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Routing Slip

To: Director Supp. Div. Date 9/28/51

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FILE COPY 400
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Brewer
Selfridge

JAN 21 1952

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

Re: Docket No. DMA 1703X - Tungsten
H. S. Tungsten Mine
Yavapai County, Arizona

Dear Mr. Kinnon:

Your request for reconsideration of the denial has been considered in conjunction with the complete file of your application, DMA 1703X.

The interpretation of "Exploration Project" is, as you note, given in MO-5, as amended, Sec. 7(a). In this connection, your attention is called to the criteria (MO-5, Sec. 6(a) to (g)) upon which your application was considered and weighed, particularly noting (b) "The geologic probability of making a significant discovery".

In your instance, the examination of the property, your own application, and the non-concurrence with your theory as to the loss of scheelite from the outcrop, resulted in the considered opinion of this office that there was little probability of making a significant discovery. Since there has been no additional data presented, our opinion, we believe, must stand as heretofore expressed.

We wish to thank you for your interest in the Defense Minerals Program and your patience and effort in this respect.

Sincerely yours,

C. O. Mittendorf (fw)

Acting Administrator
Defense Minerals Exploration
Administration

QLBrewer'lm
1/17/52

cc: Admn. Reading File
1-21-52 Docket
S. D. R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
G. C. Selfridge
Q. L. Brewer

X

JAN 21 1952

Mr. W. G. Kinnan
36 E. Catalina Avenue
Phoenix, Arizona

Re: Docket No. DMA 1703X - Tungsten
N. S. Tungsten Mine
Yavapai County, Arizona

Dear Mr. Kinnan:

Your request for reconsideration of the denial has been considered in conjunction with the complete file of your application, DMA 1703X.

The interpretation of "Exploration Project" is, as you note, given in MO-5, as amended, Sec. 7(a). In this connection, your attention is called to the criteria (MO-5, Sec. 6(a) to (g)) upon which your application was considered and weighed, particularly noting (b) "the geologic probability of making a significant discovery".

In your instance, the examination of the property, your own application, and the non-concurrence with your theory as to the loss of scheelite from the outcrop, resulted in the considered opinion of this office that there was little probability of making a significant discovery. Since there has been no additional data presented, our opinion, we believe, must stand as heretofore expressed.

We wish to thank you for your interest in the Defense Minerals Program and your patience and effort in this respect.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

QLBrewer'lm
1/17/52

cc: Admn. Reading File
Docket
R. W. Gochan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
G. C. Selfridge
Q. L. Brewer

Dmpa
JAN 1 1952

28 E. Catalina Ave
Phoenix, Arizona

Mr. Tom Lyons
United States Department
Of The Interior
Defense Minerals Administration

DMA-1703X

Dear Mr. Lyons:

I wish to refer to your letter of October 2, 1951 denying my application for aid for an exploration project, from which I quote the reasons as follows:

> "It is our opinion that there is little likelihood that the small amount of leaching, which may have occured in the vein outcropping, would infer any appreciably higher grade with continued depth. It is also felt that no secondary enrichment has occurred. Therefore, with no tungsten of commercial grade in sight, we are forced to deny your application."

In view of this it becomes pertinent to know what interpretation has been placed first, on "Exploration Project" and secondly, on "Tungsten of commercial grade". Government literature which guided me in making the application namely, MO-5 under section 7 (a) states "Exploration project means the search for unknown or undeveloped sources of strategic or critical metals or minerals ....."

The examining engineers cut no samples. If samples had been taken across certain exposures values of 2 or 3% WO_3 from channel or V cuts could have been obtained. In such a large deposit of this kind proper, accurate sampling can be accomplished only by blasting large quantities and sampling every tenth shovel or by extensive drilling and sampling.

The deposit is essentially a stockwork in which the granite and altered schist carry crystals and grains of scheelite with concentrations of scheelite along the fractures and joints. It is roughly estimated that half a million tons may be mined at the surface without any stripping and four million tons with a stripping ratio of 1:1. Bench mining of the kind indicated would allow very low WO_3 content material to be worked on a large scale.

There was no contention by me that leaching had occurred or that secondary enrichment was to be expected below the outcrop. A large part of the scheelite in the outcrop is altered and not responsive to ultra violet. Much has been removed mechanically. The scheelite is remarkably pure and not mixed with powellite.

In view of the forgoing I shall appreciate having my application reconsidered.

Very truly yours,

W. C. Kinnon

W. C. Kinnon

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
JAN 14 11 57 AM '52

340
FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Fredy
Holden

OCT 2 1951

not stripped in R+R.
A.E.C.

Memorandum

To: Reports and Records Unit

Through: Director, Supply Division

From: Chief, Ferro-Alloys Branch

Subject: DMA-1703X-Tungsten
~~Mr. W. C. Kinnon~~
~~28 E. Catalina Avenue~~
Phoenix, Arizona

Property: H. S. Tungsten Mine
Black Canyon Mining District
Cleator, Yavapai County, Arizona

Conclusions:

The applicant proposes to extend the underground workings to zones where surface indications are, in his opinion, favorable. The proposed explorations consist of 252 feet of drifting and cross cutting. These explorations are based on the applicant's assumption that, "Acids generated in the shallow oxidized zone have altered a large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock;" and "Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite."

Field team examination of the property has resulted in the estimate of 50 to 200,000 tons of .1% WO_3. This was a visual estimate as no samples were taken, but met with the approval of the applicant. It is thereby agreed that no minable tungsten is in sight.

As to the theory of a leached outcrop as expressed by the applicant, Mr. Dwight Lemmon of the U. S. Geological Survey in a letter to Mr. T. P. Thayer, dated September 16, 1951 says, "It is true that scheelite can be dissolved by sulphuric acid solution and removed from an outcrop, but it is not likely that this will happen on a large scale, and I would be dubious of the chances of finding a workable ore body

below the exposure of 1% material that has already been tested to a depth of 100 feet." In view of Lemmon's opinion, there is little likelihood of finding commercial quantities of tungsten in this deposit.

Recommendation:

The application is denied.

George B. Holderer

George B. Holderer
Chief, Ferro-Alloys Branch

Attachments

Approved:

Tom Lyon

Director, Supply Division

CHJacoby:ll 9/28/51
CC: DMA Docket File
Adm. Reading File
Mr. Holderer
~~Mr. Lemmon~~
~~Mr. Geeman~~
Field Team Region IV

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Holderer
Gerdy

OCT 2 1951

Mr. W. G. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to
DMA-1703X

Dear Mr. Kinnon:

Your application has been reviewed by the Tungsten Branch of the Defense Minerals Administration.

It is our opinion that there is little likelihood that the small amount of leaching, which may have occurred in the vein outcrop, would infer any appreciably higher grade with continued depth. It is also felt that no secondary enrichment has occurred. Therefore, with no tungsten of commercial grade in sight, we are forced to deny your application.

Very truly yours,

Tom Lyon
Tom Lyon, Director
Supply Division

CHJacoby:ll 9/28/51

CC: DMA Docket File
Adm. Reading File
~~Mr. Lemmon~~
~~Mr. Geehan~~
Mr. Holderer
Field Team, Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

OCT 2 1951

a.e.c.

Memorandum

To: Reports and Records Unit

Through: Director, Supply Division

From: Chief, Ferro-Alloys Branch

Subject: DMA-1703X-Tungsten
Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

Property: H. S. Tungsten Mine
Black Canyon Mining District
Cleator, Yavapai County, Arizona

Conclusions:

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below the exposure of.1% material that has already been tested to a depth of 100 feet." In view of Lemmon's opinion, there is little likelihood of finding commercial quantities of tungsten in this deposit.

Recommendation:

The application is denied.

George B. Holderer
Chief, Ferro-Alloys Branch

Attachments

Approved:

Tom Lyon

D irector, Supply Division

DMA Form 2

DEFENSE MINERALS ADMINISTRATION
Status Change Notice

DMA Docket No. 1703X

To: Reports and Records Branch

From: Tungsten Branch

Date: September 28, 1961

The following action has been taken this date on the above Controlled Document.

Forwarded to Reports and Records Unit Through Supply Division

Type of request changed to:

Denied ☐ Withdrawn ☐

Approved in amount of $

Other action, specify:

3624

OCT 2 1951

Memorandum

To: Reports and Records Unit

Through: Director, Supply Division

From: Chief, Ferro-Alloys Branch

Subject: DMA-1703X-Tungsten
Mr. W. C. Kimmon
28 E. Catalina Avenue
Phoenix, Arizona

Property: H. S. Tungsten Mine
Black Canyon Mining District
Cleator, Yavapai County, Arizona

Conclusions:

The applicant proposes to extend the underground workings to zones where surface indications are, in his opinion, favorable. The proposed explorations consist of 252 feet of drifting and cross cutting. These explorations are based on the applicant's assumption that, "Acids generated in the shallow oxidized zone have altered a large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock;" and "Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite."

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below the exposure of .1% material that has already been tested to a depth of 100 feet." In view of Lemmon's opinion, there is little likelihood of finding commercial quantities of tungsten in this deposit.

Recommendation:

The application is denied.

George B. Holderer

George B. Holderer
Chief, Ferro-Alloys Branch

Attachments

Approved:

Tom Lyon

Director, Supply Division

CHJacoby:ll 9/28/51
CC: DMA Docket File
Adm. Reading File
Mr. Holderer
~~Mr. Lemmon~~
~~Mr. Geehan~~
Field Team Region IV

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DMA 1703X

1 copy letter to Lyon from Kinnon dated 7/7/51
2 copies letter to East from Lyon dated 6/29/51
2 copies letter to Kinnon from Lyon dated 6/29/51
1 copy letter to Kinnon from Strobel dated 6/21/51
2 copies MF-103

6/28/51

OCT 2 1951

Please return to
3624

Mr. W. G. Kinnon
29 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to
DMA-1703X

Dear Mr. Kinnon:

Your application has been reviewed by the Tungsten Branch of the Defense Minerals Administration.

It is our opinion that there is little likelihood that the small amount of leaching, which may have occurred in the vein outcrop, would infer any appreciably higher grade with continued depth. It is also felt that no secondary enrichment has occurred. Therefore, with no tungsten of commercial grade in sight, we are forced to deny your application.

Very truly yours,

Tom Lyon

Tom Lyon, Director
Supply Division

CHJacoby:ll 9/28/51

CC: DMA Docket File
Adm. Reading File
Mr. Lemmon
Mr. Geehan
Mr. Holderer
Field Team, Region IV

Mr. W. C. Kinnon
23 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to
DMA-1703X

Dear Mr. Kinnon:

Your application has been reviewed by the Tungsten Branch of the Defense Minerals Administration.

It is our opinion that there is little likelihood that the small amount of leaching, which may have occurred in the vein outcrop, would infer any appreciably higher grade with continued depth. It is also felt that no secondary enrichment has occurred. Therefore, with no tungsten of commercial grade in sight, we are forced to deny your application.

Very truly yours,

Tom Lyon, Director
Supply Division

CHJacoby:ll 9/28/51

CC: DMA Docket File
Adm. Reading File
~~Mr. Lemmon~~
~~Mr. Gachan~~
Mr. Holderer
Field Team, Region IV

Holders

Memorandum

To: Reports and Records Unit

Through: Director, Supply Division

From: Chief, Ferro-Alloys Branch

Subject: DMA-1703X-Tungsten
Mr. W. C. Kinnon
2[illegible] E. Catalina Avenue
Phoenix, Arizona

Property: H. S. Tungsten Mine
Black Canyon Mining District
Cleator, Yavapai County, Arizona

Conclusions:

The applicant proposes to extend the underground workings to zones where surface indications are, in his opinion, favorable. The proposed explorations consist of 252 feet of drifting and cross cutting. These explorations are based on the applicant's assumption that "Acids generated in the shallow oxidized zone have altered a large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock;" and "Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite."

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below the exposure of .1% material that has already been tested to a depth of 100 feet." In view of Lemmon's opinion, there is little likelihood of finding commercial quantities of tungsten in this deposit.

Recommendation:

The application is denied.

George B. Holderer

George B. Holderer
Chief, Ferro-Alloys Branch

Attachments

Approved:

Director, Supply Division

CHJacoby:ll 9/28/51
CC: DMA Docket File
Adm. Reading File
Mr. Holderer
Mr. Lemmon
Mr. Geehan
Field Team Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P.O.Box 4126, University Station
Tucson, Arizona

AUG 14 1951

Memorandum

To: Mr. A. H. Koschmann, Denver, Colorado

From: Mr. A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DMA 1703X, H. S. Tungsten Mine, Yavapai County, Arizona

Enclosed are the original and 7 copies of the above geologic report by C. A. Anderson of the Geological Survey. The examiners recommend that the report be reviewed by Dwight Lemmon to see whether or not the applicant's contention that scheelite has been leached from the outcrop is valid. If, in the reviewer's opinion, the contention is valid, there may be some possibility that an exploration loan can be recommended, otherwise the loan should be denied. The report and recommendations have our approval.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 8

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to
DMA-1703X

Dear Mr. Kinnon:

Your application has been reviewed by the Tungsten Branch of the Defense Minerals Administration.

It is our opinion that there is little likelihood that the small amount of leaching, which may have occurred in the vein outcrop, would infer any appreciably higher grade with continued depth. It is also felt that no secondary enrichment has occurred. Therefore, with no tungsten of commercial grade in sight, we are forced to deny your application.

Very truly yours,

Tom Lyon, Director
Supply Division

CHJacoby:ll 9/28/51

CC: DMA Docket File
Adm. Reading File
~~Mr. Leamon~~
~~Mr. Geehan~~
Mr. Holderer
Field Team, Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OFFICE OF
REGIONAL DIRECTOR

REGION IV

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

A ir Mail

August 28, 1951

Memorandum

To: Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 1703X, Final Report, W. C. Kinnon, H. S. Tungsten Mine, Black Canyon Mining District, Yavapai County, Arizona

Enclosed herewith are original and two copies of the above report.

The report indicates the tungsten to be of extremely low grade. The field men recommend that Dwight Lemmon examine the reports regarding the leaching of outcrop scheelite ores.

We recommend that the project be denied, unless Mr. Lemmon, with his experience on Arizona ores, recommends approval.

J. H. East, Jr.

for A. H. Koschmann

enclosures

Mining Division
Region IV

August 27, 1951

Memorandum

To: DMA Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMA Docket 1703X, W. C. Kinnon, M. S. Tungsten Mine, Black Canyon Mining District, Yavapai County, Arizona

Enclosed herewith is the final report on the subject docket.

The applicant proposed to explore for extensions of surface zones of tungsten mineralization by drifting and cross-cutting, at an estimated cost of $7,974.74. Although no samples were taken by the examining team, they estimated inferred reserves of from 50,000 to 200,000 tons of ore with a minimum of 0.10 percent tungsten trioxide. It is possible, although not probable that much of the primary scheelite in the surface exposures was converted to tungstite through oxidation of pyrite, and removed by erosion, and that the ore below the zone of oxidation will be of higher grade.

The examining team is indefinite in their final recommendations, but I propose denial of the application unless a review by Dwight Lemon of the Geological Survey gives some credence of the possibility mentioned above.

W. H. King

W. H. King
for P. T. Allsman

Mining Division
Region IV

[illegible] 27, 1951

MEMORANDUM

To: The Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, TVA Project [illegible], [illegible], [illegible], [illegible], Navajo Nation, Black Canyon Mining Subdistrict, Yavapai County, Arizona

Enclosed herewith is the final report on the subject project.

The principal recommendations for the mining of surface zones of sufficient thickness by existing or cross-cutting, at an estimated cost of $[illegible]. Discovery of samples were taken by the prospecting team, that contained interesting reserves of from 50,000 to 200,000 tons of ore with an average of 0.30 percent pyrolusite manganese. It is possible, although not probable, that some of the primary mineralization in the surface exposures was concentrated to manganese through precipitation of pyrolusite, and removed by erosion, so that the ore below the zone of oxidation will be of higher grade.

The examination took no information in Black Tiger Canyon and Grandstone, but I gave the details of the application unless a review by Night Team of the Geological Survey finds some evidence of the possibility mentioned above.

[illegible]
[illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Administration
200 New Customhouse
Denver 2, Colorado

August 21, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 1703X, H. S. Tungsten Mine, Yavapai County, Arizona

Enclosed are the original and 7 copies of the report by C. A. Anderson of the U. S. Geological Survey covering the above docket.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (8)

Mining Division
Date Rec'd.
AUG 13 1951
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

August 9, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject: Final Report, DMA Docket 1703X, W. C. Kinnon's H. S. Tungsten Mine, Black Canyon Mining District, Yavapai County, Ariz.

Enclosed are original and 7 copies of the section on Summary, Conclusions and Recommendations by C. A. Anderson of the Geological Survey and T. M. Romslo of the Bureau of Mines for the above report; also the section on Engineering by Romslo.

The report has my approval.

Brochure is attached.

Walter R. Storms

CC P.T. Allsman (7)
C. A. Anderson
DMA-1703X
DF

WRStorms;als

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1703X, W. C. Kinnon's H. S. Tungsten Mine

Black Canyon Mining District

Yavapai County, Arizona

C. A. Anderson, Geologist
U. S. Geological Survey

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

August 1951

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By C.A. Anderson[1] and T.M. Romslo[2]

The H. S. Tungsten mine, Yavapai County, Ariz., was examined in connection with an application for Governmental aid by W. C. Kinnon, 28 Catilina Ave., Phoenix, Ariz. The applicant proposed to carry out exploratory work designed to determine the potential ore reserves of the mine at an estimated cost of $7,974.74. The examination was made by a Defense Minerals Administration team under docket DMA 1703X.

The deposit was discovered by the applicant in 1942 and has been explored by a short adit and two small open cuts. No tungsten ore has been produced.

The deposit occurs in a large mass of brecciated and silicified granite, pegmatite, aplite and quartz veins, and extends into schist. Scheelite occurs mainly along fractures and in quartz as scattered grains, 1/32 inch to $\frac{1}{2}$ inch in size, and as narrow veinlets that attain a length of several inches.

