, Nev. Claims No. 1 to No. 3 are recorded in Book 13, pages 7 to 12 and claims No. 9 to No. 16 are recorded in Book 13, pages 489 to page 492.

Mr. Berger claims that the corporation may owe some money to Mr. J. C. Tomlinson, a former stockholder.

DESCRIPTION OF PROPERTY

Surface and surface facilities:

Surface facilities at the camp consist of one bunkhouse with a kitchen and one small cabin. Accommodations for six men are available.

Equipment:

	Condition
1 15-horsepower double drum hoist with cable and 1 8-cubic foot hoisting buckets	Fair
1 Air compressor, 160 c.f.m., portable with gasoline engine drive and 60 cubic foot air receiver	"
1 Jackhammer, Gardner-Denver, Model 555 complete with column, shell hoses and water pressure tank, and drill steel	"
1 Atlas rock drill with pneumatic leg, drill steel, hoses and bits	"
1 Blacksmith shop with assorted hand tools	
1 Acetylene welding outfit, complete	Good
300 ft. 18-inch gage track, 12-pound rail	Fair
2 Mine cars, 16-cubic foot	
1 Mine car, 14-cubic foot	
1 Truck, pickup, 1-ton	"
1 Truck, pickup, 1/2-ton, 4-wheel drive	"
2 Electric light plant, 1300-watt	"
400 ft. pipe, 3/4-inch to 2-inch air and water lines	"
1 Headframe and shack, at Middle Hill shaft	Poor
1 Ore bin at shaft, 30-ton capacity	"
1 Ore bin at South Hill adit, 30-ton capacity	Fair

Mine workings are shown on maps included with report. (Figures 1, 2, and 3).

SAMPLING

Sample No.	Width/feet	%CO ₂	%Mo	Location and remarks
S-150	1.0	0.25		North Hill outcrop - East
S-151	2.0	0.15		" " " "
S-152	5.0	0.15		" " " "
S-153	2.0	0.20		Middle Hill shaft 25-foot level
S-154	4.0	*0.01		" " " 25-foot "
S-155	2.0	*0.01		" " east side shaft
				25-foot level
S-156	3.0	0.56	0.07	Middle Hill west side shaft
				25-foot level
S-157	3.0	0.74		Middle Hill shaft 7 feet below collar
S-158	1.5	*0.01		North Hill open cut above adit
S-159	3.0	0.26		" " " " " "
S-160	1.3	0.24		South Hill adit
S-161	1.0	*0.01		" " "
S-162	2.3	*0.01		" " "
S-163	1.5	*0.01		" " "
S-164	1.5	*0.01		" " "
S-165	1.3	0.04		" " "
S-166	3.5	*0.01		" " " portal
S-167	2.0	*0.01		" " open cut above adit

See sketch map figures 1, 2, and 3 for sample locations.

*Less than.

PAST OPERATION

The property was examined by engineers from the U. S. Bureau of Mines in June 1951 in regard to an access road application which was denied.

Work at the property since the previous examination consisted of driving the South Hill adit; retimbering the Middle Hill shaft; and sinking it 15 feet. The North Hill adit was extended less than 15 feet. Some road repair work and trenching with a bulldozer was completed and the access road was extended 0.5 of a mile from the shaft to the North Hill area.

PRODUCTION

The operator, Mr. William Berger, produced 142.5 tons of mixed ore and waste. The material was estimated to contain less than 0.15 percent WO_3 and was stockpiled at the Toulon mill located 74 miles by road south of the property. Trucking the material from the property to the mill cost \$5.75 a ton, according to Mr. Berger, and mill charges would be \$10.00 per ton.

Production figures from the Middle Hill section, (Red Hawk mine), are previously quoted.

AVAILABILITY OF MANPOWER, SUPPLIES, WATER, POWER, ETC.

Mine labor was scarce in this region as more stable operations in the vicinity employ the available supply. Wage scale for miners is \$14.00 per day.

Supplies can be obtained at Winnemucca, Nev.

Water for domestic use can be obtained from a spring a few hundred yards from the camp in Fole Canyon.

Gasoline has to be hauled in to the property for power generation.

Because of the steep road grades, haulage costs are high.

STATEMENT OF THE APPLICANT'S PROPOSAL

The applicant requests Government aid to explore the property. A DWEA loan totaling \$62,941 has been requested. The exploration work covers surfacing, trenching, drifting, crosscutting, and sinking.

The applicant claimed the ore on the North Hill would run 3.0 percent WO_3 , which is obviously wrong. The best showings were sampled with the assistance of the operators engineer and the analyses of these samples indicated that the material was too low grade to constitute ore.

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DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

DMRA-2750, Tungsten Lead Company

Parshing County, Nev.

Ralph J. Roberts and David G. Arnold, Geologists
U. S. Geological Survey

January 29, 1953

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The area is underlain largely by slate and interbedded limestone lenses that have been partly metamorphosed to hornfels and tactite. These rocks strike N. 10° - 50° E. and dip 40° - 60° NW. The tactite layers locally contain scheelite erratically distributed along the strike and down dip.

The scheelite-bearing tactite bodies that have been mined are as much as 45 feet long and two to four feet wide. Shipments made from the stope on the Middle Hill include a carload reported to assay 2.5 percent WO_3 and 266 tons that yielded 286 units WO_3 (about 1.08 percent WO_3). Samples cut from exposed tactite layers in the inclined shaft in the Middle Hill workings averaged 0.38 percent WO_3 . Samples cut from the North Hill workings and South Hill workings were below shipping grade.

The ore reserves on the Middle Hill total about 2,750 tons of ore averaging 0.40 percent WO_3 . Although this ore is of shipping grade, it is worth only about \$15.00 a ton. It is unlikely therefore that ore of this grade can be mined at a profit. There are no ore reserves on the North and South Hills.

GEOLOGY

The area is underlain by interbedded slate, calcareous slate, and limestone of Triassic age that are cut by diorite and aplite dikes^{1/}. Locally the sedimentary rocks have been metamorphosed to hornfels, and to tactite which in places contains disseminated scheelite.

The sedimentary rocks strike N. 10° E. to N. 50° E. and dip 40° - 60° NW., forming part of a homoclinal sequence that underlies the Eugene Range. Gray to black slate is the principal rock type; it has been metamorphosed to low grade hornfels over most of the mine area. Beds of calcareous slate and limestone are interlayered with the slate; these beds form only a small proportion of the sedimentary sequence, and are generally thin and lenticular. In places they have been metamorphosed to tactite which consists of pyroxene, epidote, actinolite, garnet, quartz, calcite, and pyrite.

ORE DEPOSITS

The scheelite-bearing tactite layers are interbedded with slate, hornfels, and barren tactite. The tactite layers do not crop out well on the smooth slopes in the mine areas and most of the discoveries of scheelite-bearing tactite that have been made are on ridges.

The scheelite-bearing tactite layers that have been explored range from a few inches to four feet thick. They are lenticular, and pinch and swell along the strike and down dip. The scheelite is in

^{1/} Klepper, E. R., January 10, 1943, Memorandum on the Red Hawk Tungsten property.

part coarsely crystalline where it occurs in veinlets, but most of it is finely crystalline and is erratically disseminated throughout the tactite. The scheelite has a blue-white fluorescent color, except for one place in the Middle Hill shaft where it has a distinct yellowish fluorescent color; a sample (S-156) cut at this place contained 0.07 percent Mo.

Only the ore body on Middle Hill has been mined. This body was two to three feet wide, and was developed for a length of 45 feet when Klepper visited the property^{2/}. It is probable that the ore layer exposed in the inclined shaft is the northeastward extension of this layer, giving a total known length of 110 feet.

According to Klepper^{1/}, the property yielded a one-ton shipment in 1917 that was reported to contain 2.5 percent WO_3 . The source of this ore is not known. In 1943-44 shipments totaling 266 tons that contained 286 units of WO_3 (about 1.08 percent WO_3) were purchased by the Metals Reserve Corporation in Salt Lake City. These shipments were mined from the slope on the Middle Hill which is now caved and is inaccessible (fig. 3).

