Jay Carpenter

D-3

(36)

Item 6

1930 0006

RECONSTRUCTION FINANCE CORPORATION
MINING SECTION
REPORT OF EXAMINING ENGINEER

Docket No. Reno C-21
Date Application Received — January 4, 1943
Date of Field Examination — February 10, 1943
Date of Report — March 3, 1943

NAME AND ADDRESS OF APPLICANT

Tungsten Hills Mining Co.
333 Gazette Building
Reno, Nevada

NAME OF CORRESPONDENT

H. B. Chessher
333 Gazette Building
Reno, Nevada

LOCATION OF MINE

Douglas County, Nevada. 12N, 21E
Mineral to be produced: Tungsten ore (Scheelite).

CHARACTER OF PROJECT

To reopen a shaft reported to be between 100 and 120 feet deep, the lower 50 feet of which is caved. Also to clean out and sample various open cuts.

APPLICANT

The Applicant, Mr. Chessher, appears to be capable of handling any of the mining operations that may be required here. He has an excellent financial standing, and is of good character insofar as can be learned at this time.

LOAN REQUESTED

$5,000.00.

DESCRIPTION OF THE PROJECT

The property is situated on a spur from the west side of the Pine Nut Range, about 10 miles from Gardnerville, Nevada, reached by 3 miles of paved highway, and 7 miles of mountain road. It is about 6200 feet above sea level in an area covered by second growth pinon pine and juniper. Pine Nut creek which has a minimum flow of about 5 miner's inches, flows northward about 1000 feet east of the property. This water, however, is subject to prior appropriations.

There are eleven claims in Applicant's holdings, being the north extension of the Nevada Tungsten Company's group, now owned by Heizer and Segerstrom, officers of the Nevada-Massachusetts Company, of Mill City, Nevada, large producers of tungsten. The original discovery in the district was made on the Scheelite claim of the Nevada Tungsten Company, who developed the ground and eventually built a mill of from 60 to 70 tons daily capacity. The discoveries upon Applicant's holdings were made by miners working at the Nevada Tungsten.

There was at no time sufficient ore in the Nevada Tungsten property to supply a mill of that capacity without mixing in considerable low-grade ore or waste. In order to supply tonnage for the mill, Nevada Tungsten arranged with the locators of Applicant's claims to mill their ore. This was in 1937, and the incline shaft and stope hereinafter described, were the result of the effort to mine pay ore of mill grade. However, the combined output of both properties

failed to produce enough ore with sufficient WO_3 tenure to meet expenses, and the Nevada Tungsten Company folded up, and sold their property to Heizer and Segerstrom.

The latter sank the shaft 200 feet deeper, but have made no attempt to operate, and the mill is now for sale. The writer was familiar with the early operations of the Nevada Tungsten Company up to the time of the building of the mill, having been called upon frequently for engineering work, and was a personal friend of the original incorporators.

The area in which scheelite is found covers the east flank of a northerly trending ridge. It is composed of Mesozoic sedimentary rocks, which have been metamorphosed to varying degrees. Dikes and sills of a granitic rock occur indiscriminately throughout the mass. Limestone and schist predominate, although some shales and slates may be seen. The sedimentaries apparently occur in an anticlinal fold, the axis of which trends roughly about N 35 W. The beds on the Nevada Tungsten dip about 35° to the west, being on the west limb of the anticline, while the main workings on the Tungsten Hills are in beds that dip at about the same angle to the east. The open cuts on the most westerly claim of the Tungsten Hills group expose beds dipping west.

The main workings of the Tungsten Hills group are on the Fawn and Badger claims, in Sec. 24 T. 12 N., R. 21 E. M.D.M. Some quartz croppings appear in limestone on the side of a small ravine. Sometime in the past prospectors drove a tunnel in for about 120 feet, uncovering quartz occurring in bunches, and in a number of small cross veins. The limestone occurs in conformable beds 3 to 6 feet thick. In the immediate vicinity of the quartz occurrences the beds are more or less altered to marble and impregnated with iron oxides and hydrates. Slight silicification was noted in places. It is in these altered areas near quartz seams that the shcelite occurs. The quartz seams, or veinlets, ranging from 6 to 12 inches in width, cut the beds at varying angles.