A visual estimate of mineralized schist in the adit and outcrops at the surface indicates that these zones contain about 0.1 percent WO_3. The degree and extent of mineralization of these zones at depth cannot be predicated on the basis of available data. Therefore, it is impossible to make a reasonably close estimate of the ore reserves. However, in order to present some idea of the magnitude of the deposit, it is estimated that the inferred reserves range from 50,000 to 200,000 tons of material containing a minimum of 0.1 percent WO_3.

1/ Geologist, Geological Survey
2/ Mining Engineer, Bureau of Mines

The mine is inactive at present and most of the equipment and supplies have been removed from the property.

The applicant has proposed to explore the property by driving 252 feet of crosscuts and drifts at an estimated cost of $7,974.74. He has proposed to finance his share of the cost by furnishing equipment and by personally supervising the work.

A visual examination of the deposit revealed no minable tungsten ore and indicated that the inferred reserves range from 50,000 to200,000 tons of material containing about 0.1 percent WO_3.

The applicant believes the surface indications in the strongly silicified zones in the brecciated granite are sufficiently encouraging to warrant additional exploration at depth. He is convinced that sufficient pyrite was present in the surface outcrops to form weak sulfuric acid upon oxidation in sufficient quantity to convert much of the scheelite along fractures to tungstite (WO_3). The latter now has been largely removed by rain wash. The applicant is convinced that only a quarter of the original scheelite remains, and that at depth a grade of 0.4 to 0.6 WO_3 in minable widths is to be expected. Neither of the examining engineers has had sufficient professional experience with scheelite deposits to present a competent opinion on the merits of the applicant's belief in the loss of tungsten from the surface outcrops.

The project is designed to determine the potential ore reserves of the deposit. It is technically feasible and the applicant is believed to capable of supervising the work in an efficient manner.

The proposed method of financing the project fails to meet Governmental regulations in that the applicant's share is less than 25 percent of the cost, and because the rental values for the applicant's equipment probably are excessive. However, it is possible the applicant can finance his share of the cost on a proper basis.

It is recommended that Anderson's Geological report be reviewed by Dwight Lemon of the Geological Survey, who has had many years of experience in the study of tungsten deposits. If Lemon believes the applicant is correct in his intrepretation on the appreciable loss of scheelite from the surface outcrops, it is recommended the applicant be granted a loan to carry out the proposed exploratory work. This work also is recommended in event the tungsten situation is sufficiently critical to warrant the Government to gamble on the possibility of finding reserves that may amount to several times the inferred 200,000 tons of protore containing approximately 0.1 percent WO_3.

However, if Lemon is not favorably impressed with possibilities of an appreciable loss of scheelite from the surface outcrops, or if the tungsten situation is not sufficiently critical to justify Governmental participation in a program designed to develop very low grade tungsten ore deposits it is recommended that the application be denied.

W. C. KINNON'S H. S. TUNGSTEN MINE
BLACK CANYON MINING DISTRICT
YAVAPAI COUNTY, ARIZONA
DMA DOCKET 1703X

Engineering Report

By T. M. Romslo,
Mining Engineer
U. S. Bureau of Mines

August 1951

W. C. KINNON'S H. S. TUNGSTEN MINE
BLACK CANYON MINING DISTRICT
YAVAPAI COUNTY, ARIZONA
DMA DOCKET 1703X

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2	H. S. Tungsten mine (See Geological Report)	

August 1951

INTRODUCTION

This report presents information obtained during the course of an examination of the H. S. Tungsten mine, Yavapai County, Ariz. The examination was made in response to an application for Governmental aid by W. C. Kinnon, 28 E. Catalina Ave., Phoenix, Ariz. The application carries docket number DMA-1703X.

The applicant submitted a plan for exploration of the mine by underground workings at an estimated cost of $7,974.74, and proposed that the work be financed in accordance with regulations governing Governmental aid to exploratory projects.

The mine was examined July 25 and 26, by C. A. Anderson, Geological Survey, and T. M. Romslo, Bureau of Mines.

LOCATION, TOPOGRAPHY AND CLIMATE

The H. S. Tungsten mine is southeasterly about 4½ miles from the village of Cleator, Ariz. It may be reached from Cleator over a winding, dirt road that contains short sections of steep grades, and that crosses Poland and Turkey creeks. These creeks are dry except for short periods during the spring and summer. During those periods the creeks may carry a heavy flow of water from rainstorms or snow, and may become impassable.

The nearest railroad shipping point is at Mayer, about 20 miles to the northwest by a graded road. Phoenix, Ariz., about 75 miles south of the mine, may be reached from Cleator by traveling about 15 miles northwesterly over a graded road and thence south for 60 miles over state highway 69.

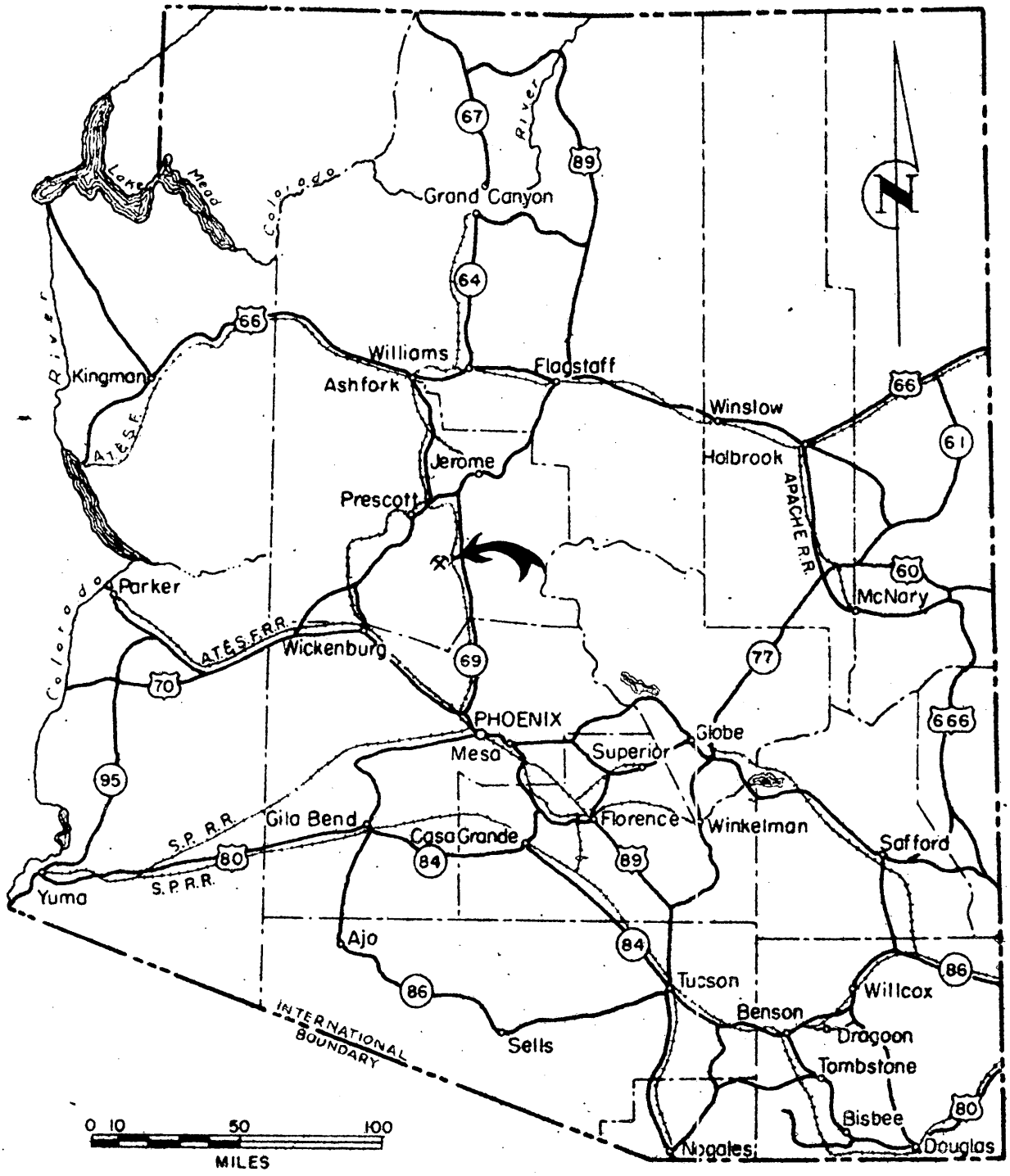

Fig. I Location Map, H.S. Tungsten Mine, Yavapai County, Ariz.

DMA 1703X July 1951

The mine is on the eastern slope of the Bradshaw Mountains at an altitude of about 3,000 feet. It is in an area of rugged topography. On the property the relief is approximately 500 feet.

The summers are hot and the winters are mild. Annual precipatation, probably about 15 inches, consists mainly of heavy rainfalls in the summer and light rain and snowfalls in the winter. There are no permanent streams in the district.

Vegetation is confined to brush and small trees.

HISTORY AND PRODUCTION

The applicant stated that the property was operated by the Howard Silver Co. from 1901 to 1926 for the production of silver-bearing lead-zinc ores and that a small amount of wolframite ore was shipped from the silver workings during World War I. There are no available production records.

The scheelite deposit, located several hundred feet from the silver workings, was discovered by the applicant in 1942. He acquired the property, containing both the silver and scheelite deposits, during 1942 and has carried out intermittent exploratory work at the scheelite property. No ore has been produced from these operations.

PROPERTY AND OWNERSHIP

The property of the H. S. Tungsten mine consists of 6 patented lode mining claims in secs. 1 and 12, T. 10 N., R. I E. (unsurveyed), Black Canyon mining district, Yavapai County, Ariz. The group of claims may be located by the U. S. Mineral Survey No. 3882, Arizona Land District.

W. C. Kinnon, the applicant, 28 E. Catilina Ave., Phoenix, Ariz., is the owner of the property.

DESCRIPTION OF THE DEPOSIT

The H. S. Tungsten deposit occurs in a zone of brecciated and silicated granite, pegmatite, aplite and quartz veins, and extends into schist (Fig. 2). The zone trends N. 10° E. and essentially parallels the foliation of the schist. It widens southward and is about 200 feet wide at its south end. Schist, that does not appear to be brecciated or silicified, surrounds the zone except to the south where the deposit probably merges into a large mass of granite.

Quartz veins in the brecciated granite range from tiny veinlets to veins several feet in width. Many of these veins have a random orientation, but two preferred orientations were noted. One set is parallel to the trend of the silicified zone, and the other set is transverse. Concentrations of these veins have formed two bold outcrops. The granite, and quartz veins are stained with limonite, particularly along fractures, and cubic cavities partially filled with limonte indicate that pyrite was present. Talus covers the area explored by the adit.

The adit was driven in schist and silicified schist. Pyrite is common to the silicified schist particularly in schist fragments between quartz veins. Scheelite is sporadically present in scattered grains, 1/16 to plus $\frac{1}{4}$ inch in size. In a few places it occurs as chain-like veinlets of disconnected grains. The higher grade scheelite

veinlets are only several inches in length and occur in small quartz veins.

The surface was examined at night with an ultra-violet lamp. Scheelite was observed at scattered places in the areas of the two bold outcrops. At the most northerly of these outcrops much of the scheelite is concentrated along N. 70° - 80° W. fractures as narrow veinlets in quartz or adjacent to granite fragments. The scheelite grains range in size from 1/32 of an inch to over $\frac{1}{4}$ of an inch. The other bold outcrop contains veinlets of scheelite, trending N. 70° - 80° W., in which the scheelite grains have a maximum size of $\frac{1}{2}$ inch. The veinlets appear to be confined to a zone, 3 to 4 feet wide, that extends over much of the outcrop length. A little beryl is present in the western part of the zone.

ORE RESERVES

Much additional information is necessary as to the degree and extent of mineralization with depth before a reasonably close estimate can be made of the deposit's ore reserves. However, in order to present some idea as to the magnitude of the deposit, it has been estimated that the reserves range from 50,000 to 200,000 tons and contain about 0.1 percent WO_3. The grade of the ore is based on a visual estimate in which the applicant concurred.

PRESENT STATUS

The property is inactive at present.

The scheelite deposit has been explored by 2 small open cuts, and the adit shown on figure 2.

Equipment in the adit consists of track, an ore car, air pipe line and a pressure tank for drilling water.

Structures on the property consist of 2 cabins, one of which is owned by the applicant.

The mine makes sufficient water for the operation of one drifter. Additional water is available from 3 nearby shafts that are reported to make a total of 290 gallons per minute.

PROPOSED EXPLORATION

The applicant proposed to explore for extensions of zones that contain tungsten mineralization at the surface by drifting and crosscutting from the adit (figure 2). Specifically the proposed work consisted of drifting from points A to B and for crosscutting from points C to D, for a estimated total of 252 feet. During the investigations the examining team and the applicant agreed to a few changes in the proposed plan of work. As modified, the project would consist of driving a crosscut from C to D, and then drifting east or west on any favorable zone developed by the crosscut. The same total footage, 252 feet, is believed to be adequate.

COST OF THE PROJECT

Time Schedule

The applicant has estimated that the work will proceed on the following schedule and will be completed in 4 months.

First 2 weeks	- Organizing, obtaining supplies, laborers,etc.
3rd week	- Cleaning out tunnel and preparing for mining operations
15th week	- Complete drifts and crosscuts.
17th week	- Complete sampling and project work.

Costs

The following are the applicant's estimated costs of the project.

Labor:

1 - Miner (Foreman)	$14.00 a day
1 - Mucker	11.50 a day
Total daily labor cost	$25.50

Cleaning out tunnel, laying track to face, installing air pipe and ventilation tubing, 6 days @ $25.50	$ 153.00
Drifting and crosscutting, total of 252 ft., 84 days @ $25.50	2,142.00
Sampling drifts and crosscuts and misc. work, 8 days @ $25.50	204.00
	$2,499.00
Add approximately 10 percent for labor compensation & industrial disease insurance	245.00
Total for labor	$2,744.00

Supervision:

Mining Engineer, $60 a week, part time basis, 16 weeks	$ 960.00

Installations:

Install and connect compressor, ventilation fan engine and drive, grinder for bits and build small tool room	250.00

Equipment, $50 or more:

1	- $2\frac{1}{2}$ H.P. gasoline-driven 8-inch blower with drive	195.00
100 ft.	- 8-inch vent tube	80.00
1	- 15-cubic foot B.B. mine car	105.00
240 ft.	- Track (480 ft., 12-pound rail), 1950 pounds @ $8.90 per CWT	173.50
25	- 1-5/8 inch Tungsten carbide bits, 25 @ $13.65	341.25
25	- 50-pound boxes, 40 percent special dynamite, @ 23.50 per CWT	293.75
162	- 6- x 6- inch wooden track ties	64.80
1168	- Gallons gasoline @ 25 cents a gallon	292.00
	Total new equipment	$1,545.35

Applicant's equipment:	Est. Cost	Rental per month
1 - Portable new Smith air compressor, 75 cu. ft. a minute	$1,550.00	$ 145.00
1 - Column bar with arm & clamp, one cradle	125.00	25.00
1 - Jackhammer for drifting	175.00	35.00
1 - Water pressure tank, complete with hoses.....	100.00	15.00
1 - Set of tools including shovels, picks, single & double jacks, pipe wrenches, saws, carbide lights, wrenches, & 2 sets drill steel....	100.00	15.00
Totals	$2,100.00	$ 235.00

New material and supplies, under $50:

1 - Jim Crow	$ 23.25
1 - Pipe threader, $\frac{1}{2}$ to 2 inches	35.10
1 - Pipe vice	9.46
1 - Grinding wheel for tungsten-carbide bits	35.00
30 pr - Splice plates with bolts	14.40
1 - Line oiler	16.00
100 lbs - Track spikes $2\frac{1}{2}$ inch	13.00
1 set - 1 inch Hex. drill steel, shanked & threaded	16.05
60 Ft - $1\frac{1}{2}$ inch black pipe @ $25.64 per 100 ft.	15.38
140 Ft - 1 inch black pipe @ 16 cents per ft.	22.40
Pipe fittings	6.80
25 gals - Jackhammer oil @ 34 cents	8.50
2 sets - 1 inch Hex, drill steel, reshanked only @ $1.15 x 6	6.90
8 sets - 1 inch Hex, drill steel, rethreaded only @ $1.15 x 24	27.60
1000 - Blasting caps, #6	21.75
4 rolls - Fuse, XXX	14.55
20 qts - Compressor oil d @ .30 cents	6.00
2 - Steel muck plates, 385 lbs.	36.00
6 - 25 lb cans carbide	77.25
Total new material and supplies	$ 405.39

Water, trucking & miscellaneous:

Water supply for domestic & mine use, including 1 gasoline-driven pump, foot valve, pipe & tank	$ 485.00
Trucking equipment & supplies from Phoenix to mine	325.00

Repairs & parts for equipment.....	$ 170.00
Miscellaneous	150.00
	$1,130.00

The following is a summary of the applicant's estimated cost of the project.

Labor	$2,744.00
Supervision	960.00
Installations	250.00
Equipment, $50 or more	1,545.35
Rental value of applicant's equipment, 4 months @ $235.00	940.00
Materials and supplies, under $50	405.39
Water, trucking and misc.	1,130.00
Total	$7,974.74

PROPOSED FINANCING

The proposed method of financing the project's estimated cost of $7,974.74 calls for $6,074.74 of Government funds, and for the applicant's personal service and equipment, valued at $960 and $940, respectively. Personal service, as part time supervision, would be for 16 weeks at a rate of $60 weekly. Use of the applicant's equipment would be charged to costs for 4 months at a monthly rental rate of $235.00.

The applicant told the writer that the rental values of his equipment, shown under 'Costs' of this report, were supplied by an equipment company in Phoenix, Ariz. It will be noted that the total monthly rental amounts to approximately 11.2 percent of the cost of the equipment. It also should be noted that a rental allowance is requested for tools that individually cost less than $50.

CONCLUSIONS

A visual examination of the deposit revealed no minable tungsten ore and indicated the inferred reserves range from 50,000 to 200,000 tons of material containing about 0.1 percent WO_3.