The scheelite showings on North Hill are in shallow pits. An adit 150 feet long has been driven to intersect the projected scheelite-bearing tactite layers about 75 feet below the pits, but the face of the adit is still about 50 feet short of the objective. (Fig. 5). Two samples were cut from the showings in the pits reported

^{2/} Klepper, M. R., April 1, 1943, Supplemental Memorandum--Access Road, Red Hawk Tungsten property, Eugene Mountains, Pershing County, Nevada.

to be most promising with the following results:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
S-158	1.8 feet	0.01
S-159	3.0 feet	0.26

Three samples were cut east of the pits on scheelite-bearing tactite layers. (See fig. 2.) The assays of these samples were as follows:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
S-150	1.0 feet	0.23
S-151	2.0 feet	0.15
S-152	5.0 feet	0.16

The Middle Hill workings have yielded most of the recorded production of the property. The principal stop is now caved, but the scheelite-bearing layer is exposed in an inclined shaft and workings on the 25-foot level. (See fig. 3.) Near the top of the incline, the layer is about three feet thick; it narrows downward and is two feet thick where last seen on the level. Samples cut in the layer gave the following assays:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
S-153	2.0 feet	0.20
S-155	2.0 feet	0.01
S-156	3.0 feet	0.56
S-157	3.0 feet	0.74
Average grade		0.38

The 25-foot level has other scheelite-bearing tactite showings in higher beds, but the scheelite is erratically distributed throughout the bed. One sample was cut at the southwest side of the level

at one of the best showings; it was analyzed with the following results:

	<u>Width of Cut</u>	<u>Percent WO₃</u>
S-184	4.0 feet	0.01

The South Hill workings comprise an adit 110 feet long and shallow surface cuts. (Fig. 4) An ore layer as much as 3.5 feet wide is exposed at the portal of the adit; this layer was followed northeastward for 45 feet where it was cut off by a fault. Presumably the fault is a normal fault, and the layer is probably displaced northwest. Scheelite showings in a surface cut directly above the adit may represent the layer in the adit. If so, the displacement on the fault is about 19 feet. Two samples were cut on the bed in the adit and one was cut in the surface pit. These were analyzed with the following results:

	<u>Width of Cut</u>	<u>Percent WO₃</u>
S-160	1.3 feet	0.24
S-166	3.5 feet	0.01
S-167	2.0 feet	0.01

Another narrower tantalite layer is exposed in the adit northeast of the fault; this layer appears to be lower in grade than the main layer, but there are two small high grade pockets in the drift. This layer thinned and pinched out about 36 feet from the fault. Five samples were cut in this layer and assayed with the following results:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
S-161	1.0 feet	0.01
S-162	2.3 feet	0.01
S-163	1.5 feet	0.01
S-164	1.5 feet	0.01
S-165	1.3 feet	0.04

ORE RESERVES

When Klepper visited the property^{2/} he calculated the following reserves:

Table 1. Ore Reserves

	<u>Tons</u>	<u>Grade</u> <u>%</u>
Assured (measured)	250	2.0
Probable (indicated)	300	2.0
Possible (inferred)	750	0.75

It is probable that in subsequent mining operations, the measured ore was largely stoped and shipped. Klepper estimated the grade to be 2 percent WO_3 , but the shipments averaged only about 1.08 percent WO_3 . This discrepancy is probably due to dilution or a lowering in grade in the ore shoot above or below the level that Klepper sampled.

There is no way to accurately evaluate the ore reserves remaining in the Middle Hill area. Klepper's estimated 250 tons of probable ore and 750 tons of possible (inferred) ore averaging 0.75 percent WO_3 may be found in the stoped area. The taconite layer in the inclined shaft is probably the same bed as the one mined in the

stope, and it is possible that the tactite layer may be found between the shaft and the stope. On the assumption that there was no stoping below the stope level and that the tactite layer averages two feet in thickness, the block between the south end of the stope and the north side of the shaft (220 feet long) may contain about 5,500 tons of tactite to a point 100 feet down dip below the surface. As the scheelite is erratically distributed throughout the tactite, it seems prudent to consider that about half of this tonnage may be waste rock. As the samples cut during this examination (S-153, S-155, S-156, S-157) averaged 0.38 percent WO_3 , it seems reasonable to assume that the material in the block may average about 0.40 percent WO_3 . The inferred reserves in the Middle Hill area are therefore estimated to be 2,750 tons of material containing 0.40 percent WO_3 .

As the analyses of tactite layers on the North Hill and South Hill show that the tactite is too low grade to be shipped, no ore reserves were calculated for these areas.

PROPOSED EXPLORATION

The applicant has proposed to explore tungsten showings in three places, North Hill, Middle Hill, and South Hill. Discussion of these projects follows:

North Hill

The showings on North Hill were largely covered by snow at the time of visit and could not be adequately examined. High grade assays have been reported from the shallow pits, but the samples cut

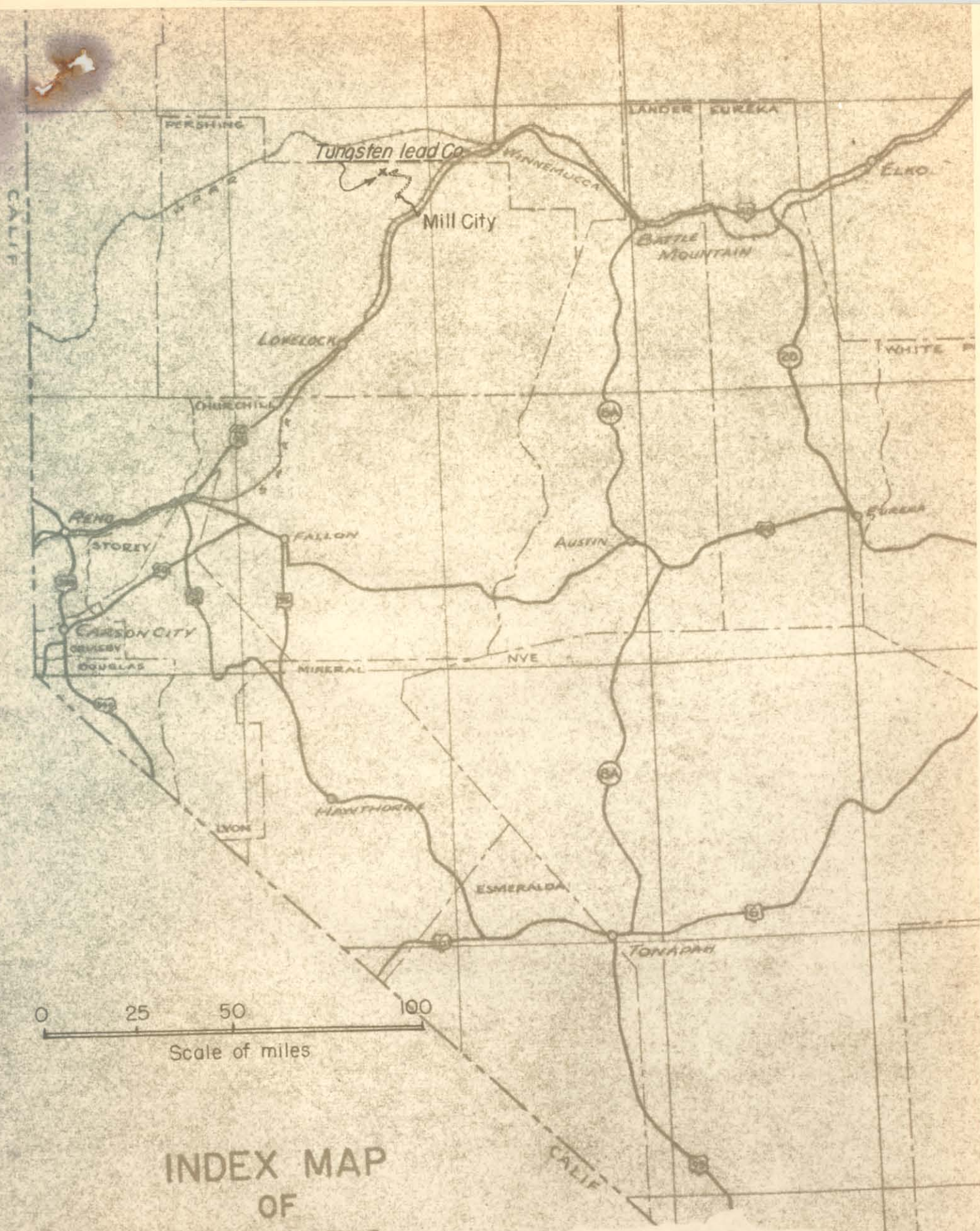
during the examination were all below shipping grade. No further exploratory work is recommended there.