The inclined shaft was sunk on one of the limestone beds which was apparently the most mineralized. It is open for 66 feet below the collar, and passes through the old tunnel about 50 feet below the collar. It is caved below the 66 foot point. It follows one particular bed, and dips 35° east. Scheelite ore was stoped on both sides of this shaft, beginning at a point about 10 feet below the old tunnel. The stopes are irregular in shape and partly caved.

Applicant's assay map accompanying the application, shows the shape and extent of the stopes, and points where samples were taken. This map was prepared and the majority of samples taken by Mr. Moehlman, geologist for the International Smelting and Refining Company. The writer checked each sample cut with a florescent light, and cut two check samples in the same channels cut by Mr. Moehlman. No. 1 sample corresponds to Sample A-29 (1.08%), and assayed 1.20% WO_3. No. 2 sample was taken at A-19 (0.52%), and assayed 0.35% WO_3. These particular samples were selected for checks because the ore at A-29 was supposed to go above 1%, and at A-19, about 1/2%, or mill grade. The relative amounts of scheelite in the various channel cuts was clearly indicated with the florescent light.

A study of the roofs and faces of the stopes with the light revealed a wide dissemination, but very uneven distribution of scheelite in the altered limestone. It leads to the belief too, that the ore is confined to a single bed, but is controlled by the more or less haphazard occurrences of the narrow quartz veins cutting it. This is not conclusive, however, as several such veins were noted in the old tunnel beyond the shaft, but the adjoining rock is barren of scheelite.

The fact remains that the shaft was extended some 35 to 50 feet below the stopes, apparently on the same bed, and that the only evidence of ore below comes from an unreliable source, a man who was told by a miner that the "last shot" in the bottom of the shaft showed good ore. The limestone bed in which the ore occurs is soft and friable, easy to mine, but impossible to sort when broken down.

Applicant bases his request for a loan upon the expectation of being able to sort out and ship 2% ore, but when the character of the ore was called to his attention, admitted that sorting is impossible.

The open cuts described in the application as being on the Mayflower and Tungsten Hill claims, were visited. A sample was taken from a surface cut 5 ft. long and 3 ft. deep, where ore ranging from 4% to 17% is claimed in a vein 6 to 12 inches wide. The writer found no evidence of a vein, but under the florescent light noted two patches, circular in shape, on opposite sides of the cut, that showed considerable scheelite. The rock is highly disintegrated, almost clayey, probably a lime shale. Other cuts in the vicinity showed traces of scheelite in a similar formation.

On the Tungsten Hill claim an open cut 15 feet square exposes a limestone bed from which was taken 6 tons of 0.70% ore. A small patch of it was left in one corner of the cut, but no sample was taken. Other numerous shallow cuts scattered about showed traces of scheelite.

Since visiting the property, the writer has learned that the concentrates produced from this ore milled at the Nevada Tungsten mill averaged 71% WO_3, which is quite contrary to the supposition of Applicant that failure was due to lack of flotation units in the mill.

A summary of the facts appear about as follows:

(1) There is no indication of ore in place that will contain 2% WO_3.

(2) Exclusive of a few tons in the shaft pillars, there is no mill ore shown in place at points that would indicate a probable ore body that may be made available by development.

(3) Applicant admits in conversation with the writer at the mine the improbability of mining 2% ore in shipping quantities.

(4) Applicant admits that a great deal of "prospecting development" would have to be done in order to expose a sizable quantity of mill ore.

(5) Key samples taken by writer in channels cut by Applicant's engineer check sufficiently close to accept assay map submitted with application as fairly accurate.

CONCLUSION

The writer's opinion is that the facts submitted and observed do not justify the granting of either a preliminary loan, or a development loan.

That the granting of the loan would not assist in the National Defense, in that the labor and materials involved could be utilized in other projects with far greater chances of success.