The applicant believes the surface indications in the strongly silicified zones in the brecciated granite are sufficiently encouraging to warrant additional exploration at depth. He is convinced that sufficient pyrite was present in the surface outcrops to form weak sulfuric acid upon oxidation in sufficient quantity to convert much of the scheelite along fractures to tungstite (WO_3). This largely has been removed by rain wash. The applicant is convinced that only a quarter of the original scheelite remains and that at depth a grade of 0.4 to 0.6 WO_3, in minable widths, is to be expected. Neither of the examining engineers have had sufficient professional experience with scheelite deposits to present a competent opinion on the merits of the applicant's belief in the loss of tungsten from the surface outcrops.

The project is designed to determine the potential ore reserves of the deposit. It is technically feasible and the applicant is believed to be capable of supervising the work in an efficient manner.

The proposed method of financing the project fails to meet Governmental regulations in that the applicant's share is less than 25 percent of the cost, and because the rental values for the applicant's equipment probably are excessive. However, it is possible the applicant can finance his share of the cost on a proper 25-75 basis.

RECOMMENDATIONS

It is recommended that Anderson's Geological report be reviewed by Dwight Lemon of the Geological Survey, who has had many years of experience in the study of tungsten deposits. If Lemon believes the applicant is correct in his intrepretation on the appreciable loss of scheelite from the surface outcrops, it is recommended the applicant be granted a loan to carry out the proposed exploratory work.

The proposed work also is recommended in event the tungsten situation is sufficiently critical to warrant the Government to gamble on the possibility of finding reserves that may amount to several times the inferred 200,000 tons of protore which contains approximately 0.1 percent WO_3.

However, if Lemon is not favorable impressed with possibilities of an appreciable loss of scheelite from the surface outcrops, or if the tungsten situation is not sufficiently critical to justify Governmental participation in a program designed to develop very low-grade tungsten ore deposits, it is recommended that the application be denied.

H. S. TUNGSTEN MINE
YAVAPAI COUNTY, ARIZONA
DMA 1703X

Geology and Ore Reserves

By Charles A. Anderson
Geologist, U. S. Geological Survey

H. S. TUNGSTEN MINE
YAVAPAI COUNTY, ARIZONA

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Figure 2	H. S. Tungsten mine		1

GENERAL GEOLOGIC SETTING

The H. S. Tungsten Mine is located on the northeast flank of the Bradshaw Mountains, adjacent to a large mass of Bradshaw granite that is intrusive into the pre-Cambrian Yavapai Schist. The Yavapai schist contains a number of mineral deposits, chiefly of copper, lead, and zinc, with some associated gold and silver. Mining activity for the base metals in the vicinity of the H. S. Tungsten Mine has been intermittent, depending largely on the price of the base metals. Early mining was limited largely to extracting gold and silver from the oxidized portions of the deposits. The H. S. Tungsten Mine is the only known deposit of scheelite in the Bradshaw Mountains, although some wolframite has been mined from the Tip Top mining district within the main mass of Bradshaw granite, 12 miles to the south of the H. S. Tungsten Mine.

ORE DEPOSIT

The H. S. Tungsten Mine is located in a tongue of brecciated granite, pegmatite, and aplite, cut by numerous quartz veins. The brecciated rock has a trend of N. 10° E. and extends into the Yavapai schist, essentially parallel to the schistosity. The north end of the brecciated mass is composed of silicified schist. The tongue of granite widens southward (Fig. 2) and is about 200 feet wide at the southernmost scheelite-bearing zone. The schist to the east and west of the granite tongue does not appear to be brecciated or silicified.

The quartz veins in the brecciated granite range from tiny veinlets to veins several feet in width. Some of the wider veins are white massive bull quartz. Although many of the veins have a random orientation, two preferred orientations were noted; one set is essentially

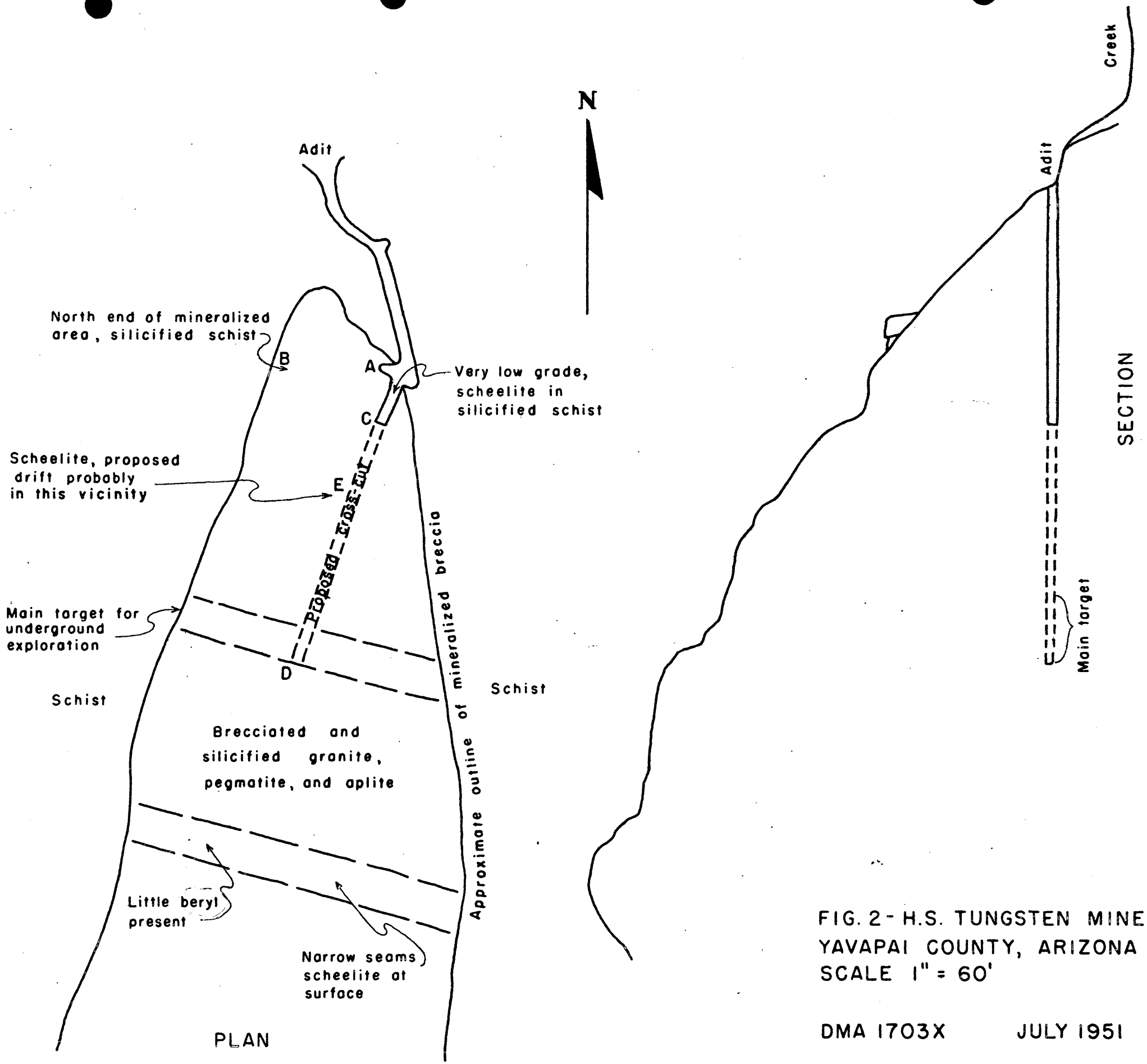


FIG. 2 - H.S. TUNGSTEN MINE
YAVAPAI COUNTY, ARIZONA
SCALE 1" = 60'

DMA 1703X JULY 1951

parallel to the tongue of granite (N. 10° E.), and the other set is transverse. Concentrations of quartz veins have resulted in the formation of two bold outcrops transverse to the tongue of granite.

The adit (Fig. 2) was driven in schist and silicified schist and much of the exposed schist in the adit is barren of scheelite. Where the schist has been silicified in the adit, pyrite is common, particularly in the schist fragments between quartz veins. Scheelite is sporadically present in scattered grains, 1/16 plus 1/4 of an inch in size. In a few places, chain-like veinlets of disconnected grains of scheelite have an orientation parallel to the transverse (N. 75° W.) quartz veins. The higher grade scheelite veins, which are only several inches in length, are in small quartz veinlets that crosscut older and wider barren quartz veins.

Exposures are lacking at the surface over the area explored by the adit owing to a talus cover. The main outcrops at the surface are where quartz veins in the brecciated granite are more numerous, resulting in the formation of two east-trending bold outcrops transverse to the tongue of granite. The granite and quartz veins are stained with limonite, particularly along fractures, and some cubic cavities, partially filled with limonite indicate that pyrite was present.

The bold outcrop 140 feet south of the face of the adit (Fig. 2) was examined at night with an ultra-violet lamp, and scheelite was observed at a number of scattered places on the outcrops. Much of the scheelite was concentrated along N. 70° - 80° W. fractures,forming narrow veinlets in quartz or adjacent to the granite fragments. Some scattered grains of scheelite were observed in quartz. The size of

the scheelite grains ranged from 1/32 of an inch to over 1/4 of an inch. Trains of scheelite grains in places plunged steeply down the dip of the mineralized fractures that dip steeply north and south.

The most southerly bold outcrop contains narrow veinlets of scheelite trending N. 70° - 80° W. in which scheelite grains attain a size of 1/2 inch. These veinlets appear to be limited to a very narrow zone with a maximum observed width of 4 feet, but extend over much of the outcrop length. A little beryl was noted in the western exposures of this zone.

It is apparent the N. 70° - 80° W. fractures were more favorable for tungsten deposition, although some scheelite extended along north-trending fractures where adjacent west-trending fractures are mineralized. Apparently the scheelite is late in the sequence of mineralization, and the transverse fractures and the margins of the granite, aplite, or schist fragments were more favorable for scheelite deposition.

ORE RESERVES

No sampling was done either underground or at the surface because the examination with the ultra-violet lamp showed that the present exposures are very low grade. The applicant stated in his application that samples from the scheelite-bearing zones assayed from 0.2 percent to 5 percent WO_3, and one 8-foot sample assayed 0.28 percent WO_3. Another sample cut across a width of 4½ feet assayed 0.56 percent WO_3. The location of these samples is not known except for the 4½-foot sample which was taken from a cut on the bold outcrop 140 feet south of the adit, (Fig. 2). Examination of this cut with the ultra-violet lamp

revealed that at the present time, scheelite is exposed in only a small part of the cut; a visual estimation of the highest grade for a square foot was 0.2 - 0.4 percent WO_3. The remainder of the cut was practically barren. Apparently the sample was taken from a higher-grade zone, and most of the scheelite was removed in sampling, or by later prospecting.

It was estimated visually that the exposed mineralized schist in the adit contains less than 0.1 percent WO_3, an estimate agreed to by the applicant. The surface exposures of the bold outcrop 120 feet south of the face of the adit was estimated by visual examination to contain approximately 0.1 percent WO_3, an estimate concurred with by the applicant.

An estimate of the potential tonnage of scheelite-bearing rock is difficult to make from the available information. An east-west length of 140 to 200 feet is indicated and presumably several zones 10 to 20 feet wide may contain more than a trace of scheelite. Presumably inferred ore ranging from 50,000 to 200,000 tons is present, containing a minimum of 0.1 percent WO_3. Admittedly, more information is needed as to grade in depth and as to width and number of higher grade zones.

CONCLUSIONS

The examination revealed no tungsten ore of minable grade, either in the underground adit or on the surface. The applicant believes that the surface indications in the quartz-rich zones in the brecciated granite are sufficiently encouraging to warrant additional exploration at depth. The applicant is convinced that sufficient pyrite was present in the surface outcrops to form weak sulfuric acid

upon oxidation in sufficient quantity to convert much of the scheelite along fractures to tungstite (WO_3) which has been largely removed by rain wash. The applicant is convinced that only a quarter of the original scheelite remains and that at depth, a grade of 0.4 to 0.6 WO_3 in minable widths is to be expected.

Anderson has had insufficient professional experience with scheelite deposits to present a competent opinion on the merits of the applicant's belief in the loss of tungsten from the surface outcrops. From a geological point of view, the brecciated granite is of interest because it would have been a potential reservoir for the deposition of scheelite. The important unanswered question is an estimate of the expected grade of tungsten in depth.

RECOMMENDATIONS

It is recommended that this report be reviewed by Dwight Lemmon of the Geological Survey, who has had many years of experience in the study of tungsten deposits. If Lemmon believes that the applicant is correct in his interpretation on the appreciable loss of scheelite from the surface outcrops, a favorable recommendation is in order to grant the applicant an exploration loan. The zone of quartz-rich granite, 140 feet south of the adit is the best target and should be explored by continuing the adit from point C to point D (Fig. 2). Any favorable mineralized zones cut by this adit extension should be followed by east or west drifts.

If the tungsten situation is critical, it may be worthwhile for the Government to gamble on the possibility that a tonnage several times the inferred 200,000 tons might be found by exploration, and the anticipated grade might be of the order of magnitude as the visual estimation of the surface outcrops, approximately 0.1 percent WO_3.

The first step in an exploration program for this objective would be to extend the adit from point C to point D (Fig. 2), and the results obtained could be used as a guide for the expansion of the program.

However, if Lemmon is not favorably impressed with possibilities of appreciable loss of scheelite from the surface exposures, or if the tungsten situation is not sufficiently critical for the Government to be interested in a long-shot gamble to develop very low grade tungsten ore, it is recommended that the application be denied.

Mr. Holden

28 E. Catalina Ave
Phoenix, Arizona

July 7, 1951

RECEIVED
JUL 1 6 1951
LANDON F. STROBEL
Executive Secretary

Mr. Tom Lyon,
Director of Supply Division
Defense Minerals Administration
Washington 25, D.C.

Re: DMA-1703-x

Dear Mr. Lyon:

Your letter of June 29 has been received and I appreciate the prompt attention you have given to my application.

The information submitted in the application about the scheelite deposit is conservative. I have seen many prospects and producers and honestly feel that this prospect has the "ear-marks" of a substantial producer. It is hoped your examining engineer will visit the property soon.

In the event that I can be of assistance in this matter please call on me.

Very truly yours,

W. C. Kinnon

W. C. Kinnon

Referred to Field
6/29/51 JM

Index of F ile to Reports and Records Unit
DMA 1703X

1 copy letter to Lyon from Kinnon dated 7/7/51
2 copies letter to East from Lyon dated 6/29/51
2 copies letter to Kinnon from Lyon dated 6/29/51
1 copy letter to Kinnon from Strobel dated 6/21/51
2 copies MF-103

6/28/51

3654

JUN 29 1951

Mr. J. H. Maat, Jr.
Executive Officer
DMA Field Team, Region IV
250 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. Maat:

Mr. W. G. Kinnon of 28 N. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Clanton, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

Lowell B. Moon
Bureau of Mines

McKnight
Geological Survey

CNLemmon:mem

cc: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holderer
Coordinating Committee
Reg. Field Team - Reg. IV
FILES

3624

JUN 29 1951

Mr. W. G. Kinnon
38 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
[illegible]-1703-x

Dear Mr. Kinnon

Your application of June 12 for an exploration project of 7,974.74 at the R. S. Tungsten mine, near Sheldon, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal.

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. Peck, Jr., Executive Officer, [illegible] Field Team, Region IV, [illegible] New Customhouse, Denver, Colorado. Mr. Peck will get in touch with you upon it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

Wilsonmiller
cc: Adm. Pending File
Mr. Strobel
Field Team IV
Mr. Holderer
Mr. Lawson
Files

JUL 29 1957

Mr. W. O. Kinnan
28 N. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
DMA-1703-x

Dear Mr. Kinnan:

Your application of June 12 for an exploration project of $7,974.74 at the M. S. Tungsten mine, near Chester, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. R. East, Jr., Executive Officer, DMA Field Team, Region IV, 238 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

DMLemmon:mm
cc: Adm. Reading File
Mr. Strobel
Field Team IV
Mr. Holderer ✓
Mr. Lemmon
Files

JUN 29 1951

Mr. J. K. Kent, Jr.
Executive Officer
DMC Field Team, Region IV
234 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-1 - Tungsten

Dear Mr. Kent:

Mr. V. S. Kinnon of 28 E. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. K. Tungsten mine near Clarkdale, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

Lowell B. Moon
Bureau of Mines

W. E. Knight
Geological Survey

CC:lemmon:mem

cc: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holderer
Coordinating Committee
Reg. Field Team - Reg. IV

Mr. J. H. Faust, Jr.
Executive Officer
DMA Field Team, Region IV
13th Floor Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. Faust:

Mr. W. C. Kinnon of 28 N. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Cimator, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Enclosures

Tom Lyon, Chairman
Coordinating Committee

Approved:

Bureau of Mines

Geological Survey

GMLemmon:mem

cc: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holderer
Coordinating Committee
Reg. Field Team - Reg. IV
FILES

Mr. W. C. Kinnon
[illegible] Carolina Avenue
Tucson, Arizona

In reply please refer to:
W-1703-2

Dear Mr. Kinnon:

Your application of June 1[illegible] for an exploration project of 7,97[illegible].7[illegible] at the [illegible] Hampton mine, near Chester, Yavapai County, Arizona, was received too late for action during the present fiscal year which ends June 30. We have no record of a government examination of the property which would permit us to accept or reject your proposal.