Middle Hill

The applicant has proposed sinking the existing shaft an additional 80 feet to a depth of 125 feet, and to raise 50 feet into the hanging wall at the 110-foot level. As the ore reserves inferred in the Middle Hill area amount to only 2,750 tons averaging 0.40 percent WO_3 , no additional work is recommended there.

South Hill

The exploratory work proposed in the South Hill workings consists of drifting and crosscutting northeast of the present face. Although a few high-grade scheelite showings were noted in the workings, the overall grade of the tantalite layers is very low. As the material is well below shipping grade ore, no further work appears to be justified here, and accordingly none is recommended.



INDEX MAP
OF
NEVADA

TUNGSTEN LEAD CO. DMEA 2750
LOCATION MAP FIGURE 1

Tungsten Lead Company
Pershing County, Nevada

Claim Map Sketch
To show location of
Samples 5-150, 5-151, 5-152

Scale 1" = 300'

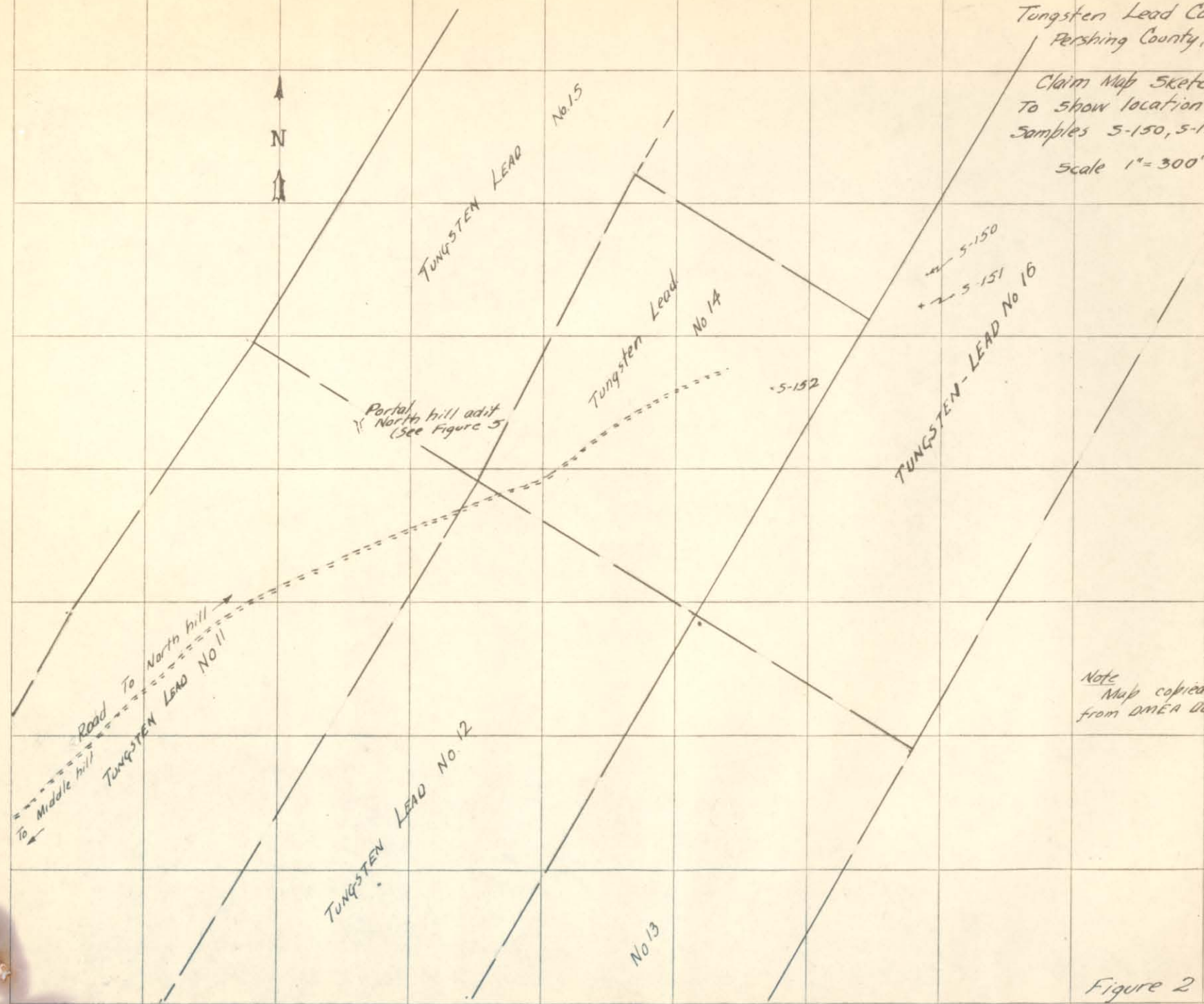


Figure 2

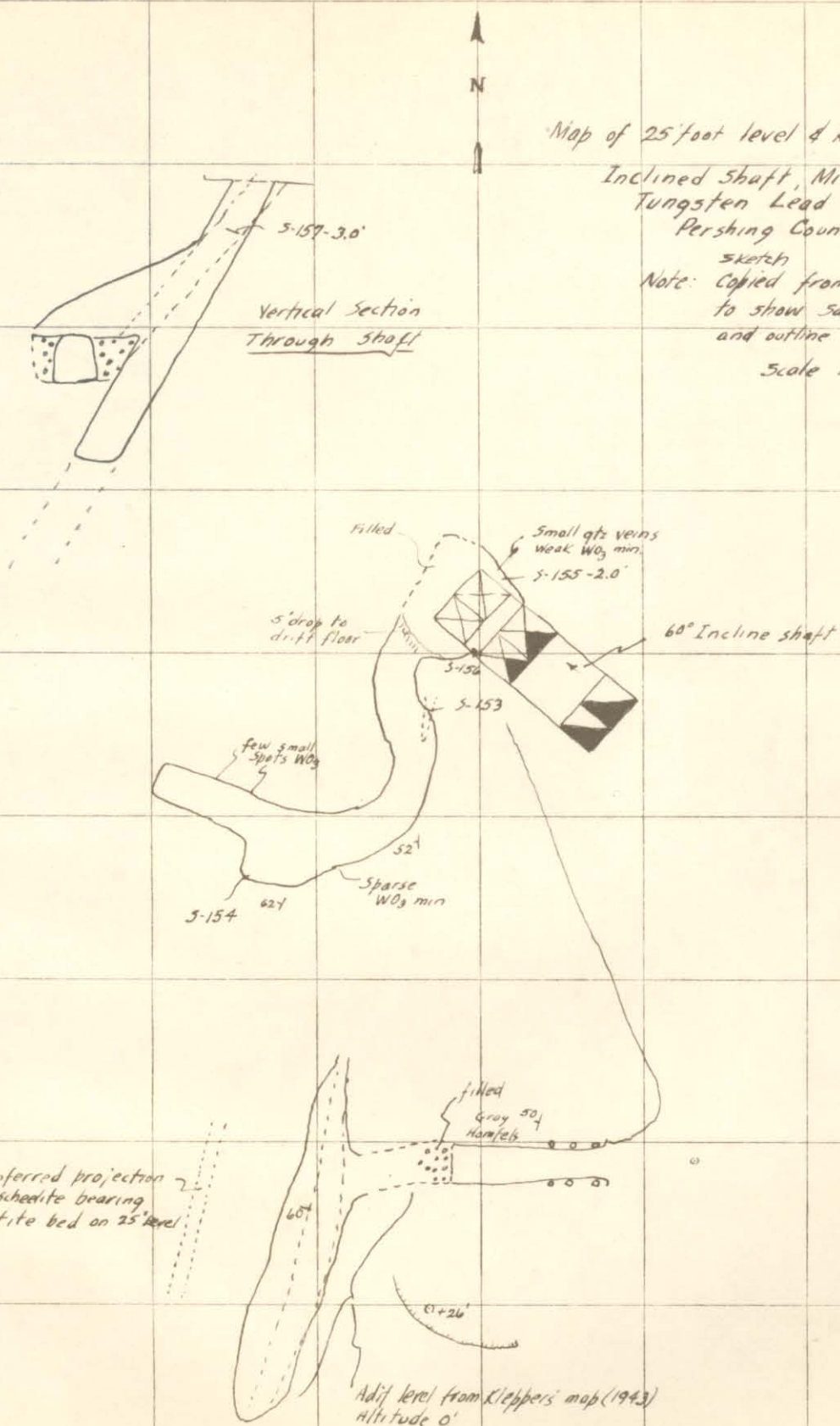


Figure 3

Map of South Hill Adit & Surface Cut
Tungsten Lead Company
(Red Hawk Property)
Pershing County, Nevada

Sketch

Note: Copied from U.S.G.S. map
to show sample locations
and outline of workings.