Respectfully submitted,

Carl Stoddard

CARL STODDARD
Associate Engineer

SUPPLEMENTAL REPORT

TUNGSTEN HILLS MINING COMPANY

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After reading over the typewritten report the writer noticed that he had not mentioned Sample No. 4 which assayed 6.75% WO_3 taken from a shallow cut on the Mayflower claim. This sample represented an area of about one square foot about 18 inches below the surface in soft, shaley, disintregated material. On the opposite side of the cut a similiar patch of bigrade ore appears. There is no evidence of a vein or rock formation in place, other than some shaley material in one end of the bottom of the cut. Piled to one side were about 25 lbs. of high grade pieces, referred to by the applicant as one of the Wood samples. These are supposed to have been taken from the cut during its excavation. It is the opinion of the writer that these "nodules" and the patches or "kidneys" are float that has become buried in the rock mantle.

It should be explained also that in the immediate vicinity of the workings on the Mayflower and Tungsten Hills claims, are many other cuts, trenches and pits, that were dug by the original locators and their lessees in their search for ore in place. Some of these show small bunches of ore in place.

An analysis of the data shown on the assay map of the incline shaft workings may lead to the conclusion that the rake of the ore body in the bed or vein is to the southeast rather than to the northeast. The long axis of the stope is northeast, but it may be contended that that is the short or transverse axis; that the ore body rakes southeast, but is concealed in the stope by the caved area, and the shaft passed thru it in its downward course. This of course is possible, but is opposed to the fact that the miners stoped in the caved area up to the point where values were too low, the same as they did in all other parts of the stope. The periphery of the stope can be seen over the caved ground, but cannot be reached safely for sampling. Also the roof over the caved area is undoubtedly in a bed which overlies the ore bearing bed.

The applicant's accounts for the lack of ore in the old tunnel north of the shaft by claiming it is in the hanging wall limestone. If this were true the strike of the beds is northwest, and the dip much steeper than 35°, and the ore bed could be followed NW from the intersection of the shaft and tunnel. The shaft would represent a trace down the dip of the ore bed about 45° from its strike.

In an interview with one of the lessers who is conversant with the operation of the property it was stated definitely that the sinking of the shaft below the stope failed to expose any ore of minable grade.

The writer is definitely of the opinion that the boundaries of the minable ore body are reached as outlined on the map, and concedes that the mineralized area with the grade of ore shown may extend beyond those outlines in some directions but is unable to confirm applicant's contention that it is downward.

The applicant stated in conversation with the writer on the ground that his purpose was to recondition the shaft; sink it 50 or 100 feet deeper, then drift both ways in an attempt to find new ore bodies.

It should be explained that the portal of the old tunnel is a few feet above the bottom of a ravine that drains easterly. The tunnel, driven northerly, gains depth more rapidly than is shown in cross section A-A, where the surface slope is about paralell to the grade of the ravine.

Following is a tabulation of the "A" samples, taken by Engineer Moehlman, showing the general average of the stope, and the small blocks (A) and (B).

TOTAL OF "A" SAMPLES

	Width	% WO_3	
A-16	6.0 feet	0.22	1.32
A-17	3.5 "	0.28	0.98
A-18	3.0 "	0.27	0.81
A-19	3.0 "	0.52	1.56
A-20	3.0 "	0.08	0.24
A-21	3.0 "	0.09	0.27
A-22	4.5 "	0.03	0.13
A-23	3.0 "	0.03	0.09
A-24	4.0 "	0.48	1.92
A-25	2.3 "	0.18	0.41
A-26	2.5 "	0.42	1.05
A-27	1.0 "	1.88	1.88
A-28	4.5 "	1.20	5.40
A-29	4.5 "	1.02	4.59
TOTAL	47.8 "		20.66
AVERAGE	3.4 "		0.43% WO_3

SOUTH STOPE AREA

Sample No.	Sample Cut Feet	% WO_3	
A-20	(3.0 feet	0.08	0.24
A-21	(3.0 "	0.09	0.27
A-22	(4.5 "	0.03	0.13
A-23	(3.0 "	0.03	0.09
A-24	4.0 "	0.48	1.92
A-25	2.3 "	0.18	0.41
A-26	2.5 "	0.42	1.05
A-28	4.5 "	1.20	5.40
A-29	4.5 "	1.02	4.59
TOTALS	31.3 "		14.11
AVERAGE	3.68		0.45