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. R. [illegible], Jr., Resident Engineer, [illegible] Field Team, Region IV, 2[illegible] New Customhouse, Denver, Colorado. Mr. [illegible] will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

WLennon:[illegible]
cc: Adm. Reading File
Mr. Strobel
Field Team IV
Mr. Holderness
Mr. Lennon
Files

Mr. C. H. Yost, Jr.
Executive Officer
BM Field Team, Region IV
228 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. Yost:

Mr. W. G. Ehmann of 28 E. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Clanton, Yavapai County, Arizona. Mr. Ehmann's application is dated June 12 and arrived here June 15, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Ehmann is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Enclosures

Tom Lyon, Chairman
Coordinating Committee

Approved:

Bureau of Mines

Geological Survey

CC: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holdsaw
Coordinating Committee
Reg. Field Team - Reg. IV

DRAFT

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team, Region IV
224 New Customhouse
Denver, Colorado

DMA 1703 X -- Tungsten

Dear Mr. East:

Mr. W. C. Kinnon of 28 E. Catalina Ave., Phoenix, Arizona has applied for an exploration project at the H. S. Tungsten mine near Cleator, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines of Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon
Chairman, Coordinating Committee

Approved:

_____
Bureau of Mines

_____
Geological Survey

Enclosures

D. M. Lemmon June 27, 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

DRAFT

Mr. J. H. East, Jr.
Executive Officer, DMA Field Team, Region IV
224 New Customhouse
Denver, Colorado

DMA 1705 X — Tungsten

Dear Mr. East:

Mr. W. C. Kinnon of 28 E. Catalina Ave., Phoenix, Arizona has applied for an exploration project at the H. S. Tungsten mine near Cleator, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines of Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon
Chairman, Coordinating Committee

Approved:

_____
Bureau of Mines

_____
Geological Survey

Enclosures

D. M. Lemmon June 27, 1951

DRAFT

Mr. W. C. Kinnon
28 E. Catalina Ave.
Phoenix, Arizona

In reply, please refer to DMA 1703 X

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,974.74 at the H.S.Tungsten mine, near Cleator, Yavapai County, Arizona was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal without making a field examination.

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

D.M.Lemmon June 27, 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

DRAFT

Mr. W. C. Kinnon
26 E. Catalina Ave.
Phoenix, Arizona

In reply, please refer to DMA 1703 X

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,974.74 at the H.S.Tungsten mine, near Chester, Yavapai County, Arizona was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal without making a field examination.

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

D.M.Lemmon June 27, 1951

FILE CONTENTS TO DMA FIELD TEAM REGION IV

DMA-1703-X - Tungsten
H. S. TUNGSTEN MINE
PHOENIX, ARIZONA

1. MF-103 Application with 5 sheets attached

2. 2 maps

Sent to Coord. Comm.
6-29-51

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

JUN 29 1951

Mr. J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV
224 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

WRL
7-11-51

Dear Mr. East:

Mr. W. C. Kinnon of 28 E. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Cleator, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1. ?

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

Lowell B. Moon
Bureau of Mines

Edwin T. McKnight
Geological Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

JUN 29 1951

Mr. J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV
224 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. East:

Mr. W. C. Kinnon of 28 N. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Cleator, Yavapai County, Arizona. Mr. Kinnon's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnon is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

_____
Bureau of Mines

_____
Geological Survey

FILE CONTENTS TO DMA FIELD TEAM REGION IV

DMA-1703-X - Tungsten
H. S. TUNGSTEN MINE
PHOENIX, ARIZONA

1. MF-103 Application with 5 sheets attached

2. 1 maps

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Mr. W. C. Kinnon
28 N. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
DMA-1703-x

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,974.74 at the H. S. Tungsten mine, near Cleator, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

DMLemmen:mem
cc: Adm. Reading File
Mr. Strobel
Field Team IV
Mr. Holderer
Mr. Lemmen
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
DMA-1703-x

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,974.74 at the H. S. Tungsten mine, near Cleator, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

DMLemmenlmem
cc: Adm. Reading File
Mr. Strobel
Field Team IV
Mr. Holderer
Mr. Lemmen
Files

Form MF-103
(April 1951)

U. DEPARTMENT OF THE INTER
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA-1703X

Date received 6/18/51

Participation

H. S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

W. C. Kinnon
28 E. Catalina Ave.,
Phoenix, Arizona

Name and address of applicant

Date June 12, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $7974.74

Mineral or metal Scheelite (calcium tungstate)

Percentage of Government participation 75%

Location of mine Black Canyon Mining District, Cleator, Yavapai County, Arizona

Date of filing MF-100 June 14, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

H.S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

THE APPLICANT

1. Individual
2. —
3. —
4. (a) applicant received mining and metallurgical training at University of Nevada 1924 - 1929; was forman and superintendent of various mines until 1936 when joined Allis-Chalmers Mfg Co. as Sales Engineer. Since 1943 Manager of Phoenix District Office, specializing on mining equipment.
(b) project manager will be the applicant.

5. Owner
6. None
7. —
8. 1951 Financial Statement:

Assets;	value (cost) of patented claims known as Silver, Kapurnicus, Labeno, Labeno No. 1, Labeno No. 2, Labeno No. 3, Labeno No.4, Alice and Olive lodes, including taxes paid ..	$1310.07
	improvements on silver, lead-zinc veins consisting of 3 shafts, 7 cuts and 3 tunnels with underground workings, less depreciated condition of workings, total value ..	62066.50
	value of mill site excavations and concrete retaining wall ..	2500.00
	improvements on tungsten deposit consisting of 1 tunnel and 2 cuts, total value ..	4180.00
	machinery and equipment, total value ..	2360.00
	Total assets	$72416.57

Liabilities; none

9. Applicant will furnish mining equipment and supervision for the proposed project. The rental value of the equipment and salary for supervision is sufficient to pay applicants part of the cost of the project. What this amounts to in money is given in answer to Question 23.

10. (a) U.S. Mineral Survey No. 3882, Arizona Land District, claims Silver, Kapurnicus, Labeno, Labeno No. 2, Labeno No.3, Labeno No.4, Alice and Olive lodes, secs. 1-12 T. 10 N., R. 1 E. unsurveyed. Black Canyon District, Yavapai County, Ariz.
(b) Kapurnicus claim.

11. H. S. Tungsten Mine. Former owner of claims Howard Silver Co.

12. Property located 4½ miles by road south of Cleator, Arizona. Nearest railroad shipping point Mayer, Arizona 20 miles over improved gravel roads. 75 miles from Phoenix, Arizona over 15 miles of gravel, graded roads and 60 miles of paved highway.

13. Water available from 3 mine shafts reported to make total of 290 g.p.m. Would be necessary to install pumping equipment in shafts.

14. One single room cabin 12 x 14; one two room house owned by others but

available at nominal rental.

15. Ore could be shipped or trucked to Hillside Mill, near Bagdad, Arizona. The distance is approximately 127 miles over paved and gravel roads. The deposit is expected to warrant a concentrator on the ground.

16. (a) The property was operated from about 1901 to 1926 for the production of silver bearing lead-zinc ores. A small quantity of wolframite ore was shipped from the silver workings during world war I. The present scheelite deposit was discovered in 1942 but was not developed due to lack of finances and interest.

    (b) The adjoining properties have produced only silver, lead-zinc ores.

17. There has been no production of tungsten ores from the present deposit.

18. Property has not been operating except for intermittent work in driving the tunnel indicated on sketches 1, 2, and 3. Some ore of commercial grade was encountered in the tunnel, however the workings have not reached the zones where higher values may be expected from the surface indications.

19. The tunnel was driven part of the present length by means of hand drilling following the softer easier formation along the hanging wall fault.

THE EXPLORATION

20. Exploration will be conducted for scheelite and molybdenite occuring in quartz and aplite.

21. The proposed work is to extend the underground workings in the tunnel to zones where surface indications are favorable to the existence of ore shoots. Specifically it is proposed to extend drift from A to B to the foot wall as shown on sketch 2; also, to extend cross cut from C to D. This work will also explore cross fracture enrichments at E. The total amount of drifting and cross cutting will amount to 252 feet. The proposed project will require 16 weeks.

22. The deposit as shown on sketch 1 is in a belt of Yavapai schist, locally ½ to 3/4 mile wide that strikes N 10 to 30 deg. E, dips 60 to 80 degees westerly and extends miles north and south. It is intruded on both sides by granite. The schist is cut by porphyry, aplite and pegmatite dikes.

    The deposit is genetically connected with igneous rocks. Fracturing prior to the metasomatic replacements was intensive. Quartz veins and masses follow the schistosity but more prominently the E- W fractures.

    Fluorescing pale blue the scheelite is disseminated in the quartz and aplite. There is minor molybdenite together with scant zinc blend and galena. Pyrite occurs throughout the deposit occassionally in considerable quantity.

    The outcropping of quartz and aplite carry scheelite throughout and contain zones stained with oxides of iron, tungsten and molybdenum and honey combed after pyrite. Acids generated in the shallow oxidized zone have altered a

22. Continued

large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock.

Samples from these zones have assayed from .2% to 5% WO_3. One sample cut across a width of 4½ feet assayed .56% WO_3. At another point an 8 foot sample assayed .28 %.

Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite.

23. Answers given on page 4

The Requirements and Costs

23

(a) Labor: 1 - Miner (Foreman) . . . . $14.00 per day
1 - Mucker. . . . . 11.50 per day

Total labor cost per day. . $25.50

Cleaning out tunnel, laying track to face, installing air pipe and ventilation tubing, etc.

6 days @ $25.50 . . . . . $ 153.00

Drifting and cross cutting total of 252 feet. 25 1/8 ft = 3' advance/day

84 days @ $25.50. . . . . 2142.00

Sampling drifts and cross cuts and miscellaneous work.

8 days @ $25.50 . . . . . 204.00

$2499.00

Add 10% for labor compensation and industrial disease insurance. 245.00

Total for labor $2744.00

(b) 1 - Supervisor, Mining Engineer, $60.00 per week, part time basis. 16 weeks. . . . . $ 960.00

(c) None

(d) Install and connect compressor, ventilation fan engine and drive, grinder for bits and build small tool room. . . . . $ 250.00

(e)

1	- 2½ HP gasoline engine driven 8" blower with drive	$1195.00
100	- Feet of 8" vent tube (Dupont)	80.00
1	- 15 cubic foot B.B. mine car	105.00
250	- Feet Track 480' 12# rails 1950# @ $8.90	173.55
25	- 1-5/8" Tungsten carbide Timken Bits @ $13.65.	341.25
25	- 50 lb. boxes 40% special dynamite @ $23.50 per 100 lbs. . . .	293.75
162	- 6 x 6 wooden track ties	64.80
1168	- Gallons gasoline @ 25¢ per gallon	292.00
	Total	$1545.35

(f) None

(g) 1 - Portable air compressor 75 cubic feet of free air per minute, Smith, new.
Rental per month. . . . . 1550 . . . . $ 145.00

1 - Column bar with arm and clamp, one cradle.
Rental per month. . . . . 125 . . . . 25.00

1 - Jack hammer complete for drifting.
Rental per month. . . . . 175 . . . . 35.00

1 - Water pressure tank, air hose and water hose. 100
Rental per month. 15.00

1 - Set of tools including shovels, picks, single and double jacks, pipe wrenches, saws, carbide lights, wrenches, and two sets drill steel.
Rental per month. . . . . 150 . . . . 15.00

Total Rental Per Month . . . . . $ 235.00

(h) 1 - Jim Crow. . . . . $ 23.25
1 - Pipe threader 1/2" to 2". 35.10
1 - Pipe Vice 9.46
1 - Grinding wheel with carborundum for grinding tungsten carbide bits with belt. 35.00
30 - Pair splice plates and necessary bolts. 14.40
1 - Line oiler. 16.00
100 - Pounds track spikes 2½. 13.00
1 - Set 1" Hex. drill steel shanked and threaded, 1 piece 3' long, 1 piece 5' long, 1 piece 18" long. 16.05
60 - Feet of 1½" black air pipe @ $25.64 per 100'. 15.38
140 - Feet of 1" black air pipe @ 16¢ 22.40
1½" and 1" pipe fittings. 6.80
25 - Gallons jack hammer oil Kelubric @ 34¢. 8.50
2 - Sets 1" Hex. drill steel re-shanked only @ $1.15 x 6. . . . 6.90
8 - Sets 1" Hex. drill steel re-threaded only @ $1.15 x 24. . . 27.60
1000 - Blasting Caps #6... . . . . 21.75
4 - 1000' rolls fuse XXX. 14.55
20 - Quarts lubricating oil for compressor @30¢. 6.00
2 - Steel muck plates 3/16" x 4' x 6', 385# 36.00
6 - 25# can miners carbide. 77.25

Total. . . . . $ 405.39

(i) Water supply for domestic and mine use, including 1 - gasoline engine driven pump, foot valve, pipe and tank ... $485.00

Trucking equipment and supplies from Phoenix to mine 325.00

Repairs and parts for jackhammer, compressor and etc 170.00

Miscellaneous 150.00

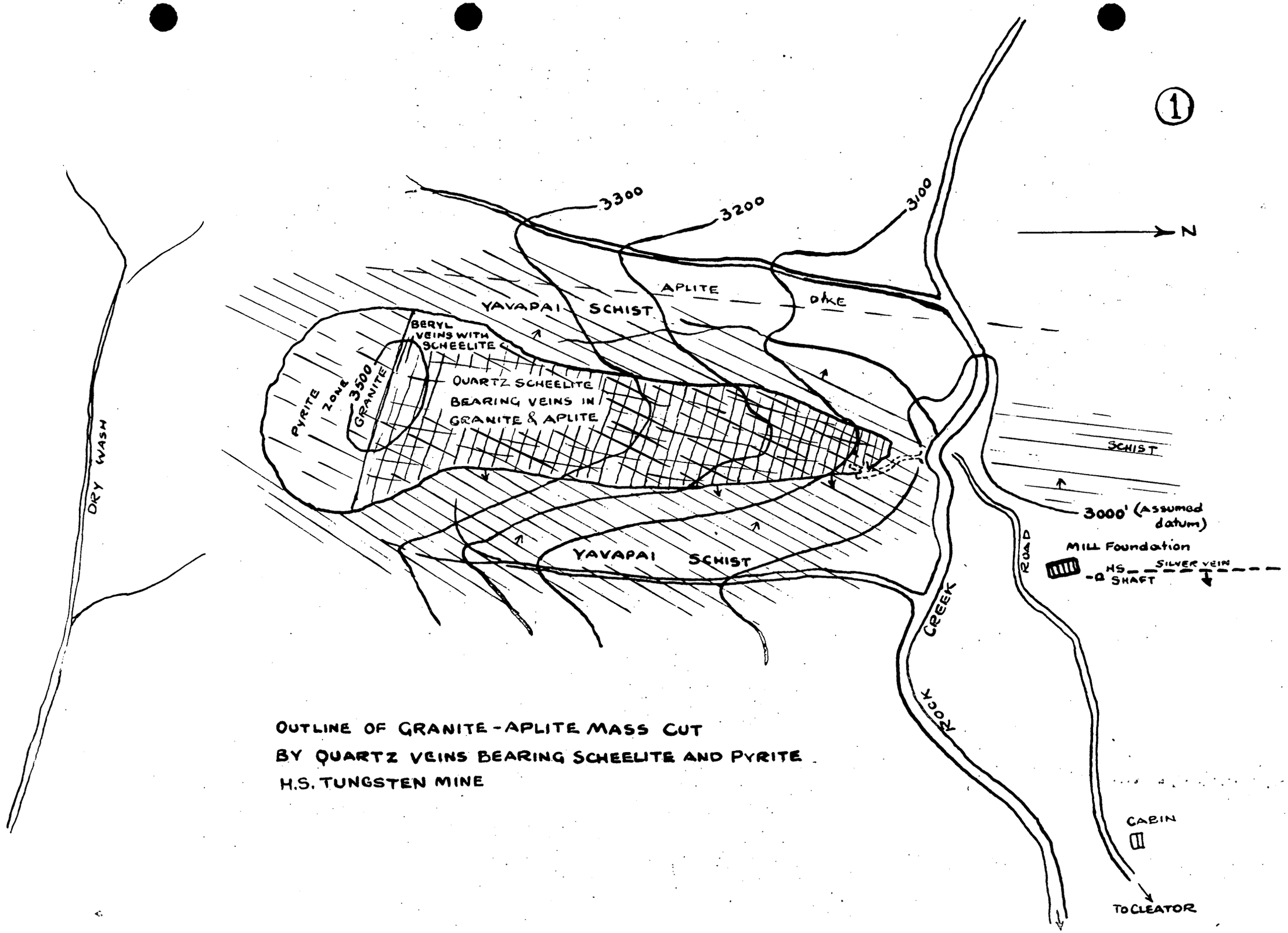
Total ..... $ 1130.00

24. Time schedule of the project:

First two weeks organizing, obtaining supplies, labor etc
3rd week, cleaning out tunnel and preparing for mining operations.
15th week, complete drifts and cross cuts.
17th week, complete sampling and project work, etc.