Scale 1" = 20 ft.

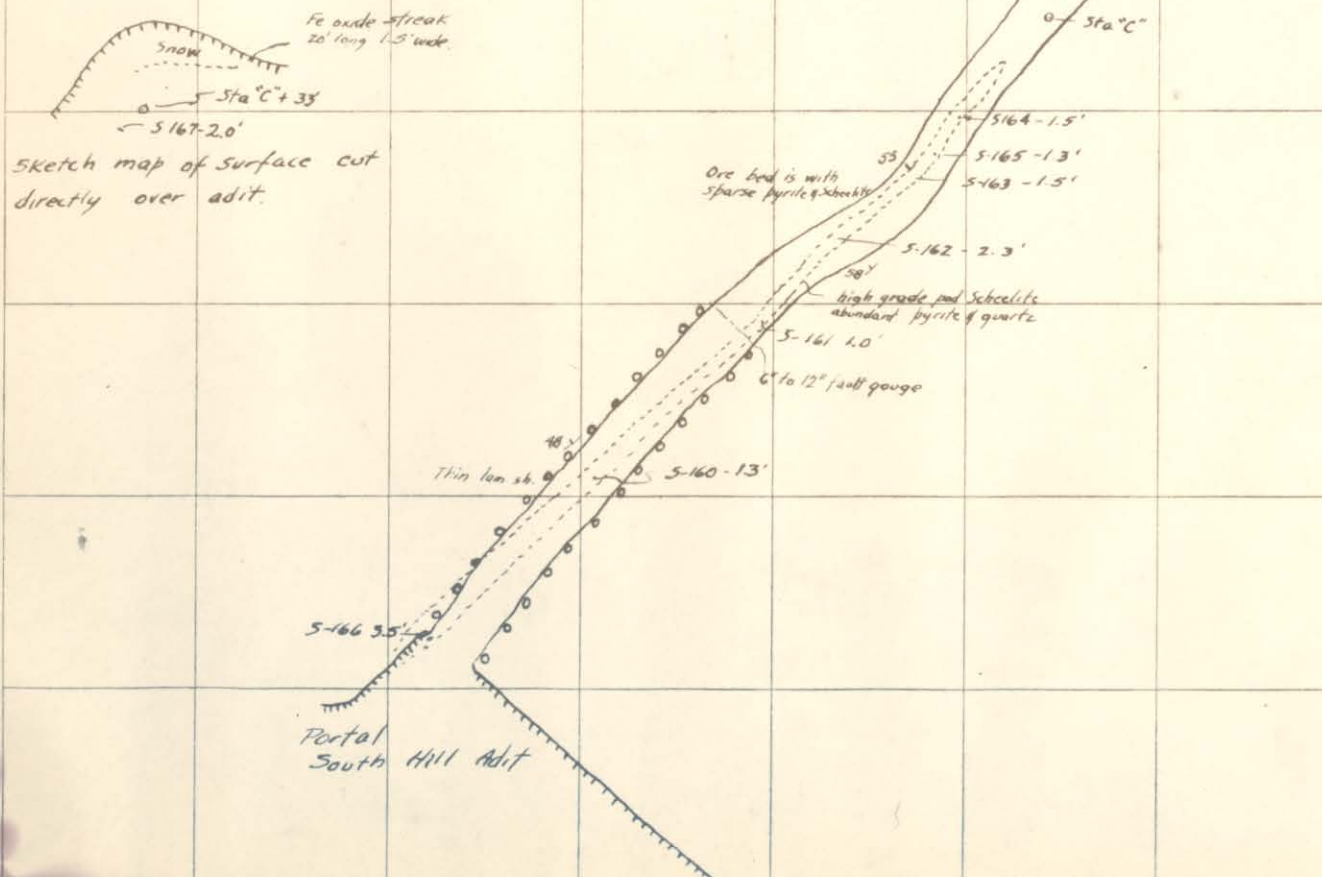
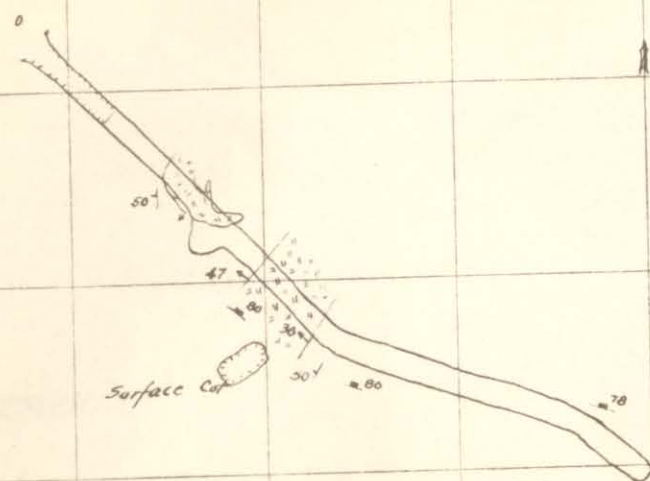


Figure 4

portal North Hill Adit



Map of North Hill Workings
Tungsten Lead Company
(Red Hawk Property)

Pershing County, Nevada

Note: Copied from USGS map
to show sample locations
and outline of workings.

Scale 1"=40'

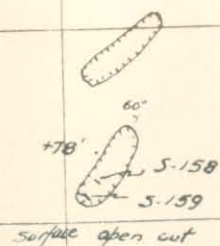


Figure 5

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DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

DMEA-2750, Tungsten Lead Company

Fershing County, Nev.

Ralph J. Roberts and David C. Arnold, Geologists
U. S. Geological Survey

January 29, 1953

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The area is underlain largely by slate and interbedded limestone lenses that have been partly metamorphosed to hornfels and tactite. These rocks strike N. 10° - 30° E. and dip 40° - 60° NW. The tactite layers locally contain scheelite erratically distributed along the strike and down dip.

The scheelite-bearing tactite bodies that have been mined are as much as 45 feet long and two to four feet wide. Shipments made from the stope on the Middle Hill include a carload reported to assay 2.5 percent WO_3 and 286 tons that yielded 286 units WO_3 (about 1.06 percent WO_3). Samples cut from exposed tactite layers in the inclined shaft in the Middle Hill workings averaged 0.36 percent WO_3 . Samples cut from the North Hill workings and South Hill workings were below shipping grade.

The ore reserves on the Middle Hill total about 2,750 tons of ore averaging 0.40 percent WO_3 . Although this ore is of shipping grade, it is worth only about \$15.00 a ton. It is unlikely therefore that ore of this grade can be mined at a profit. There are no ore reserves on the North and South Hills.

GEOLOGY

The area is underlain by interbedded slate, calcareous slate, and limestone of Triassic age that are cut by diorite and aplite dikes^{1/}. Locally the sedimentary rocks have been metamorphosed to hornfels, and to tactite which in places contains disseminated scheelite.

The sedimentary rocks strike $N. 10^{\circ} E. to N. 45^{\circ} E.$ and dip $40^{\circ} - 60^{\circ} NW.$, forming part of a homoclinal sequence that underlies the Eugene Range. Gray to black slate is the principal rock type; it has been metamorphosed to low grade hornfels over most of the mine area. Beds of calcareous slate and limestone are interlayered with the slate; these beds form only a small proportion of the sedimentary sequence, and are generally thin and lenticular. In places they have been metamorphosed to tactite which consists of pyroxene, epidote, actinolite, garnet, quartz, calcite, and pyrite.

ORE DEPOSITS

The scheelite-bearing tactite layers are interbedded with slate, hornfels, and barren tactite. The tactite layers do not crop out well on the smooth slopes in the mine areas and most of the discoveries of scheelite-bearing tactite that have been made are on ridges.

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^{1/} Klepper, M. E., January 10, 1943, Memorandum on the Red Hawk Tungsten property.

part coarsely crystalline where it occurs in veinlets, but most of it is finely crystalline and is erratically disseminated throughout the tactite. The scheelite has a blue-white fluorescent color, except for one place in the Middle Hill shaft where it has a distinct yellowish fluorescent color; a sample (S-186) cut at this place contained 0.07 percent Mo.