SOUTH STOPE AREA BLOCK (A)

A-20	(3.0 feet	0.08	0.24
A-21	(3.0 "	0.09	0.27
A-28	4.5 "	1.20	5.40
A-29	4.5 "	1.02	4.59
TOTALS	15.0		10.50
AVERAGE	3.75		0.70

NORTH STOPE AREA

Sample No.	Sample Cut Feet	% WO_3	
A-16	6.0 feet	0.22	1.32
A-17	3.5 "	0.28	.98
A-18	3.0 "	0.27	0.81
A-19	3.0 "	0.52	1.56
A-27	1.0 "	1.88	1.88
TOTALS	16.5		6.55
AVERAGE	3.3		0.397

NORTH STOPE AREA BLOCK (B)

A-18	3.0 "	0.27	0.81
A-19	3.0 "	0.52	1.56
A-27	1.0 "	1.88	1.88
TOTALS	7.0		4.25
AVERAGE	2.1		.607

CHECK SAMPLES BY STODDARD

A-29	4.5 feet	1.02	4.59
S-1	4.5 "	1.20	5.40
A-19	3.0 "	.52	1.56
S-2	3.0 "	.36	1.08
AVERAGE A	3.75		0.82
AVERAGE S	3.75		0.86

All these factors were taken unto consideration, together with applicant's stated purpose for which the loan is requested, and upon which his cost data is based, in arriving at the conclusion.

Carl Stoddard.

Carl Stoddard

March 3, 1943

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Sampling of exposed ore indicates an average of 0.4 WO_3 Ore.

Assume 85% concentration recovery (say 70% on tables and 15% in flotation cells)
Assume a "standard specification" 60% WO_3 concentrate from tables, then:

0.4% WO_3 mill head x 70% = 0.28% WO_3 @ $30.00 per dry short ton unit of WO_3 is the recovered value per dry ton of ore treated or $8.40 at the mill, from which RR Freight and transportation insurance charges to New York area would have to be deducted.

Assume a 30% WO_3 concentrate from flotation cells, then:

0.4% WO_3 mill head x 15% = 0.06% WO_3 @ $30.00 per dry short ton unit of WO_3 is the recovered value per dry ton of ore treated or $1.80 at the mill. These concentrates will require further processing in Salt Lake City under the following conditions:

Deductions for metallurgical losses 1.5 units per dry short ton @ $30.00	$ 45.00
RR Freight $8.00 per ton plus transportation insurance @ 12 cents per $100.00 value $0.96 or	8.96
Treatment charges per dry ton	57.00
Total processing and shipment charges - - - - -	$110.96

which it is estimated will amount to about $0.23 per dry ton of ore treated or $1.80 - $0.23 = $1.57 value per dry ton of ore from flotation cells in Salt Lake City.

From the foregoing it would indicate that gross recoverable value per dry ton of ore is about $9.97.