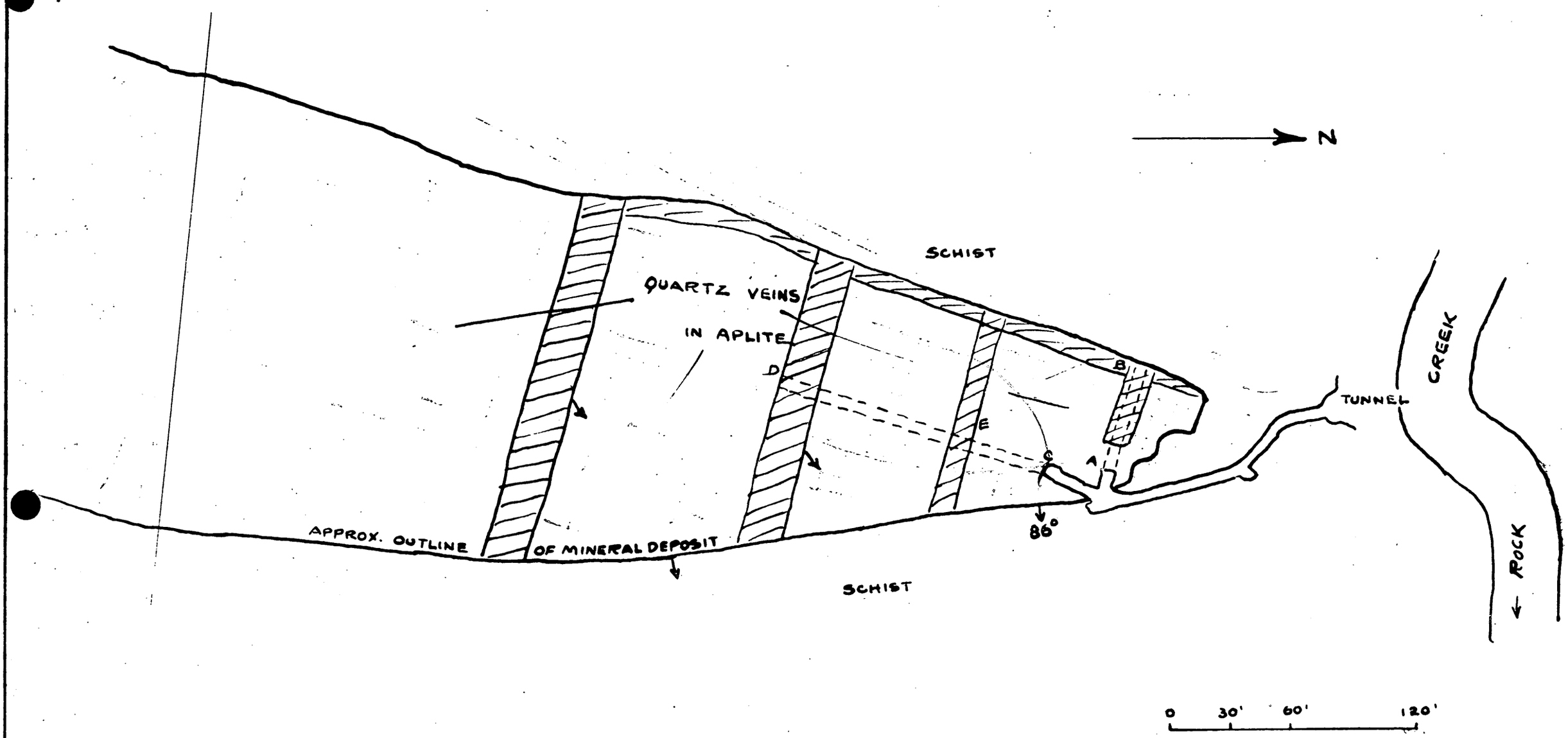
Outlay in money:	Government share	Applicant share
(a) Labor	$2744.00	------
(b) Supervision	------	$960.00
(d) Installations	250.00	------
(e) Equipment $50 or more	1545.35	------
(g) Rental value equipment by operator, 4 months @ $235.00	------	940.00
(h) Material and supplies under $50	405.39	------
(i) Water, trucking & Misc.	1130.00	------
Total	$ 6074.74	$1900.00

1993 68



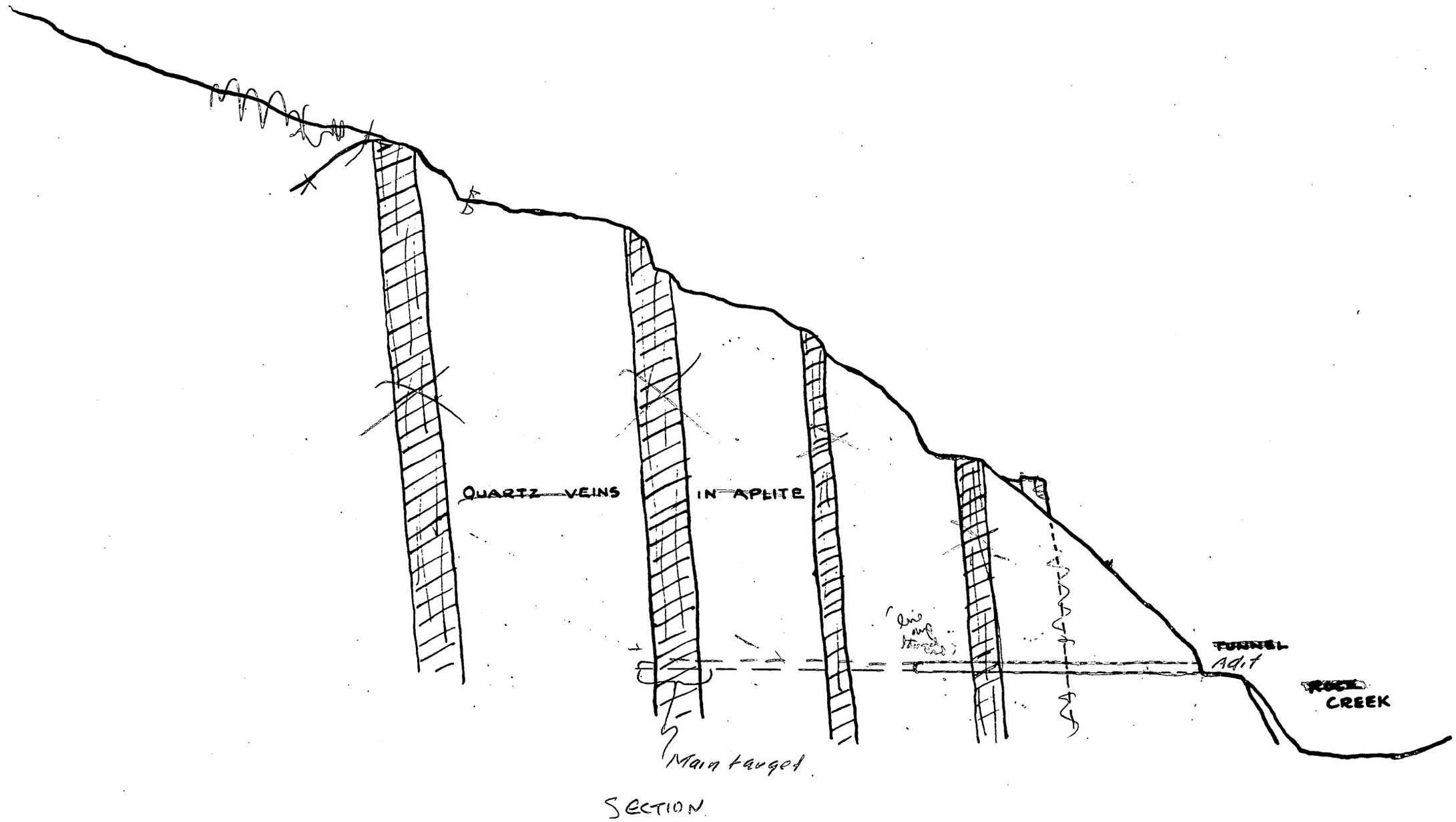
OUTLINE OF GRANITE-APLITE MASS CUT
BY QUARTZ VEINS BEARING SCHEELITE AND PYRITE
H.S. TUNGSTEN MINE

WCK 5-51



PLAN SHOWING POSSIBLE ORE CHUTES ALONG CROSS FRACTURES AND ALONG FOOT WALL OF H.S. TUNGSTEN PROSPECT

WCK 5.51



CROSS SECTION SHOWING POSSIBLE ORE CHUTES
ALONG CROSS FRACTURES LOOKING WEST.
H.S. TUNGSTEN MINE

FILE COPY
SURNAME:

Lemmon
Gutman

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Mr. J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV
224 New Customhouse
Denver, Colorado

JUN 29 1951

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. East:

Mr. W. C. Kinnan of 28 N. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the N. S. Tungsten mine near Cleator, Yavapai County, Arizona. Mr. Kinnan's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnan is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

Bureau of Mines

Geological Survey

GMLemmon:mem

cc: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holderer
Coordinating Committee
Reg. Field Team - Reg. IV
FILES

FILE COPY
SURNAME:

Lemmon
Holden
Hudson
McKnight for
Rowe
Moon

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

JUN 29 1951

Mr. W. C. Kinnon
28 N. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
DMA-1703-x

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,974.74 at the H. S. Tungsten mine, near Cleator, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. H. East, Jr., Executive Officer, DMA Field Team, Region IV, 234 New Customhouse, Denver, Colorado. Mr. East will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

DMLemmon:mon
cc: Adm. Reading File
Mr. Strobel
Field Team IV
Mr. Holderer
Mr. Lemmon
Files

G. E. C.

JUN 29 1951

Mr. J. H. East, Jr.
Executive Officer
DMA Field Team, Region IV
234 New Customhouse
Denver, Colorado

In reply please refer to:
DMA-1703-X - Tungsten

Dear Mr. East:

Mr. W. C. Kinnan of 26 E. Catalina Ave., Phoenix, Arizona, has applied for an exploration project at the H. S. Tungsten mine near Gleeson, Yavapai County, Arizona. Mr. Kinnan's application is dated June 12 and arrived here June 18, too late for consideration during the present fiscal year.

It is requested that you arrange for an examination of the property during the summer to investigate the merit of the proposal. The property is not identifiable in the records of the Bureau of Mines or Geological Survey in Washington. The information given by Mr. Kinnan is not adequate to allow us to judge the possibilities of success.

This request for a field examination is based on an assumption that exploration funds will be available during the next fiscal year, and should be ignored if no funds are available after July 1.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Approved:

Bureau of Mines

Geological Survey

CWLemmon:mm

cc: Adm. Reading File
Mr. Strobel
Mr. Lemmon
Mr. Holderer
Coordinating Committee
Reg. Field Team - Reg. IV
FILES

JUN 29 1951

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

In reply please refer to:
GMA-1703-x

Dear Mr. Kinnon:

Your application of June 12 for an exploration project of $7,994.70 at the E. S. Templeton mine, near Cleator, Yavapai County, Arizona, was received here too late for action during the present fiscal year which ends June 30. We have no record of a Government examination of the property which would permit us to accept or reject your proposal

In the expectation that funds may be available next fiscal year for worthwhile exploration projects, we are requesting that a field examination of your property be made this summer through Mr. J. K. West, Jr., Executive Officer, DMA Field Team, Region IV, 224 New Customhouse, Denver, Colorado. Mr. West will get in touch with you when it is possible to arrange for an examination.

Very truly yours,

Tom Lyon
Director, Supply Division

DiLemmelman
cc: Adm. Pending File
Mr. Strobel
Field Team IV
Mr. Holderer
Mr. Lemmen
Files

June 21, 1951

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

Subject: DMA-1703X
Re: Exploration Loan
Labeno, Labeno No. 2,
Labeno No. 3, Labeno
No. 4, Alice and Olive
lodes

My dear Mr. Kinnon:

Receipt is acknowledged of your application and attachments of June 12, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1703X and was referred to Mr. George B. Holderer, Chief, Tungsten Branch on June 18, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1703X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: Strobel-2
Files
>Holderer
Lyon

Form MF-103
(April 1951)

U. DEPARTMENT OF THE INTERI
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma-1703X

Date received 6/18/51

Participation

H. S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

W. C. Kinnon
28 E. Catalina Ave.,
Phoenix, Arizona

Name and address of applicant

Date June 12, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $7974.74

Mineral or metal Scheelite (calcium tungstate)

Percentage of Government participation 75%

Location of mine Black Canyon Mining District,
Cleator, Yavapai County, Arizona

Date of filing MF-100 June 14, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Addendum to MF-105, p[illegible] 1
H.S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

THE APPLICANT

1. Individual
2. —
3. —
4. (a) applicant received mining and metallurgical training at University of Nevada 1924 - 1929; was foreman and superintendent of various mines until 1936 when joined Allis-Chalmers Mfg Co. as Sales Engineer. Since 1943 Manager of Phoenix District Office, specializing on mining equipment.
(b) project manager will be the applicant.

5. Owner
6. None
7. —
8. 1951 Financial Statement:

Assets; value (cost) of patented claims known as Silver, Kapurnicus, Labeno, Labeno No. 1, Labeno No. 2, Labeno No. 3, Labeno No.4, Alice and Olive lodes, including taxes paid ..	$1310.07
improvements on silver, lead-zinc veins consisting of 3 shafts, 7 cuts and 3 tunnels with underground workings, less depreciated condition of workings, total value ..	62066.50
value of mill site excavations and concrete retaining wall ..	2500.00
improvements on tungsten deposit consisting of 1 tunnel and 2 cuts, total value ..	4180.00
machinery and equipment, total value ..	2360.00
Total assets	$72416.57

Liabilities; none

9. Applicant will furnish mining equipment and supervision for the proposed project. The rental value of the equipment and salary for supervision is sufficient to pay applicants part of the cost of the project. What this amounts to in money is given in answer to Question 23.

10. (a) U.S. Mineral Survey No. 3882, Arizona Land District, claims Silver, Kapurnicus, Labeno, Labeno No. 2, Labeno No.3, Labeno No.4, Alice and Olive lodes, secs. 1-12 T. 10 N., R. 1 E. unsurveyed. Black Canyon District, Yavapai County, Ariz.
(b) Kapurnicus claim.

11. H. S. Tungsten Mine. Former owner of claims Howard Silver Co.

12. Property located 4½ miles by road south of Cleator, Arizona. Nearest railroad shipping point Mayer, Arizona 20 miles over improved gravel roads. 75 miles from Phoenix, Arizona over 15 miles of gravel, graded roads and 60 miles of paved highway.

13. Water available from 3 mine shafts reported to make total of 290 g.p.m. Would be necessary to install pumping equipment in shafts.

14. One single room cabin 12 x 14; one two room house owned by others but

available at nominal rental.

15. Ore could be shipped or trucked to Hillside Mill, near Bagdad, Arizona. The distance is approximately 127 miles over paved and gravel roads. The deposit is expected to warrant a concentrator on the ground.

16. (a) The property was operated from about 1901 to 1926 for the production of silver bearing lead-zinc ores. A small quantity of wolframite ore was shipped from the silver workings during world war I. The present scheelite deposit was discovered in 1942 but was not developed due to lack of finances and interest.

(b) The adjoining properties have produced only silver, lead-zinc ores.

17. There has been no production of tungsten ores from the present deposit.

18. Property has not been operating except for intermittent work in driving the tunnel indicated on sketches 1, 2, and 3. Some ore of commercial grade was encountered in the tunnel, however the workings have not reached the zones where higher values may be expected from the surface indications.

19. The tunnel was driven part of the present length by means of hand drilling following the softer easier formation along the hanging wall fault.

THE EXPLORATION

20. Exploration will be conducted for scheelite and molybdenite occuring in quartz and aplite.

21. The proposed work is to extend the underground workings in the tunnel to zones where surface indications are favorable to the existence of ore shoots. Specifically it is proposed to extend drift from A to B to the foot wall as shown on sketch 2; also, to extend cross cut from C to D. This work will also explore cross fracture enrichments at E. The total amount of drifting and cross cutting will amount to 252 feet. The proposed project will require 18 weeks.

22. The deposit as shown on sketch 1 is in a belt of Yavapai schist, locally ½ to 3/4 mile wide that strikes N 10 to 30 deg. E, dips 60 to 80 degees westerly and extends miles north and south. It is intruded on both sides by granite. The schist is cut by porphyry, aplite and pegmatite dikes.

The deposit is genetically connected with igneous rocks. Fracturing prior to the metasomatic replacements was intensive. Quartz veins and masses follow the schistosity but more prominently the E- W fractures.

Fluorescing pale blue the scheelite is disseminated in the quartz and aplite. There is minor molybdenite together with scant zinc blend and galena. Pyrite occurs throughout the deposit occassionally in considerable quantity.

The outcropping of quartz and aplite carry scheelite throughout and contain zones stained with oxides of iron, tungsten and molybdenum and honey combed after pyrite. Acids generated in the shallow oxidized zone have altered a

22. Continued

large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock.

Samples from these zones have assayed from .2% to 5% WO_3. One sample cut across a width of 4½ feet assayed .56% WO_3. At another point an 8 foot sample assayed .28 %.

Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite.

23. Answers given on page 4

The Requirements and Costs

23

(a) Labor: 1 - Miner (Foreman) . . . . $14.00 per day
1 - Mucker. . . . . 11.50 per day

Total labor cost per day. . $25.50

Cleaning out tunnel, laying track to face, installing air pipe and ventilation tubing, etc.

6 days @ $25.50 . . . . . $ 153.00

Drifting and cross cutting total of 252 feet.

84 days @ $25.50. . . . . 2142.00

Sampling drifts and cross cuts and miscellaneous work.