Only the ore body on Middle Hill has been mined. This body was two to three feet wide, and was developed for a length of 45 feet when Klepper visited the property^{2/}. It is probable that the ore layer exposed in the inclined shaft is the northeastward extension of this layer, giving a total known length of 110 feet.

According to Klepper^{1/}, the property yielded a one-ton shipment in 1917 that was reported to contain 2.5 percent WO_3 . The source of this ore is not known. In 1943-44 shipments totaling 266 tons that contained 266 units of WO_3 (about 1.02 percent WO_3) were purchased by the Metals Reserve Corporation in Salt Lake City. These shipments were mined from the stops on the Middle Hill which is now caved and is inaccessible (fig. 3).

The scheelite showings on North Hill are in shallow pits. An adit 160 feet long has been driven to intersect the projected scheelite-bearing tactite layers about 75 feet below the pits, but the face of the adit is still about 50 feet short of the objective. (Fig. 5). Two samples were cut from the showings in the pits reported

^{2/} Klepper, M. R., April 1, 1943, Supplemental Memorandum--Access Road, Red Hawk Tungsten property, Eugene Mountains, Pershing County, Nevada.

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	<u>Width of Cut</u>	<u>Percent WO_3</u>
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Three samples were cut east of the pits on scheelite-bearing tactite layers. (See fig. 2.) The assays of these samples were as follows:

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The Middle Hill workings have yielded most of the recorded production of the property. The principal stope is now caved, but the scheelite-bearing layer is exposed in an inclined shaft and workings on the 25-foot level. (See fig. 3.) Near the top of the incline, the layer is about three feet thick; it narrows downward and is two feet thick where last seen on the level. Samples cut in the layer gave the following assays:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
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S-157	3.0 feet	0.74
Average grade		<u>0.38</u>

The 25-foot level has other scheelite-bearing tactite showings in higher beds, but the scheelite is erratically distributed throughout the bed. One sample was cut at the southwest side of the level

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The South Hill workings comprise an adit 110 feet long and shallow surface cuts. (Fig. 4) An ore layer as much as 3.5 feet wide is exposed at the portal of the adit; this layer was followed northeastward for 45 feet where it was cut off by a fault. Presumably the fault is a normal fault, and the layer is probably displaced northwest. Scheelite showings in a surface cut directly above the adit may represent the layer in the adit. If so, the displacement on the fault is about 19 feet. Two samples were cut on the bed in the adit and one was cut in the surface pit. These were analyzed with the following results:

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S-166	3.6 feet	0.01
S-167	2.0 feet	0.01

Another narrower taconite layer is exposed in the adit northeast of the fault; this layer appears to be lower in grade than the main layer, but there are two small high grade pockets in the drift. This layer thinned and pinched out about 35 feet from the fault. Five samples were cut in this layer and assayed with the following results:

	<u>Width of Cut</u>	<u>Percent WO_3</u>
S-161	1.0 feet	0.01
S-162	2.3 feet	0.01
S-163	1.5 feet	0.01
S-164	1.5 feet	0.01
S-165	1.3 feet	0.04

ORE RESERVES

When Klepper visited the property^{2/} he calculated the following reserves:

Table 1. Ore Reserves

	<u>Tons</u>	<u>Grade</u> <u>%</u>
Assured (measured)	250	2.0
Probable (indicated)	300	2.0
Possible (inferred)	750	0.75

It is probable that in subsequent mining operations, the measured ore was largely stoped and shipped. Klepper estimated the grade to be 2 percent WO_3 , but the shipments averaged only about 1.08 percent WO_3 . This discrepancy is probably due to dilution or a lowering in grade in the ore shoot above or below the level that Klepper sampled.

There is no way to accurately evaluate the ore reserves remaining in the Middle Hill area. Klepper's estimated 250 tons of probable ore and 750 tons of possible (inferred) ore averaging 0.75 percent WO_3 may be found in the stopes area. The taconite layer in the inclined shaft is probably the same bed as the one mined in the

stope, and it is possible that the tactite layer may be found between the shaft and the stope. On the assumption that there was no stepping below the stope level and that the tactite layer averages two feet in thickness, the block between the south end of the stope and the north side of the shaft (220 feet long) may contain about 5,500 tons of tactite to a point 100 feet down dip below the surface. As the scheelite is erratically distributed throughout the tactite, it seems prudent to consider that about half of this tonnage may be waste rock. As the samples cut during this examination (S-153, S-155, S-156, S-157) averaged 0.38 percent WO_3 , it seems reasonable to assume that the material in the block may average about 0.40 percent WO_3 . The inferred reserves in the Middle Hill area are therefore estimated to be 2,750 tons of material containing 0.40 percent WO_3 .

As the analyses of tactite layers on the North Hill and South Hill show that the tactite is too low grade to be shipped, no ore reserves were calculated for these areas.

PROPOSED EXPLORATION

The applicant has proposed to explore tungsten showings in three places, North Hill, Middle Hill, and South Hill. Discussion of these projects follows:

North Hill

The showings on North Hill were largely covered by snow at the time of visit and could not be adequately examined. High grade assays have been reported from the shallow pits, but the samples cut

during the examination were all below shipping grade. No further exploratory work is recommended there.

Middle Hill

The applicant has proposed sinking the existing shaft an additional 80 feet to a depth of 125 feet, and to raise 50 feet into the hanging wall at the 110-foot level. As the ore reserves inferred in the Middle Hill area amount to only 2,750 tons averaging 0.40 percent WO_3 , no additional work is recommended there.

South Hill

The exploratory work proposed in the South Hill workings consists of drifting and crosscutting northeast of the present face. Although a few high-grade scheelite showings were noted in the workings, the overall grade of the tantalite layers is very low. As the material is well below shipping grade ore, no further work appears to be justified here, and accordingly none is recommended.