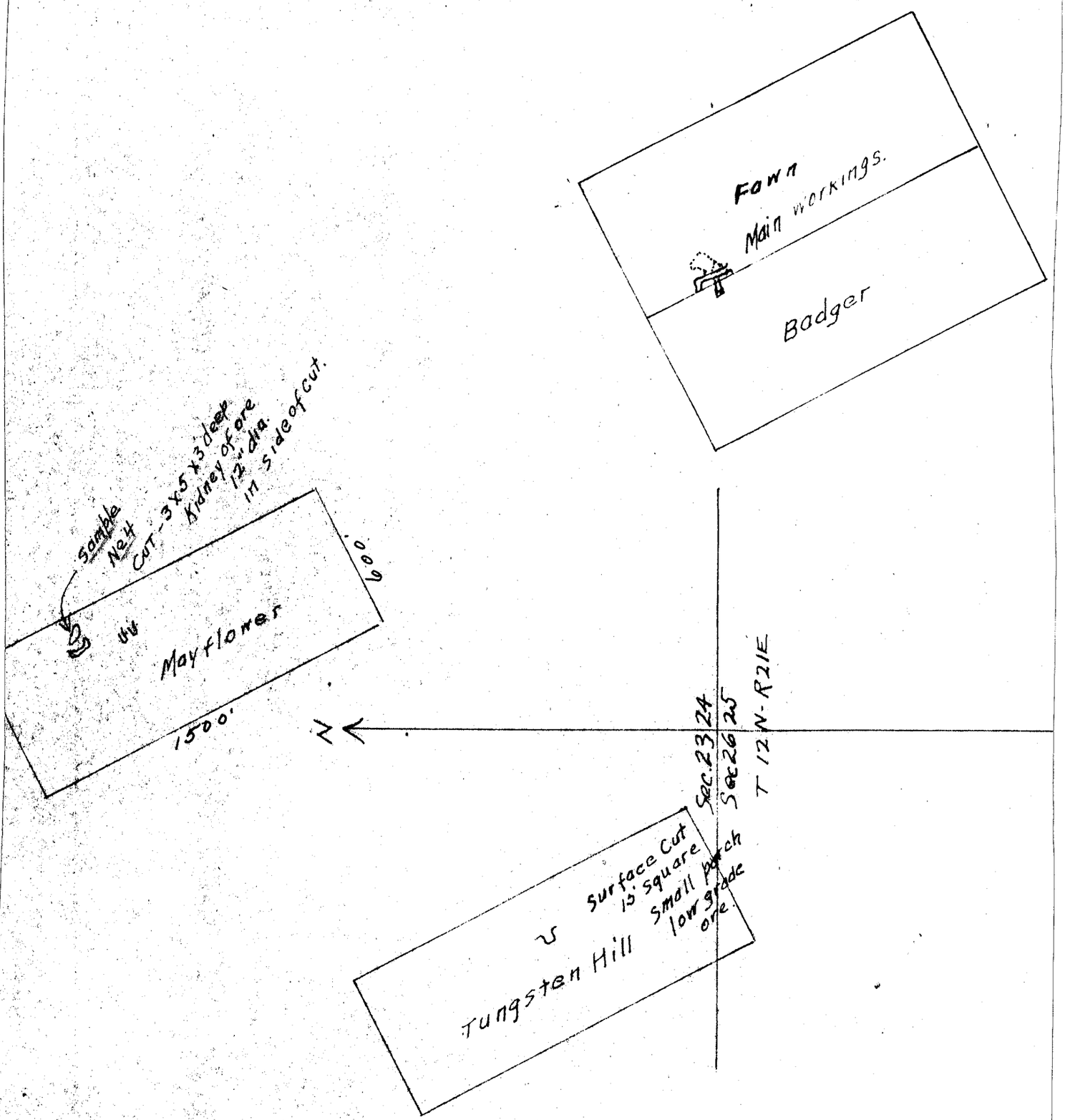
Taking applicant's estimate of operating costs per ton of ore

Mining	$4.00
Hauling -35 miles	2.50
Milling	2.50
Total operating cost - ---	$9.00

leaving an operating profit of $0.97 per dry ton of ore treated.

Further unknown items such as RR Freight and transportation insurance on the 60% WO_3 table concentrates from mill to Glen Cove, Long Island, New York, possible penalties and overhead charges are additional deductions to be taken into consideration.