8 days @ $25.50 . . . . . 204.00

$2499.00

Add 10% for labor compensation and industrial disease insurance. 245.00

Total for labor $2744.00

(b) 1 - Supervisor, Mining Engineer, $60.00 per week, part time basis. 16 weeks. . . . . $ 960.00

(c) None

(d) Install and connect compressor, ventilation fan engine and drive, grinder for bits and build small tool room. . . . . $ 250.00

(e)

1	- 2½ HP gasoline engine driven 8" blower with drive	$ 155.00
100	- Feet of 8" vent tube (Dupont)	80.00
1	- 15 cubic foot B.B. mine car	105.00
250	- Feet Track 480' 12# rails 1950# @ $8.90	173.55
25	- 1-5/8" Tungsten carbide Timken Bits @ $13.65.	341.25
25	- 50 lb. boxes 40% special dynamite @ $23.50 per 100 lbs. . . .	293.75
162	- 6 x 6 wooden track ties	64.80
1168	- Gallons gasoline @ 25¢ per gallon	292.00
	Total	$1545.35

(f) None

(g) 1 - Portable air compressor 75 cubic feet of free air per minute, Smith, new.
Rental per month. . . . . $ 145.00

1 - Column bar with arm and clamp, one cradle.
Rental per month. 25.00

1 - Jack hammer for drifting.
Rental per month. 35.00

1 - Water pressure tank, air hose and water hose.
Rental per month. 15.00

1 - Set of tools including shovels, picks, single and double jacks, pipe wrenches, saws, carbide lights, wrenches, and two sets drill steel.
Rental per month. 15.00

Total Rental Per Month . . . . . $ 235.00

(h)

1	Jim Crow.	$ 23.25
1	Pipe threader 1/2" to 2".	35.10
1	Pipe Vice	9.46
1	Grinding wheel with carborundum for grinding tungsten carbide bits with belt.	35.00
30	Pair splice plates and necessary bolts.	14.40
1	Line oiler.	16.00
100	Pounds track spikes 2½.	13.00
1	Set 1" Hex. drill steel shanked and threaded, 1 piece 3' long, 1 piece 5' long, 1 piece 18" long.	16.05
60	Feet of 1½" black air pipe @ $25.64 per 100'.	15.38
140	Feet of 1" black air pipe @ 16¢	22.40
	1½" and 1" pipe fittings.	6.80
25	Gallons jack hammer oil Kelubric @ 34¢.	8.50
2	Sets 1" Hex. drill steel re-shanked only @ $1.15 x 6. . . .	6.90
8	Sets 1" Hex. drill steel re-threaded only @ $1.15 x 24. . .	27.60
1000	Blasting Caps #6...	21.75
4	1000' rolls fuse XXX.	14.55
20	Quarts lubricating oil for compressor @30¢.	6.00
2	Steel muck plates 3/16" x 4' x 6', 385#	36.00
6	25# can miners carbide.	77.25
	Total.	$ 405.39

(i) Water supply for domestic and mine use, including 1 - gasoline engine driven pump, foot valve, pipe and tank ... $485.00

Trucking equipment and supplies from Phoenix to mine 525.00

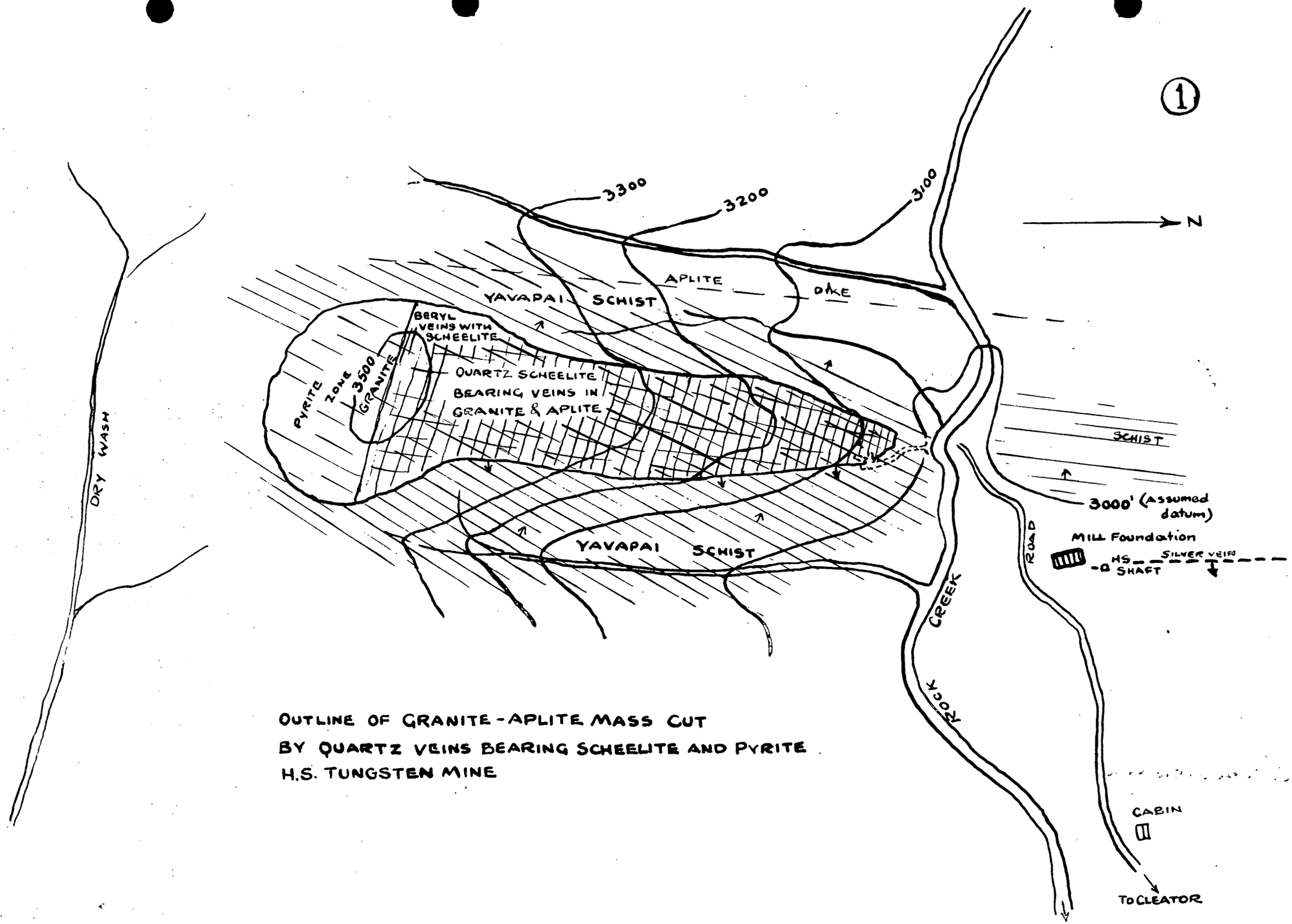
Repairs and parts for jackhammer, compressor and etc 170.00

Miscallaneous 150.00
Total .... $ 1130.00

24. Time schedule of the project:

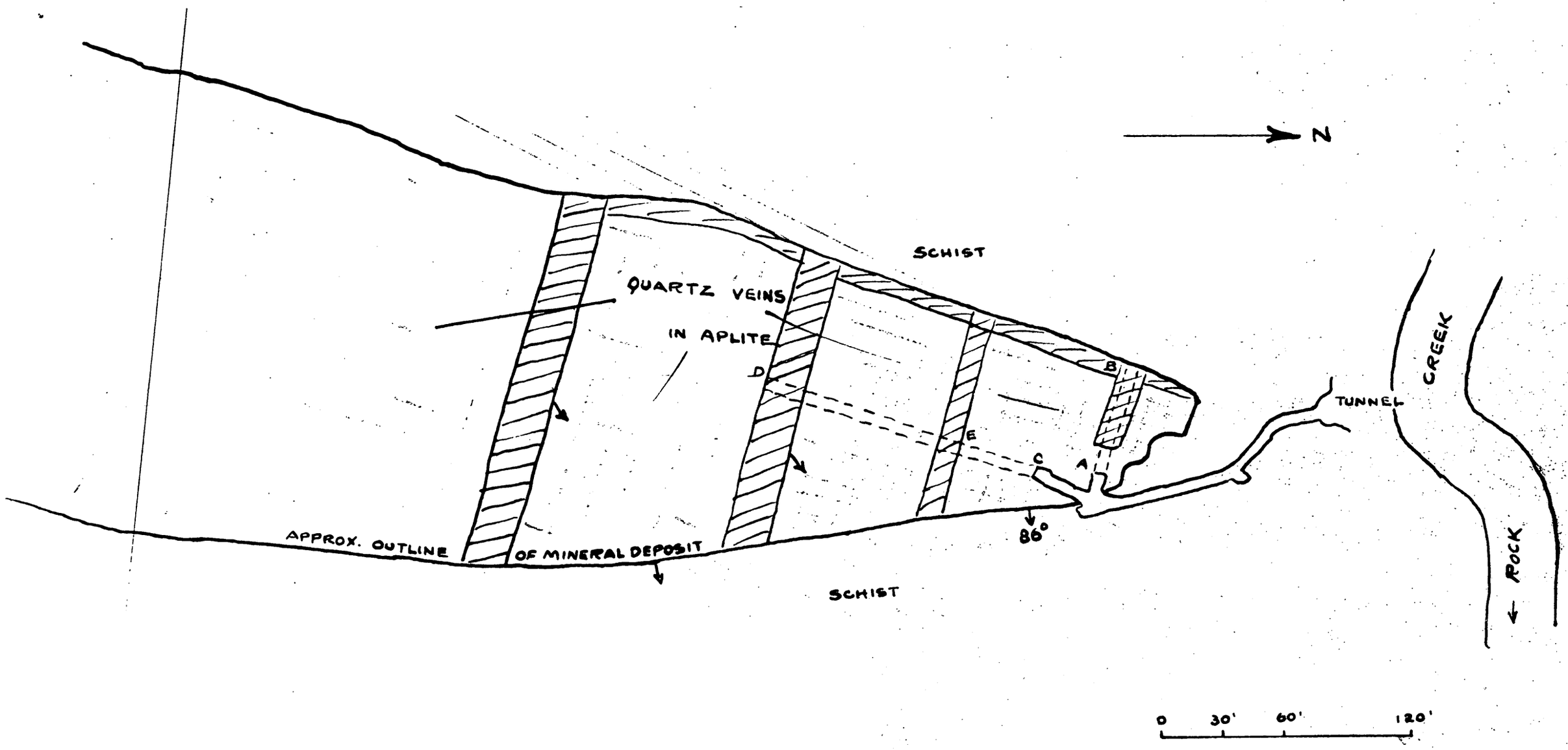
First two weeks organizing, obtaining supplies, labor etc
3rd week, cleaning out tunnel and preparing for mining operations.
15th week, complete drifts and cross cuts.
17th week, complete sampling and project work, etc.

Outlay in money:	Government share	Applicant share
(a) Labor	$2744.00	------
(b) Supervision	------	$960.00
(d) Installations	250.00	------
(e) Equipment $50 or more	1545.35	------
(g) Rental value equipment by operator, 4 months @ $235.00	------	940.00
(h) Material and supplies under $50	405.39	------
(i) Water, trucking & Misc.	1130.00	------
Total	$ 6074.74	..... $1900.00



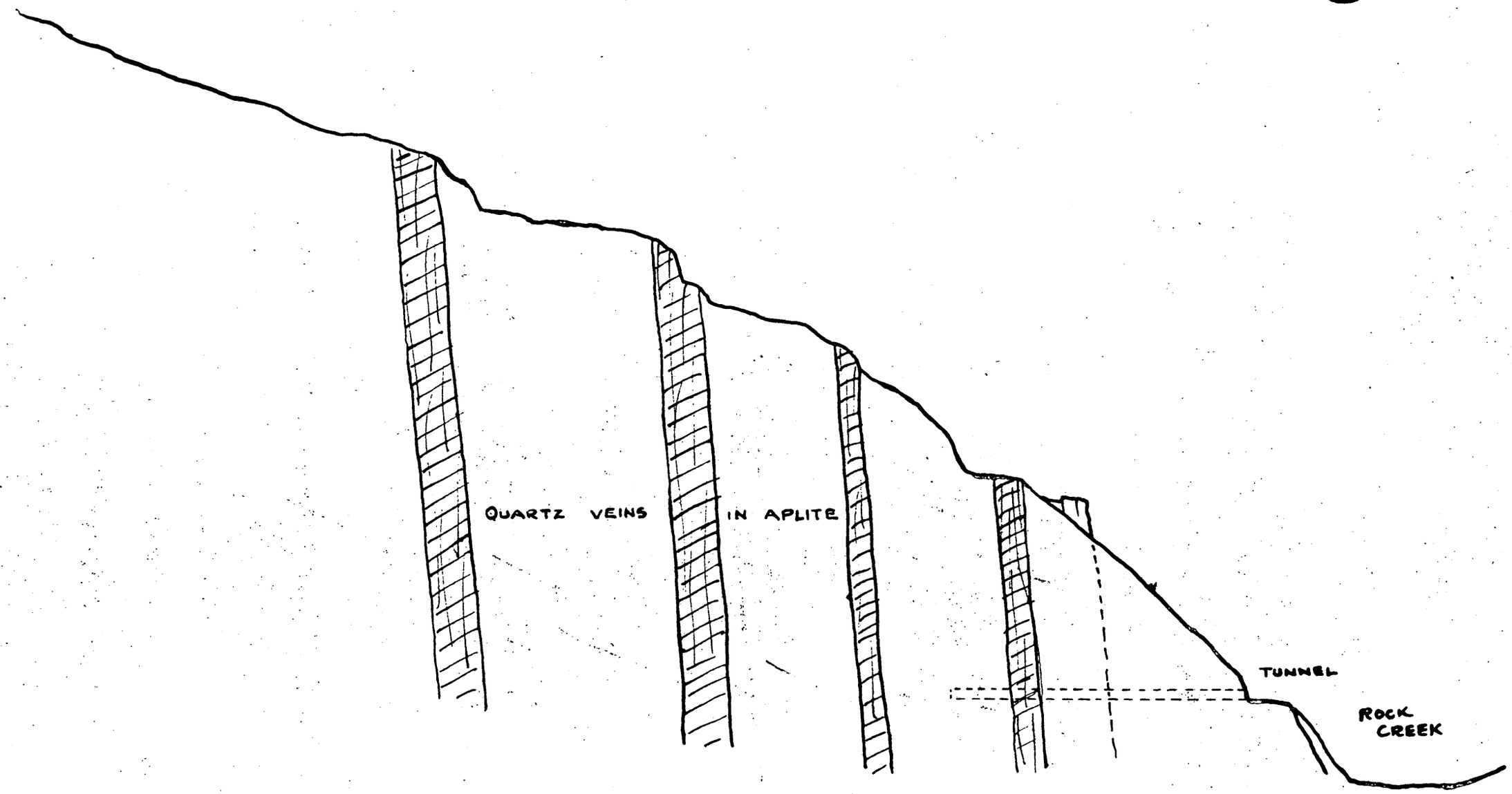
OUTLINE OF GRANITE-APLITE MASS CUT
BY QUARTZ VEINS BEARING SCHEELITE AND PYRITE
H.S. TUNGSTEN MINE

WCK 5-51



PLAN SHOWING POSSIBLE ORE CHUTES ALONG CROSS FRACTURES AND ALONG FOOT WALL OF H.S. TUNGSTEN PROSPECT

WCK 6.51



CROSS SECTION SHOWING POSSIBLE ORE CHUTES
ALONG CROSS FRACTURES LOOKING WEST.
H.S. TUNGSTEN MINE

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA — 1703 X

Date received 6/18/51

Participation

H. S. Tungsten Mine
26 E. Catalina Ave.,
Phoenix, Arizona

J. C. Kinnon
26 E. Catalina Ave.,
Phoenix, Arizona

Name and address of applicant

Date June 18, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost 7374.74

Mineral or metal Scheelite (calcium tungstate)

Percentage of Government participation 75%

Location of mine Black Canyon Mining District, Cleator, Yavapai County, Arizona

Date of filing MF-100 June 14, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

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*1. Is applicant an individual, partnership, or corporation?
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16—64067-1

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    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:

    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.

    (*b*) State briefly the known history and production of adjoining and neighboring properties.

    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:

    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)

    (*a*) Describe the ore or mineral deposits briefly.

    (*b*) Submit available maps and assay data.

    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.

    (*b*) Supervisors, by numbers and positions, with salaries of each.

    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.

    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.

    (*f*) Cost of rental for equipment which the operator proposes to rent.

    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.

    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.

    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- By ----------
(Name of company) (Signature of authorized official)

---------- ----------
(Date) (Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Addendum to MF-195, page 1
H.S. Tungsten Mine
23 E. Catalina Ave.,
Phoenix, Arizona

THE APPLICANT

1. Individual
2. —
3. —
4. (a) applicant received mining and metallurgical training at University of Nevada 1924 - 1929; was foreman and superintendent of various mines until 1936 when joined Allis-Chalmers Mfg Co. as Sales Engineer. Since 1943 Manager of Phoenix District Office, specializing on mining equipment.
(b) project manager will be the applicant.

5. Owner
6. None
7. —
8. 1951 Financial Statement;

Assets; value (cost) of patented claims known as Silver, Kapurnicus, Labeno, Labeno No. 1, Labeno No. 2, Labeno No. 3, Labeno No. 4, Alice and Olive lodes, including taxes paid .. $1810.57

improvements on Silver, lead-zinc veins consisting of 3 shafts, 7 cuts and 3 tunnels with underground workings, less depreciated condition of workings, total value .. 62066.50

value of mill site excavations and concrete retaining wall .. 500.00

improvements on tungsten deposit consisting of 1 tunnel and 2 cuts, total value .. 150.00

machinery and equipment, total value .. 2360.00

Total assets $72416.57

Liabilities; none

9. Applicant will furnish mining equipment and supervision for the proposed project. The rental value of the equipment and salary for supervision is sufficient to pay applicants part of the cost of the project. What this amounts to in money is given in answer to Question 15.

10. U.S. Mineral Survey No. 5082, Arizona Land District, claims Silver, Kapurnicus, (a) Labeno, Labeno No. 1, Labeno No. 3, Labeno No. 4, Alice and Olive lodes, secs. 1-12 T. 10 N., R. 1 E. unsurveyed. Black Canyon District, Yavapai County, Ariz.
(b) Kapurnicus claim.

11. H. S. Tungsten Mine. Former owner of claims Howard Silver Co.

12. Property located 4½ miles by road south of Cleator, Arizona. Nearest railroad shipping point Mayer, Arizona 20 miles over improved gravel roads. 75 miles from Phoenix, Arizona over 15 miles of gravel, graded roads and 60 miles of paved highway.

13. Water available from 2 mine shafts reported to ease total of 200 g.p.m. Would be necessary to install pumping equipment in shafts.

14. One single room cabin 12 x 14; one two room house owned by others but

available at nominal rental.

15. Ore could be shipped or trucked to Hillside Mill, near Bagdad, Arizona. The distance is approximately 127 miles over paved and gravel roads. The deposit is expected to warrant a concentrator on the ground.

16. (a) The property was operated from about 1901 to 1926 for the production of silver bearing lead-zinc ores. A small quantity of wolframite ore was shipped from the silver workings during world war I. The present scheelite deposit was discovered in 1942 but was not developed due to lack of finances and interest.

(b) The adjoining properties have produced only silver, lead-zinc ores.

17. There has been no production of tungsten ores from the present deposit.

18. Property has not been operating except for intermittent work in driving the tunnel indicated on sketches 1, 2, and 3. Some ore of commercial grade was encountered in the tunnel, however the workings have not reached the zones where higher values may be expected from the surface indications.

19. The tunnel was driven part of the present length by means of hand drilling following the softer easier formation along the hanging wall fault.