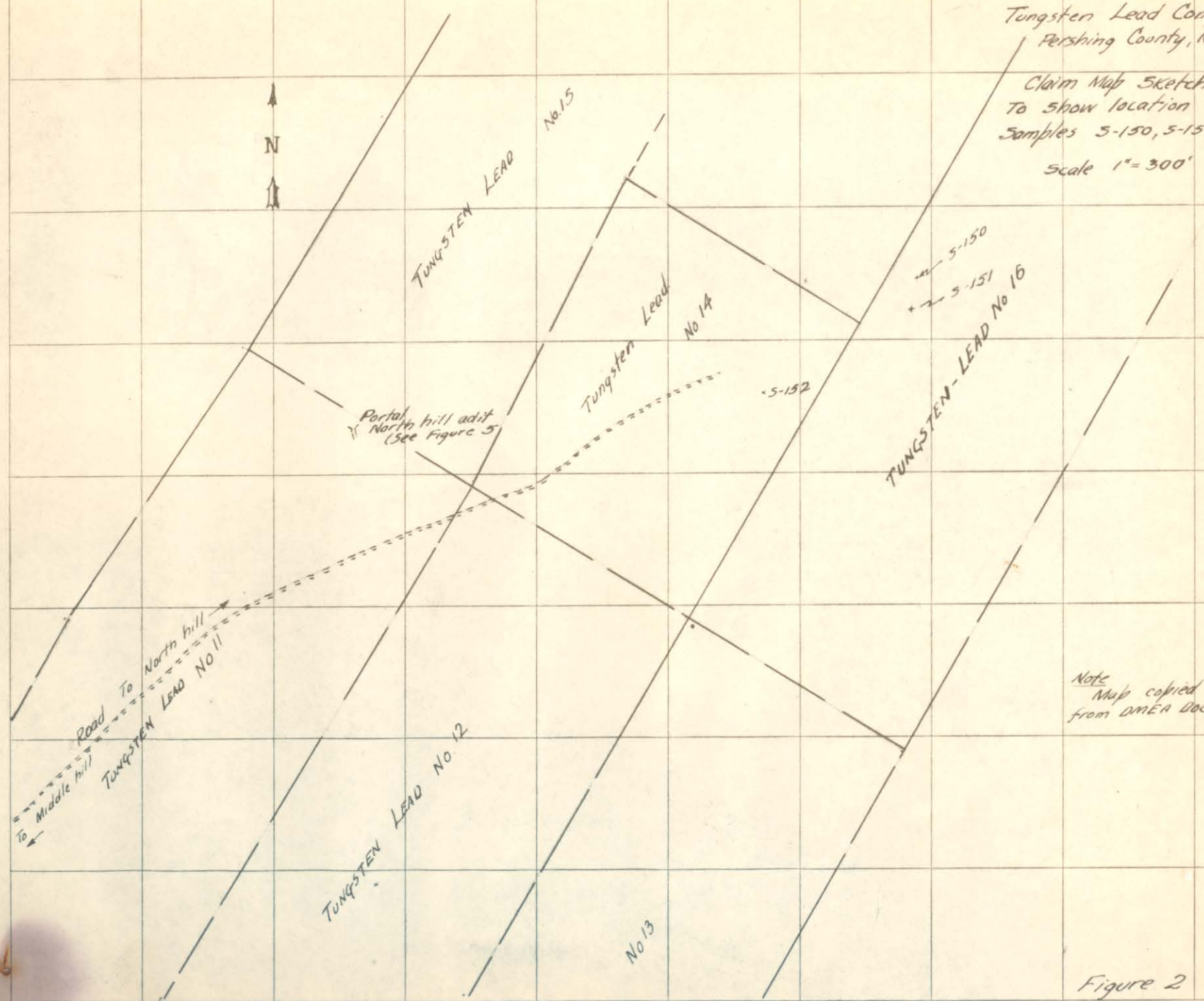
INDEX MAP
OF
NEVADA

TUNGSTEN LEAD CO. DMEA 2750
LOCATION MAP FIGURE 1

Tungsten Lead Company
Pershing County, Nevada

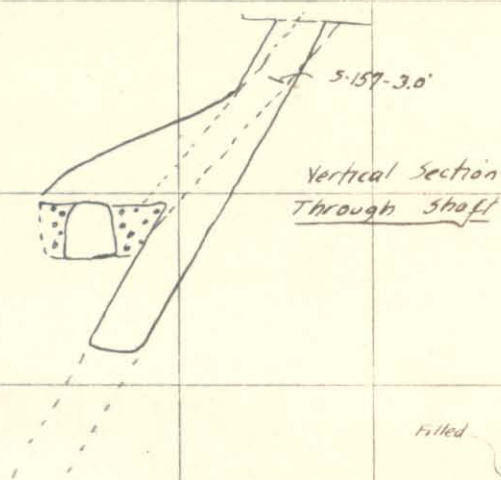
Claim Map Sketch
To show location of
Samples 5-150, 5-151, 5-152

Scale 1" = 300'



Note
Map copied
from DMCA DOCKET.

Figure 2

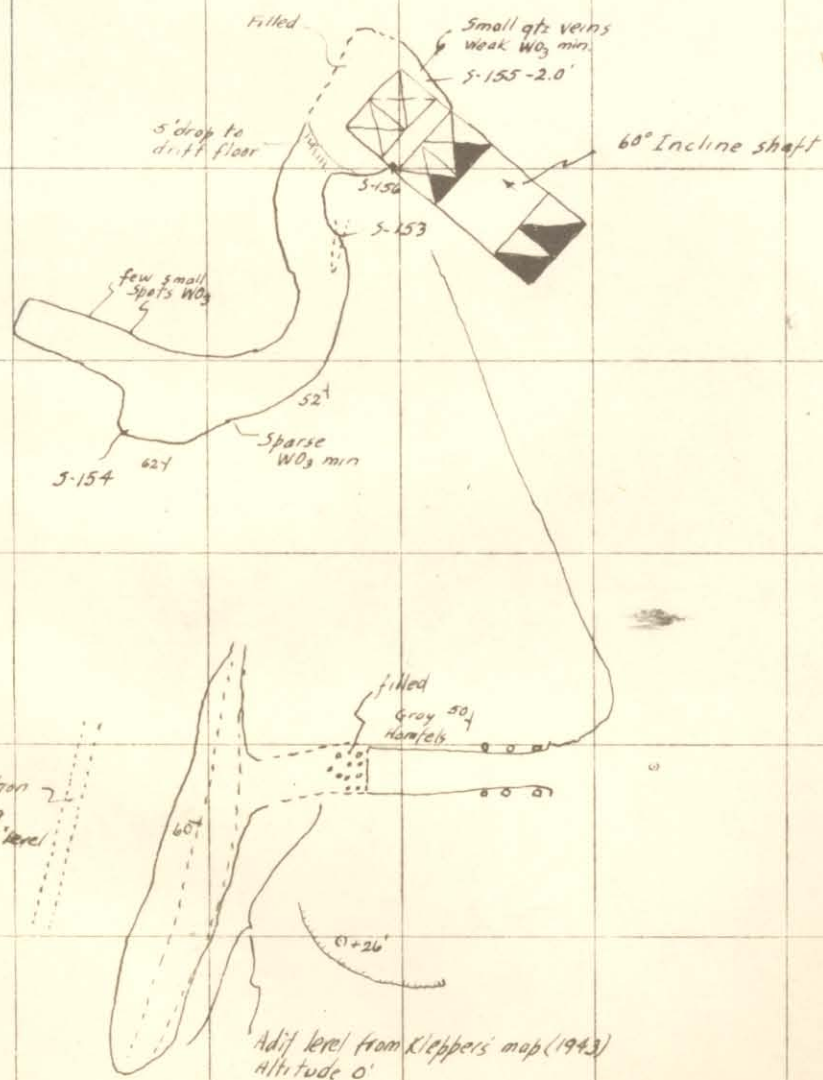


Vertical Section
Through Shaft

Map of 25' foot level & Kleppers map (1943)

Inclined Shaft, Middle Hill
Tungsten Lead Company
Pershing County, Nevada

Sketch
Note: Copied from U.S.G.S Map
to show sample locations
and outline of workings.
Scale 1" = 20'



Inferred projection
of scheelite bearing
taconite bed on 25' level

Adit level from Kleppers' map (1943)
Altitude 0'

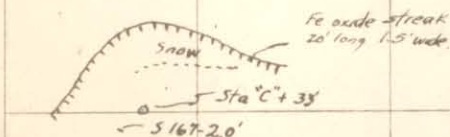
Figure 3

Map of South Hill Adit & Surface Cut
Tungsten Lead Company
(Red Hawk Property)
Pershing County, Nevada

Sketch

Note: Copied from U.S.G.S. map
to show sample locations
and outline of workings.

Scale 1" = 20 ft.



Sketch map of surface cut
directly over adit.