2.15



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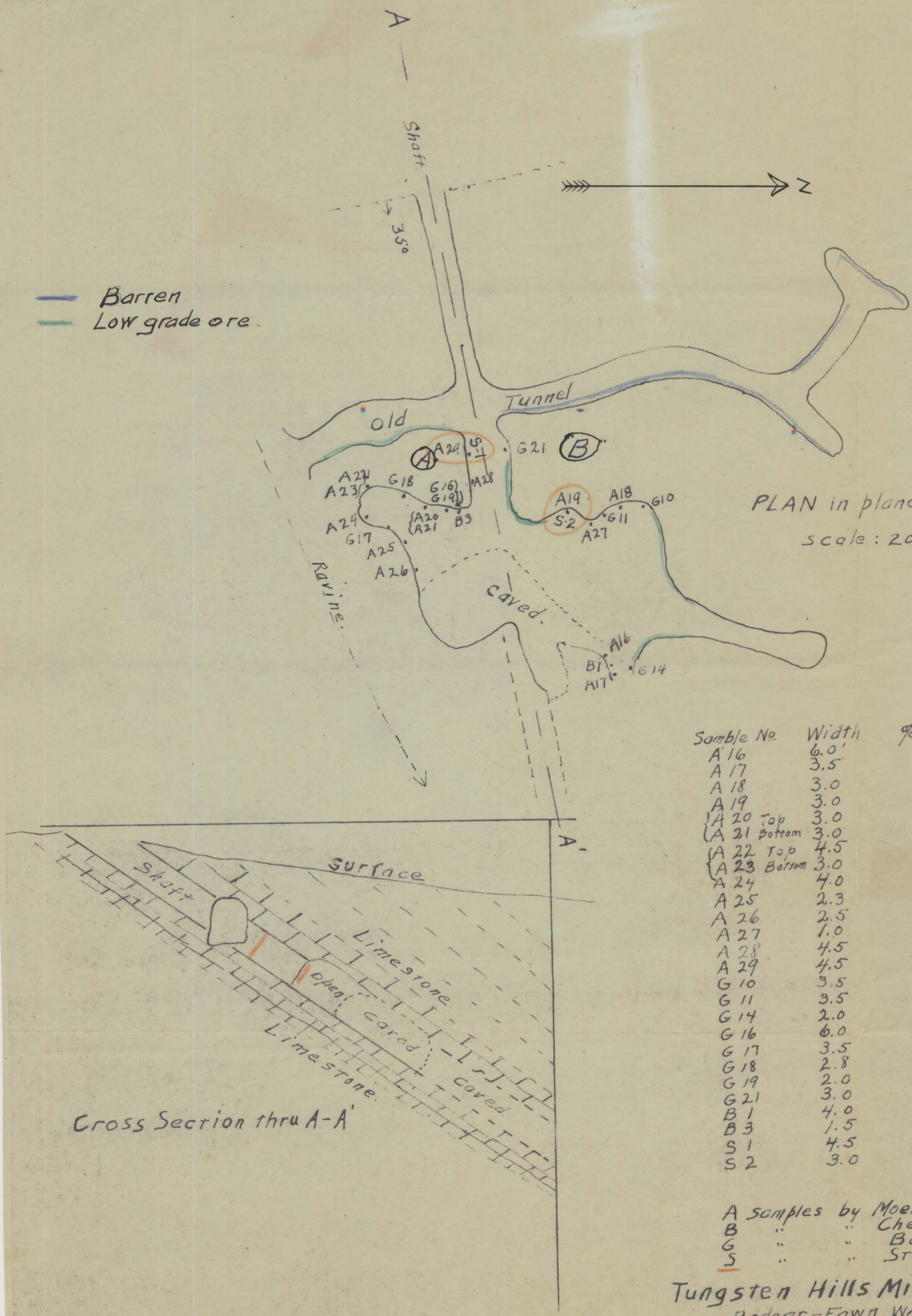

PLAN in plane of Vein
scale: 20' = 1 inch

Cross Section thru A-A'

Samble No		Width	% WO_3
A 16		6.0'	0.22
A 17		3.5	0.28
A 18		3.0	0.27
A 19		3.0	0.52
A 20	Top	3.0	0.08
A 21	Bottom	3.0	0.09
A 22	Top	4.5	0.03
A 23	Bottom	3.0	0.03
A 24		4.0	0.48
A 25		2.3	0.18
A 26		2.5	0.42
A 27		1.0	1.88
A 28		4.5	1.20
A 29		4.5	1.02
G 10		3.5	0.48
G 11		3.5	0.24
G 14		2.0	0.15
G 16		6.0	0.22
G 17		3.5	0.28
G 18		2.8	1.57
G 19		2.0	0.84
G 21		3.0	1.70
B 1		4.0	0.20
B 3		1.5	0.86
S 1		4.5	1.20
S 2		3.0	.36

A samples by Moehlman
B " " Chesser
G " " Baker
S " " Stoddard

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