THE EXPLORATION

20. Exploration will be conducted for scheelite and molybdenite occuring in quartz and aplite.

21. The proposed work is to extend the underground workings in the tunnel to zones where surface indications are favorable to the existence of ore shoots. Specifically it is proposed to extend drift from A to B to the foot wall as shown on sketch 2; also, to extend cross cut from C to D. This work will also explore cross fracture enrichments at E. The total amount of drifting and cross cutting will amount to 252 feet. The proposed project will require 16 weeks.

22. The deposit as shown on sketch 1 is in a belt of Yavapai schist, locally ½ to 3/4 mile wide that strikes N 10 to 30 deg. E, dips 60 to 80 degees westerly and extends miles north and south. It is intruded on both sides by granite. The schist is cut by porphyry, aplite and pegmatite dikes.

The deposit is genetically connected with igneous rocks. Fracturing prior to the metasomatic replacements was intensive. Quartz veins and masses follow the schistosity but more prominently the N- W fractures.

Fluorescing pale blue the scheelite is disseminated in the quartz and aplite. There is minor molybdenite together with scant zinc blende and galena. Pyrite occurs throughout the deposit occassionally in considerable quantity.

The outcropping of quartz and aplite carry scheelite throughout and contain zones stained with oxides of iron, tungsten and molybdenum and honey combed after pyrite. Acids generated in the shallow oxidized zone have altered a

22. Continued

large part of the scheelite to tungstite which being soft and friable has mostly been removed from the weathered rock.

Samples from these zones have assayed from .2% to 5% WO_3. One sample cut across a width of 4½ feet assayed .56% WO_3. At another point an 8 foot sample assayed .28 %.

Under these favorable zones the applicant believes there will be found sizeable ore shoots of commercial ore with principle values in scheelite.

23. Answers given on page 4

The Requirements and Costs

23

(a) Labor: 1 - Miner (Foreman) . . . . $14.00 per day
1 - Mucker. . . . . 11.50 per day

Total labor cost per day. . $25.50

Cleaning out tunnel, laying track to face, installing air pipe and ventilation tubing, etc.

6 days @ $25.50 . . . . . $ 153.00

Drifting and cross cutting total of 252 feet.

84 days @ $25.50. . . . . 2142.00

Sampling drifts and cross cuts and miscellaneous work.

8 days @ $25.50 . . . . . 204.00

$2499.00

Add 10% for labor compensation and industrial disease insurance. 245.00

Total for labor $2744.00

(b) 1 - Supervisor, Mining Engineer, $60.00 per week, part time basis. 16 weeks. . . . . $ 960.00

(c) None

(d) Install and connect compressor, ventilation fan engine and drive, grinder for bits and build small tool room. . . . . $ 250.00

(e)
1 - 2½ HP gasoline engine driven 8" blower with drive . . . . . $ 195.00
100 - Feet of 8" vent tube (Dupont) 80.00
1 - 15 cubic foot B.B. mine car 105.00
250 - Feet Track 480' 12# rails 1950# @ $8.90 . . . . . 173.55
25 - 1-5/8" Tungsten carbide Timken Bits @ $13.65. . . . . 341.25
25 - 50 lb. boxes 40% special dynamite @ $23.50 per 100 lbs. . . . 293.75
162 - 6 x 6 wooden tr[illegible] ties 64.80
1168 - Gallons gasoline @ 25¢ per gallon 292.00

Total $1545.35

(f) None

Addendum to MW103, page 5
H.S.Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

(g)	1 - Portable air compressor 75 cubic feet of free air per minute, Smith, new. Rental per month.	$ 145.00
	1 - Column bar with arm and clamp, one cradle. Rental per month.	25.00
	1 - Jack hammer for drifting. Rental per month.	35.00
	1 - Water pressure tank, air hose and water hose. Rental per month.	15.00
	1 - Set of tools including shovels, picks, single and double jacks, pipe wrenches, saws, carbide lights, wrenches, and two sets drill steel. Rental per month.	15.00
	Total Rental Per Month	$ 235.00
(h)	1 - Jim Crow.	$ 23.25
	1 - Pipe threader 1/2" to 2".	35.10
	1 - Pipe Vice	9.46
	1 - Grinding wheel with carborundum for grinding tungsten carbide bits with belt.	35.00
	30 - Pair splice plates and necessary bolts.	14.40
	1 - Line oiler.	16.00
	100 - Pounds track spikes 2½.	13.00
	1 - Set 1" Hex. drill steel shanked and threaded, 1 piece 3' long, 1 piece 5' long, 1 piece 18" long.	16.05
	60 - Feet of 1½" black air pipe @ $25.64 per 100'.	15.38
	140 - Feet of 1" black air pipe @ 16¢	22.40
	1½" and 1" pipe fittings.	6.80
	25 - Gallons jack hammer oil Kelubric @ 34¢.	8.50
	2 - Sets 1" Hex. drill steel re-shanked only @ $1.15 x 6. . . .	6.90
	8 - Sets 1" Hex. drill steel re-threaded only @ $1.15 x 24. . .	27.60
	1000 - Blasting Caps #6...	21.75
	4 - 1000' rolls fuse XXX.	14.55
	20 - Quarts lubricating oil for compressor @30¢.	6.00
	2 - Steel muck plates 3/16" x 4' x 6', 385#	36.00
	6 - 25# can miners carbide.	77.25
	Total.	$ 405.39

(i) Water supply for domestic and mine use, including 1 - gasoline engine driven pump, foot valve, pipe and tank ... $485.00

Trucking equipment and supplies from Phoenix to mine 525.00

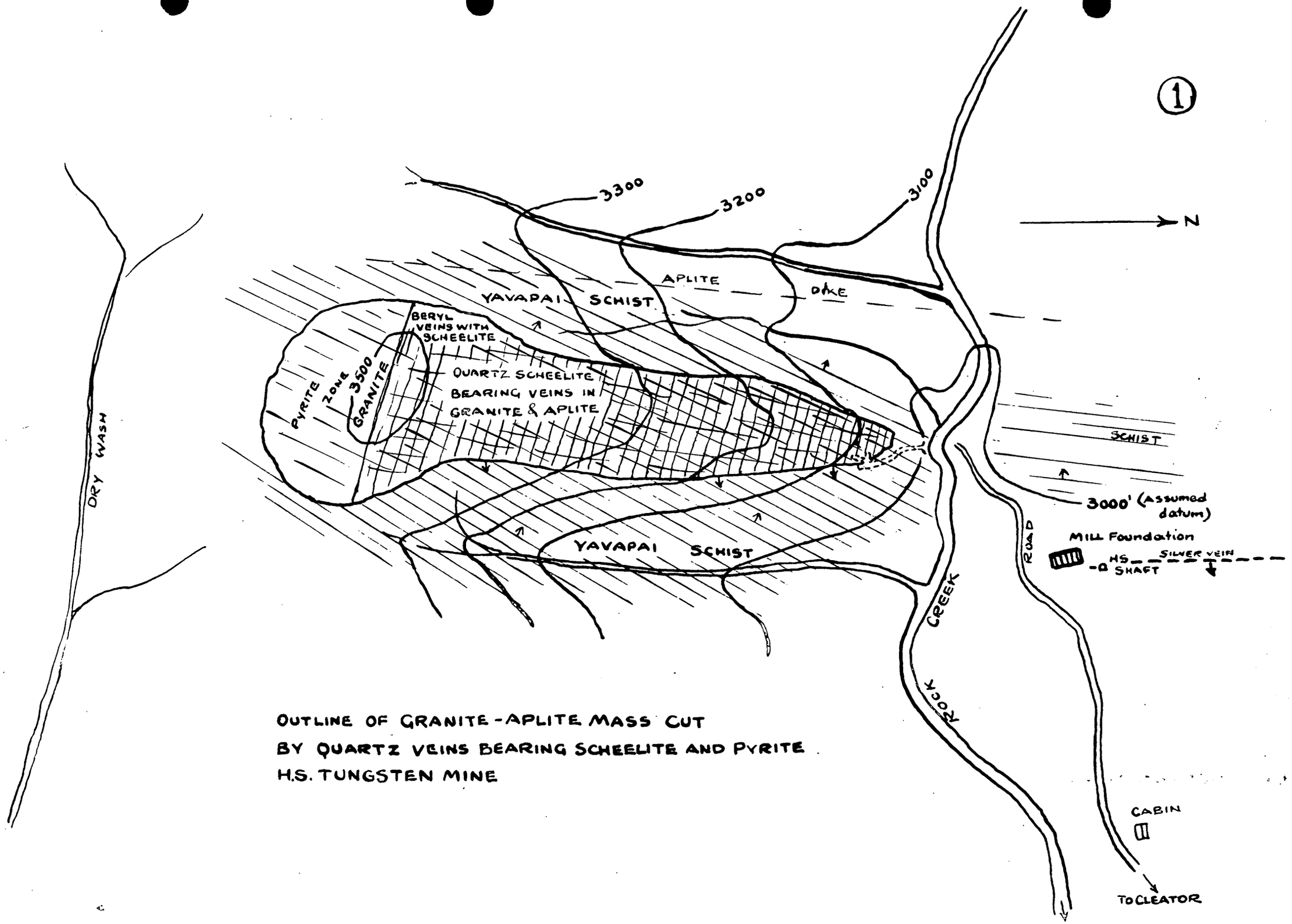
Repairs and parts for jackhammer, compressor and etc 170.00

Miscellaneous 150.00
Total .... $ 1150.00

24. Time schedule of the project:

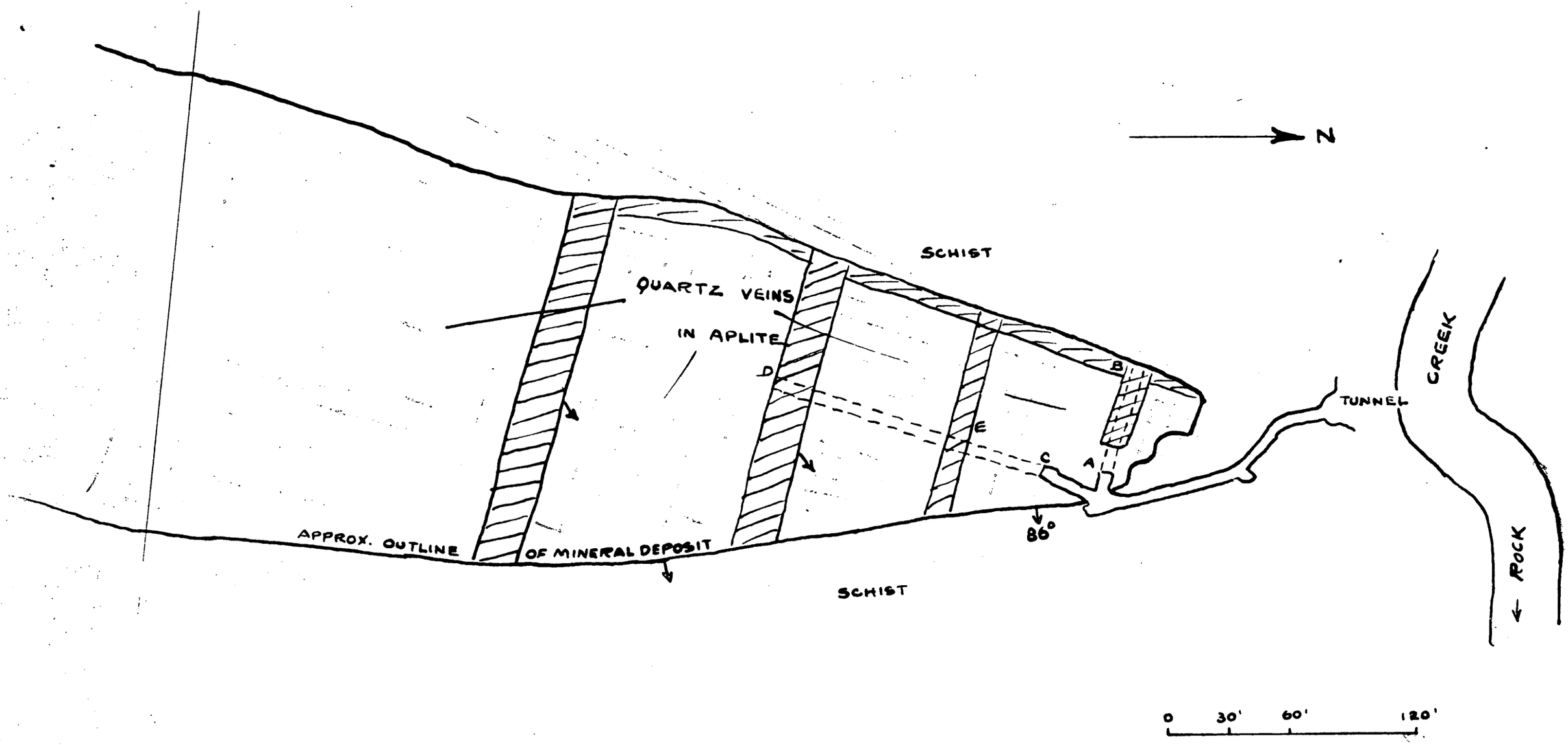
First two weeks organizing, obtaining supplies, labor etc
3rd week, cleaning out tunnel and preparing for mining operations.
15th week, complete drifts and cross cuts.
17th week, complete sampling and project work, etc.

Outlay in money:	Government share		Applicant share
(a) Labor	$2744.00		------
(b) Supervision	------		$960.00
(d) Installations	250.00		------
(e) Equipment $50 or more	1545.35		------
(g) Rental value equipment by operator, 4 months @ $235.00	------		940.00
(h) Material and supplies under $50	405.39		------
(i) Water trucking & Misc.	1150.00		------
Total	$ 6074.74	.....	$1900.00



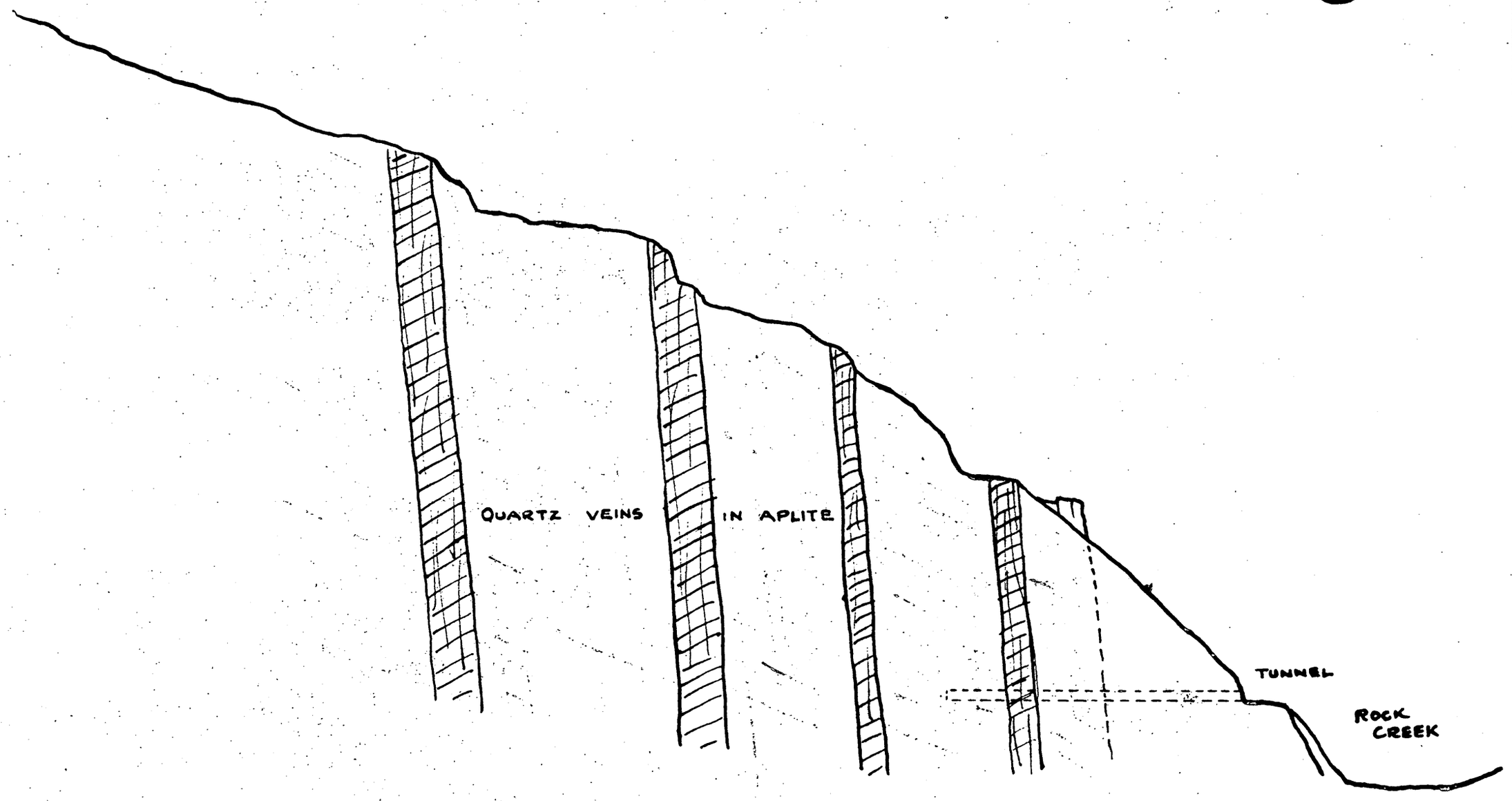
OUTLINE OF GRANITE-APLITE MASS CUT
BY QUARTZ VEINS BEARING SCHEELITE AND PYRITE
H.S. TUNGSTEN MINE

WCK 5-51



PLAN SHOWING POSSIBLE ORE CHUTES ALONG CROSS FRACTURES AND ALONG FOOT WALL OF H.S. TUNGSTEN PROSPECT

WCK 5.51



CROSS SECTION SHOWING POSSIBLE ORE CHUTES
ALONG CROSS FRACTURES LOOKING WEST.
H.S. TUNGSTEN MINE

June 21, 1951

Mr. W. C. Kinnon
28 E. Catalina Avenue
Phoenix, Arizona

Subject: DMA-1703X
Re: Exploration Loan
Labeno, Labeno No. 2,
Labeno No. 3, Labeno
No. 4, Alice and Olive
lodes

My dear Mr. Kinnon:

Receipt is acknowledged of your application and attachments of June 12, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1703X and was referred to Mr. George B. Holderer, Chief, Tungsten Branch on June 18, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1703X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

LFSTROBEL:js
cc: >Strobel-2
Files
Holderer
Lyon

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. dma-1703X

Date received 6/18/51

Participation

H. S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

W. C. Kinnon
28 E. Catalina Ave.,
Phoenix, Arizona

Name and address of applicant

Date June 12, 1951

FILL IN THIS BLOCK

Date of application May 30, 1951

Estimated cost $7974.74

Mineral or metal Scheelite (calcium tungstate)

Percentage of Government participation 75%

Location of mine Black Canyon Mining District, Cleator, Yavapai County, Arizona

Date of filing MF-100 June 14, 1951

DMA Docket Number, if available

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

---------- (Name of company) By ---------- (Signature of authorized official)

---------- (Date) ---------- (Title)

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16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Addendum to MF-103, page 1
H.S. Tungsten Mine
28 E. Catalina Ave.,
Phoenix, Arizona

THE APPLICANT

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4. (a) applicant received mining and metallurgical training at University of Nevada 1924 - 1929; was foreman and superintendent of various mines until 1936 when joined Allis-Chalmers Mfg Co. as Sales Engineer. Since 1943 Manager of Phoenix District Office, specializing on mining equipment.
(b) project manager will be the applicant.