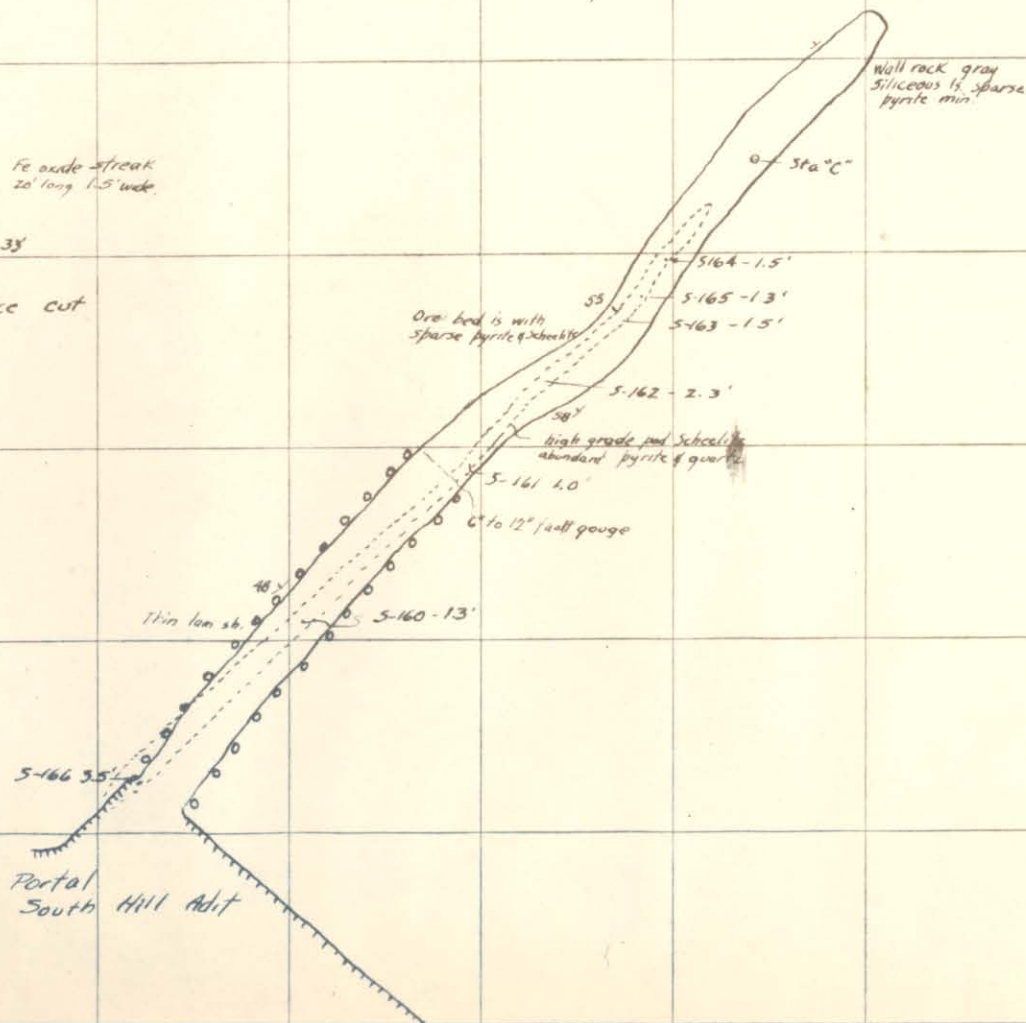
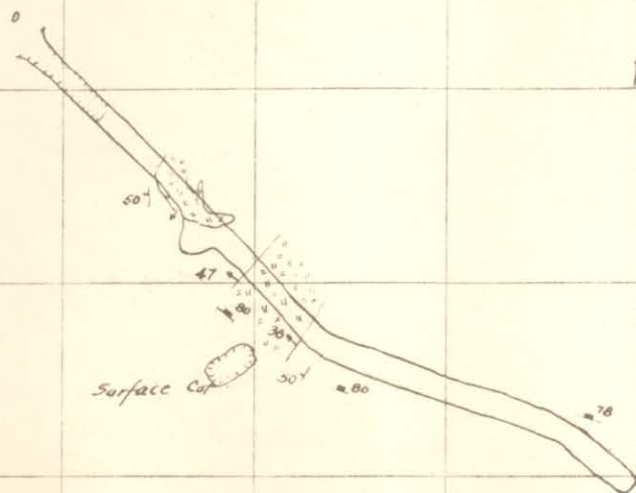


Figure 4

Portal North Hill Adit



Map of North Hill Workings
Tungsten Lead Company
(Red Hawk Property)

Pershing County, Nevada

Note: ^{Sketch} Copied from USGS map
to show sample locations
and outline of workings.

Scale 1"=40'

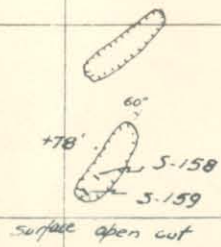


Figure 5

United States
Department of the Interior
Bureau of Mines
Rare and Precious Metals Experimental Station
Reno, Nevada.

Hydrometallurgical & Ore-Dressing Branch
Box D, University Station

Region III

January 13, 1953

Memorandum

To: Mr. A. C. Johnson
From: Mr. J. B. Zadra
Subject: DMEA 2750 - Sheahan

The repeat assays for tungsten on samples submitted by Mr. Sheahan (DMEA 2750) have been run in duplicate, and the following results obtained:

<u>Sample No.</u>	<u>% WO₃</u>
161	less than 0.01
162	less than 0.01
163	less than 0.01
164	less than 0.01
165	0.04

You will note that these assays exactly check the previous reported results.

May I respectfully suggest that you inform the unsatisfied geologist that it is not an accepted practice to check chemical analysis with an ultra-violet lamp because other minerals fluoresce as well as scheelite. Rechecking samples by chemical analysis against an estimated lamp assay is not only absurd but takes up a lot of precious time that can be put to more useful advantage.

Calcite - blue-white rare
Hydrozincite - blue-white J. B. ZADRA

J. B. Zadra



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

P. O. BOX 1551
RENO, NEVADA

December 22, 1952

Mr. Ralph J. Roberts
U. S. Geological Survey
320 South Main Street
Salt Lake City 1, Utah

Dear Mr. Roberts: Subject: DMEA-2750 (Tungsten)

Thank you for the rough draft of the report on the Tungsten-Lead Co. property, DMEA-2750, Pershing County, Nevada.

Enclosed are copies of the sample analyses determined by the Metallurgical Division, Hydrometallurgical and Ore Dressing Branch, Reno, Nev. Practically all of the samples contain insufficient tungsten to constitute commercial ore.

Mr. Benjamin H. Sheahan, Mining Engineer from this office, who accompanied you and D. C. Arnold on the joint examination, inquired about the shipments made from the property to the Toulon mill and found that 142.5 tons of mixed ore was stockpiled. The material was hauled to the mill between July 16 and July 28, 1952. Samples taken by the operator and estimates by Sheahan and the mill foreman indicate that the material contains less than 0.2% WO_3 . A sample taken by the operator's engineer was reported to contain 0.12% WO_3 . The material was composed of mixed tactite, slate and hornfels which may have been hauled to the mill for promotional reasons.

The venture seems to be of a promotional nature and the samples do not indicate that an exploration loan is justified.

Sincerely yours,

A. C. Johnson
A. C. Johnson, Chief
Mining Division
Region III

Encl.



SAMPLES AND ANALYSES

<u>Sample No.</u>	<u>Width/feet</u>	<u>%,WO₃</u>	<u>%,Mo</u>	<u>Location & remarks</u>
S-150	1.0	0.23		North Hill outcrop - East ✓
S-151	2.0	0.15		North Hill open cut - East
S-152	5.0	0.16		North Hill outcrop - East
S-153	2.0	0.20		Middle Hill shaft 25' level
S-154	4.0	*0.01		Middle Hill shaft 25' level
S-155	2.0	*0.01		Middle Hill east side shaft 25' level
S-156	3.0	0.56	0.07	Middle Hill west side shaft 25' level
S-157	3.0	0.74		Middle Hill shaft 7' below collar
S-158	1.8	*0.01		North Hill open cut above adit ✓
S-159	3.0	0.26		North Hill open cut above adit ✓
S-160	1.3	0.24		South Hill adit
S-161	1.0	*0.01		South Hill adit
S-162	2.3	*0.01		South Hill adit
S-163	1.5	*0.01		South Hill adit
S-164	1.5	*0.01		South Hill adit
S-165	1.3	*0.04		South Hill adit
S-166	3.5	*0.01		South Hill adit portal
S-167	2.0	*0.01		South Hill open cut above adit

Note: *Less than 0.01%

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

OFFICE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

MEEA-2750, Tungsten Lead Company
Ferthing County, Nev.

Benjamin H. Sheehan, Mining Engineer
U. S. Bureau of Mines

January 29, 1953

~~Cancelled~~ 282
Item 67
(Copy 2 of 2)

DWHA-2750 (Tungsten)

Name and address of applicant: William Berger
Tungsten Lead Company
Room 7, Professional Bldg.
Winnemucca, Nev.

Name and location of property: Tungsten Lead Company, Pershing Co.,
Nev.

SUMMARY

The Tungsten-Lead Company, Inc. property consists of 16 unpatented claims located high on the east slope of the Sugens Mountains, Pershing County, Nev. The property is reached by following the Pole Canyon road 8.4 miles northerly from Tungsten, Nev.

The Middle Hill area which was formerly known as the Red Hawk mine was developed by a shallow 30-foot incline shaft. An adit now caved and filled was examined by a geologist^{1/} of the U. S. Geological Survey in 1943. The access road was constructed at Government expense in 1944 and a production of 266 tons of tungsten ore containing 266 units of WO_3 was produced. Narrow, lenticular, scheelite bearing tactite lenses occur in metamorphosed sedimentary rock with regional strikes of N. 10° E. to N. 50° E. and dips of 40 to 60 degrees to the northwest.

The North Hill and South Hill areas are developed by short adits, however near occurrences of small lenticular shaped tactite lenses contain insufficient tungsten mineralization to constitute ore.

The property was incorporated in 1950 and was promoted by J. C. Tomlinson of Winnemucca. An application for access road improvement

1/ E. R. Klepper.

was denied following an examination by engineers^{2/} of the U. S. Bureau of Mines in June 1951.

Mr. J. G. Tomlinson conveyed control in the property to Mr. William Berger, an investment broker of Santa Rosa, Calif., who now maintains an office at Winnemucca.

Mr. Berger claims that the corporation has spent over \$85,000. Since only 140 feet of underground work was done, some road repair work, and the production of 142.5 tons of non-commercial mixed ore, at least a fairly large portion of the money was not spent on the property.

A request for a Government exploration loan was made by Mr. Berger in October 1952 and the property was examined on December 2 and 3, 1952 by an engineer^{3/} of the U. S. Bureau of Mines jointly with geologists^{4/} of the U. S. Geological Survey.

CONCLUSIONS

The tungsten mineralization is too low grade, and the scheelite bearing lenses are too small to warrant an exploration loan.

The applicant for the exploration loan lacks necessary qualifications to conduct an exploration project competently.

RECOMMENDATIONS

The exploration loan should be denied.

TIME SPENT ON PROPERTY

The engineer and geologists examined the property from 10:00 A.M.,

^{2/} E. J. Watson and E. H. Sheahan.

^{3/} E. H. Sheahan.

^{4/} R. J. Roberts and D. C. Arnold.

Dec. 2 to 5:00 P.M., Dec. 3, 1952. The Eugene Mountains in this region were partly covered with snow. Mr. William Berger and Marion E. Price, his supervisor, accompanied the examination team.

NAME AND LOCATION OF PROPERTY

The Tungsten Lead Company, Inc., Red Hawk mine, is located on the east slope of the Eugene Mountains in the Central Mining District, Pershing County, Nev., and is about three miles northwest of the Nevada-Massachusetts Tungsten mine.

The property is reached from Winnemucca, the nearest town, by following U. S. Highway 40 southwesterly 27 miles to Mill City, turn right and follow paved road toward tungsten 3 miles to road fork opposite the mill building, turn right and follow an unimproved road northerly 3 miles to a road fork leading westerly into Pole Canyon, follow the Pole Canyon road 5.4 miles to the property. The total distance by road from Winnemucca, Nevada is 43.4 miles to the Middle Hill (Red Hawk shaft).

The sixteen unpatented Tungsten Lead mining claims No. 1 to No. 16 are located in sections 16, 17, 20 and 21, T. 34 N., R. 34 E., at elevations from 6200 feet to 7000 feet.

CONDITION AND SEASONAL ACCESSIBILITY OF ROAD TO PROPERTY

The paved roads from Winnemucca to Tungsten are all weather and are seldom closed. The partly improved road from Tungsten to the property in Pole Canyon is open most of the year except during periods of heavy snow or rain. The property was reached by four wheel drive vehicles in December 1952.

COMPETENCY OF APPLICANT AND OPERATING PERSONNEL

The applicant, Mr. William Berger, is an investment broker. He has practically no mining experience. Mr. Berger stated that the corporation had expended over \$85,000. Judging from the small amount of work done by the corporation, which includes only 140 feet of underground exploration work, and a few weeks work on surface trenching and road improvement with a bulldozer, the applicant would be a very poor risk to handle Government funds for exploration work.

The applicant, Mr. William Berger, was in charge of the cooperation work when over 140 tons of mixed ore and waste was hauled to a custom mill at Tuelon, Nev. The material apparently contains insufficient scheelite to pay for milling. It is quite possible that this material was hauled for promotional reasons.

Mr. Berger stated that the company was incorporated in Nevada with a capitalization of 218,000 shares at \$1.00 par value. Some of this stock was said to have been sold to business men at Santa Rosa, Calif., which was Mr. Berger's former residence.

The applicant does not appear to be competent to conduct an exploration project.

The personnel at the property included Mr. Marion E. Price, an engineer employee, and one workman. Because of stormy weather, no work was being done.

APPLICANT'S PROPERTY RIGHTS

The applicant stated that he and his associates held the majority of the stock in the corporation. The sixteen unpatented Tungsten Lead

mining claims are said to be owned by the corporation. The location certificates are said to be filed at the Pershing County recorders office at Lovelock, Nev. Claims No. 1 to No. 8 are recorded in Book 13, pages 7 to 12 and claims No. 9 to No. 16 are recorded in Book 13, pages 489 to page 492.

Mr. Berger claims that the corporation may owe some money to Mr. J. O. Tomlinson, a former stockholder.

DESCRIPTION OF PROPERTY

Surface and surface facilities:

Surface facilities at the camp consist of one bunkhouse with a kitchen and one small cabin. Accommodations for six men are available.

Equipment:

	<u>Condition</u>
1 15-horsepower double drum hoist with cable and 1 8-cubic foot hoisting buckets	Fair
1 Air compressor, 160 c.f.m., portable with gasoline engine drive and 60 cubic foot air receiver	"
1 Jackhammer, Gardner-Denver, Model 555 complete with column, shell hoses and water pressure tank, and drill steel	"
1 Atlas rock drill with pneumatic leg, drill steel, hoses and bits	"
1 Blacksmith shop with assorted hand tools	
1 Acetylene welding outfit, complete	Good
300 ft. 16-inch gage track, 12-pound rail	Fair
2 Mine cars, 16-cubic foot	
1 Mine car, 14-cubic foot	
1 Truck, pickup, 1-ton	"
1 Truck, pickup, 1/2-ton, 4-wheel drive	"
2 Electric light plant, 1500-watt	"
400 ft. pipe, 3/4-inch to 2-inch air and water lines	"
1 Headframe and shack, at Middle Hill shaft	Poor
1 Ore bin at shaft, 30-ton capacity	"
1 Ore bin at South Hill adit, 30-ton capacity	Fair

Mine workings are shown on maps included with report. (Figures 1, 2, and 3).

SAMPLING

Sample No.	Width/feet	% WO_3	% Mo	Location and remarks
S-150	1.0	0.23		North Hill outcrop - East
S-151	2.0	0.16		" " " "
S-152	5.0	0.16		" " " "
S-153	2.0	0.20		Middle Hill shaft 25-foot level
S-154	4.0	*0.01		" " " 25-foot "
S-155	2.0	*0.01		" " east side shaft
				25-foot level
S-156	3.0	0.56	0.07	Middle Hill west side shaft
				25-foot level
S-157	3.0	0.74		Middle Hill shaft 7 feet below collar
S-158	1.5	*0.01		North Hill open cut above adit
S-159	3.0	0.26		" " " " " "
S-160	1.3	0.24		South Hill adit
S-161	1.0	*0.01		" " "
S-162	2.3	*0.01		" " "
S-163	1.5	*0.01		" " "
S-164	1.5	*0.01		" " "
S-165	1.3	0.04		" " "
S-166	3.5	*0.01		" " " portal
S-167	2.0	*0.01		" " open cut above adit

See sketch map figures 1, 2, and 3 for sample locations.

*Less than.

PAST OPERATION

The property was examined by engineers from the U. S. Bureau of Mines in June 1951 in regard to an access road application which was denied.

Work at the property since the previous examination consisted of driving the South Hill adit; retimbering the Middle Hill shaft; and sinking it 15 feet. The North Hill adit was extended less than 15 feet. Some road repair work and trenching with a bulldozer was completed and the access road was extended 0.5 of a mile from the shaft to the North Hill area.

PRODUCTION

The operator, Mr. William Berger, produced 142.5 tons of mixed ore and waste. The material was estimated to contain less than 0.15 percent WO_3 and was stockpiled at the Toulon mill located 74 miles by road south of the property. Trucking the material from the property to the mill cost \$6.75 a ton, according to Mr. Berger, and mill charges would be \$10.00 per ton.

Production figures from the Middle Hill section, (Red Hawk mine), are previously quoted.

AVAILABILITY OF MANPOWER, SUPPLIES, WATER, POWER, ETC.

Mine labor was scarce in this region as more stable operations in the vicinity employ the available supply. Wage scale for miners is \$14.00 per day.

Supplies can be obtained at Winnemucca, Nev.

Water for domestic use can be obtained from a spring a few hundred yards from the camp in Pole Canyon.

Gasoline has to be hauled in to the property for power generation.

Because of the steep road grades, haulage costs are high.

STATEMENT OF THE APPLICANT'S PROPOSAL

The applicant requests Government aid to explore the property. A DIMEA loan totaling \$62,941 has been requested. The exploration work covers surfacing trenching, drifting, crosscutting, and sinking.

The applicant claimed the ore on the North Hill would run 3.0 percent WO_3 , which is obviously wrong. The best showings were sampled with the assistance of the operators engineer and the analyses of these samples indicated that the material was too low grade to constitute ore.