5. Owner
6. None
7. —
8. 1951 Financial Statement;

Assets;	value (cost) of patented claims known as Silver, Kapurnicus, Labeno, Labeno No. 1, Labeno No. 2, Labeno No. 3, Labeno No. 4, Alice and Olive lodes, including taxes paid ..	$1510.07
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	value of mill site excavations and concrete retaining wall ..	2500.00
	improvements on tungsten deposit consisting of 1 tunnel and 2 cuts, total value ..	4180.00
	machinery and equipment, total value ..	2360.00
	Total assets	$72416.57

Liabilities; none

9. Applicant will furnish mining equipment and supervision for the proposed project. The rental value of the equipment and salary for supervision is sufficient to pay applicants part of the cost of the project. What this amounts to in money is given in answer to Question 23.

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$2499.00

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(b) 1 - Supervisor, Mining Engineer, $60.00 per week, part time basis. 16 weeks. . . . . $ 960.00

(c) None

(d) Install and connect compressor, ventilation fan engine and drive, grinder for bits and build small tool room. . . . . $ 250.00

(e)

1	- 2½ HP gasoline engine driven 8" blower with drive	$ 195.00
100	- Feet of 8" vent tube (Dupont)	80.00
1	- 15 cubic foot B.B. mine car	105.00
250	- Feet Track 480' 12# rails 1950# @ $8.90	173.55
25	- 1-5/8" Tungsten carbide Timken Bits @ $13.65.	341.25
25	- 50 lb. boxes 40% special dynamite @ $23.50 per 100 lbs. . . .	293.75
162	- 6 x 6 wooden track ties	64.80
1168	- Gallons gasoline @ 25¢ per gallon	292.00
	Total	$1545.35

(f) None

Addendum to #103, page 5
H.S.Tungsten Mine
[illegible] E. Catalina Ave.,
Phoenix, Arizona

(g) 1 - Portable air compressor 75 cubic feet of free air per minute, Smith, new.
Rental per month. . . . . $ 145.00

1 - Column bar with arm and clamp, one cradle.
Rental per month. 25.00

1 - Jack hammer for drifting.
Rental per month. 35.00

1 - Water pressure tank, air hose and water hose.
Rental per month. 15.00

1 - Set of tools including shovels, picks, single and double jacks, pipe wrenches, saws, carbide lights, wrenches, and two sets drill steel.
Rental per month. 15.00

Total Rental Per Month . . . . . $ 235.00

(h) 1 - Jim Crow. . . . . $ 23.25
1 - Pipe threader 1/2" to 2". 35.10
1 - Pipe Vice 9.46
1 - Grinding wheel with carborundum for grinding tungsten carbide bits with belt. 35.00
30 - Pair splice plates and necessary bolts. 14.40
1 - Line oiler. 16.00
100 - Pounds track spikes 2½. 13.00
1 - Set 1" Hex. drill steel shanked and threaded, 1 piece 3' long, 1 piece 5' long, 1 piece 18" long. 16.05
60 - Feet of 1½" black air pipe @ $25.64 per 100'. 15.38
140 - Feet of 1" black air pipe @ 16¢ 22.40
1½" and 1" pipe fittings. 6.80
25 - Gallons jack hammer oil Kelubric @ 34¢. 8.50
2 - Sets 1" Hex. drill steel re-shanked only @ $1.15 x 6. . . . 6.90
8 - Sets 1" Hex. drill steel re-threaded only @ $1.15 x 24. . . 27.60
1000 - Blasting Caps #6... . . . . 21.75
4 - [illegible]00' rolls fuse XXX. 14.55
20 - Quarts lubricating oil for compressor @30¢. 6.00
2 - Steel muck plates 3/16" x 4' x 6', 385# 36.00
6 - 25# can miners carbide. 77.25

Total. . . . . $ 405.39

(i) Water supply for domestic and mine use, including 1 - gasoline engine driven pump, foot valve, pipe and tank ... $485.00

Trucking equipment and supplies from Phoenix to mine 525.00

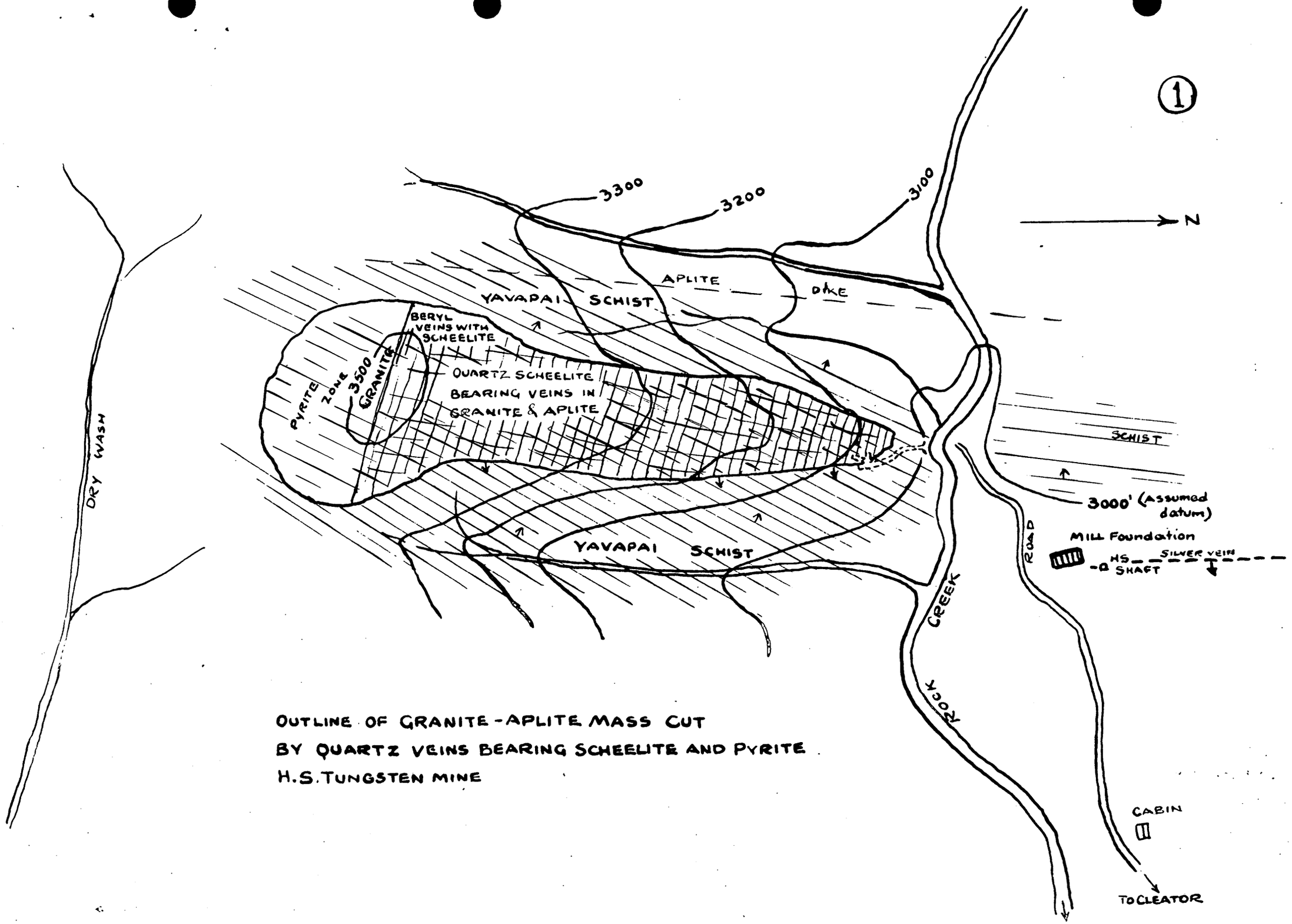
Repairs and parts for jackhammer, compressor and etc 170.00

Miscellaneous 150.00
Total .... $ 1130.00

24. Time schedule of the project:

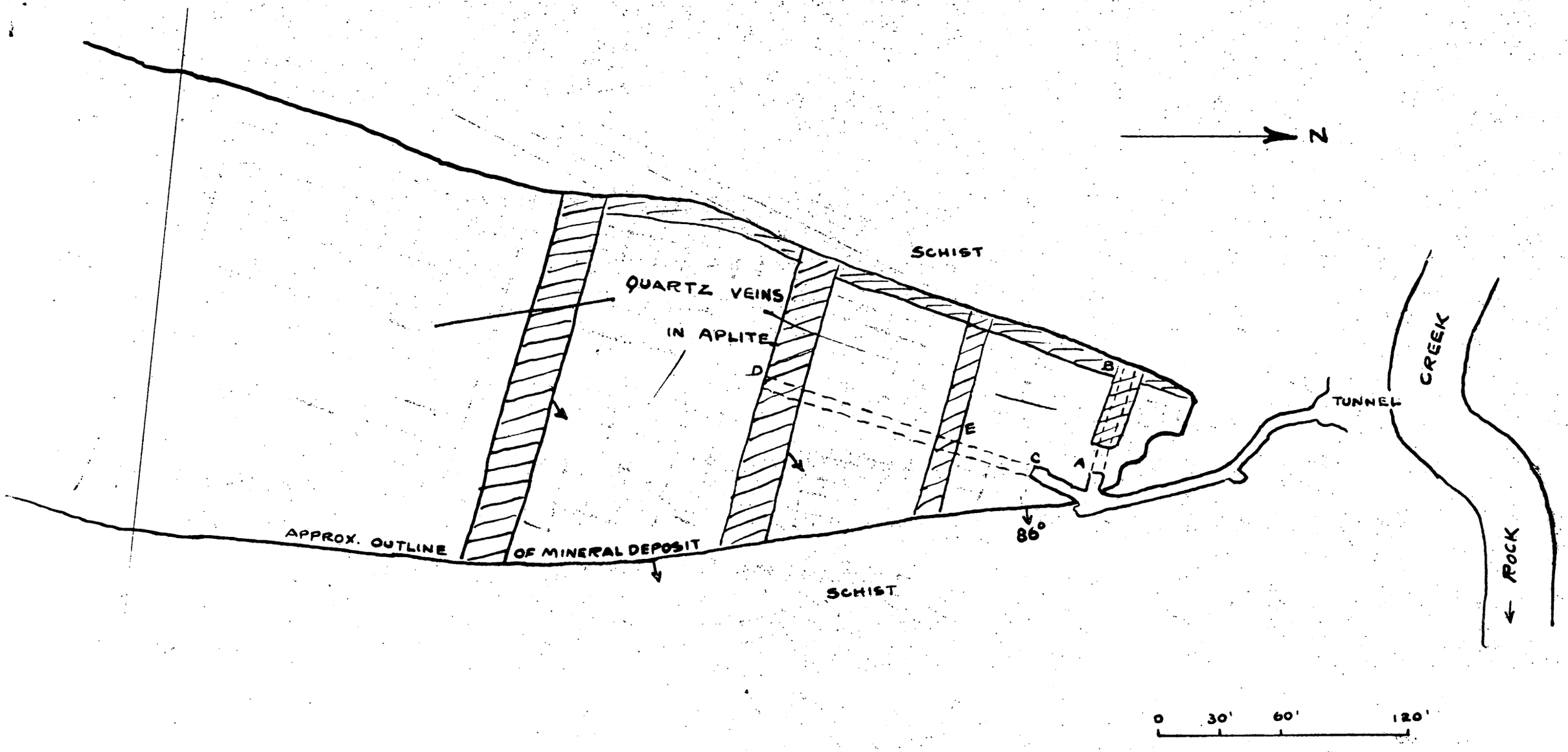
First two weeks organizing, obtaining supplies, labor etc
3rd week, cleaning out tunnel and preparing for mining operations.
15th week, complete drifts and cross cuts.
17th week, complete sampling and project work, etc.

Outlay in money:	Government share	Applicant share
(a) Labor	$2744.00	------
(b) Supervision	------	$960.00
(d) Installations	250.00	------
(e) Equipment $50 or more	1545.55	------
(g) Rental value equipment by operator, 4 months @ $235.00	------	940.00
(h) Material and supplies under $50	405.59	------
(i) Water, trucking & Misc.	1130.00	------
Total	$ 6074.74	..... $1900.00



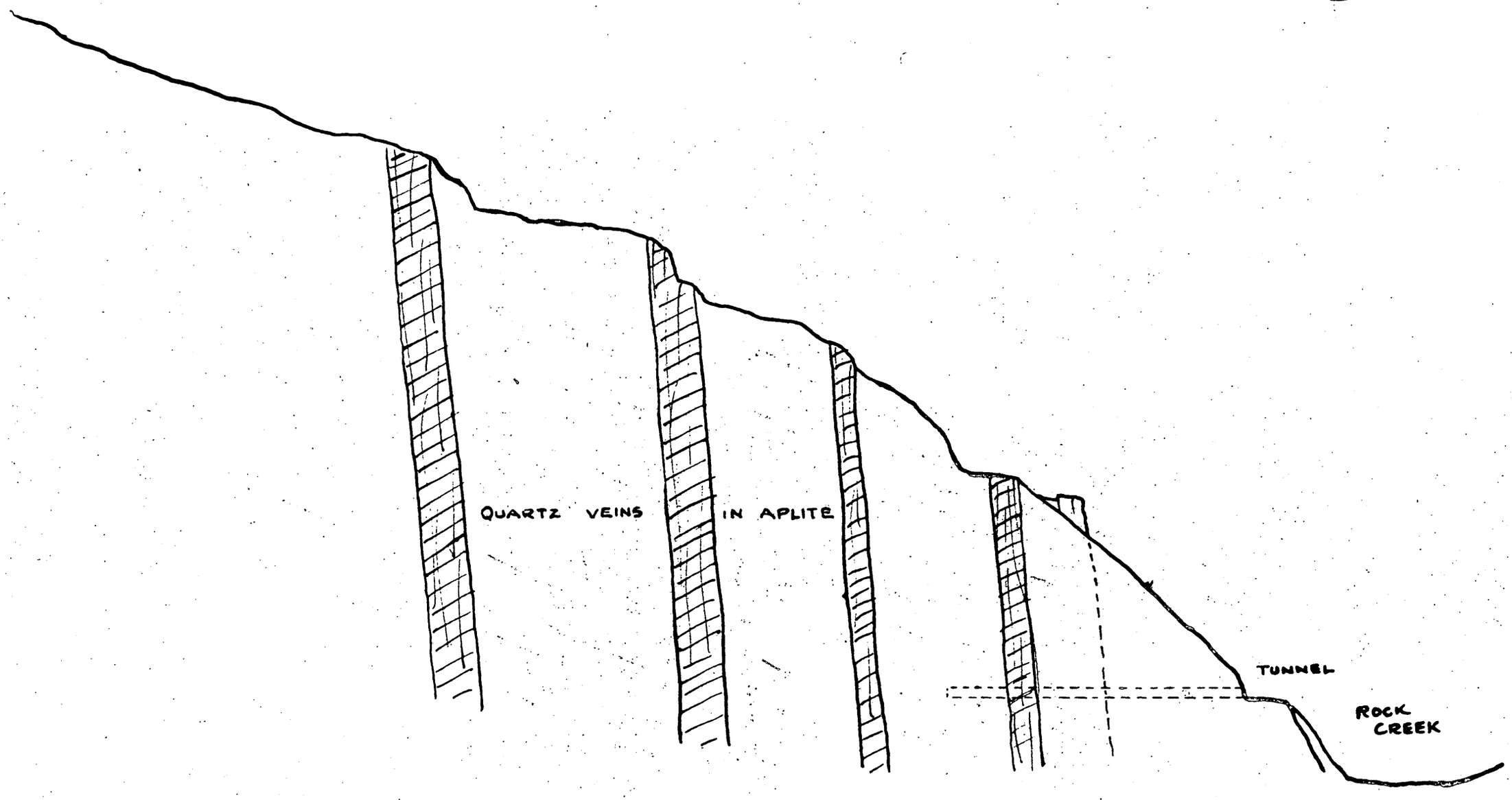
OUTLINE OF GRANITE-APLITE MASS CUT
BY QUARTZ VEINS BEARING SCHEELITE AND PYRITE
H.S. TUNGSTEN MINE

WCK 5-51



PLAN SHOWING POSSIBLE ORE CHUTES ALONG CROSS FRACTURES AND ALONG FOOT WALL OF H.S. TUNGSTEN PROSPECT

WCK 5.51



CROSS SECTION SHOWING POSSIBLE ORE CHUTES
ALONG CROSS FRACTURES LOOKING WEST.
H.S. TUNGSTEN MINE

WCK 5-5