DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMEA ~~DMA~~ Docket No. 2645

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

EXPLORATION PROJECT

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip

Copies to USBM, USGS, and Region III.

To: Code 400, Rm. 3538 Date 8-12-52

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DO NOT DETACH

CONTROLLED DOCUMENT

400

2645

FEB 1 9 1953

Mr. G. [illegible], Jr., President
United Minerals Corporation
513 Felt Building
Salt Lake City, Utah

re: Docket No. [illegible] 7645 - Tungsten
United Minerals Corporation
Bonus Shrub Tungsten Mine
Marin Gulch Claims
White Pine County, Nevada

Dear Mr. [illegible]:

Your letter of February 13, 1953, has been [illegible], and in accordance [illegible] application has been withdrawn.

[illegible] for your cooperation in the matter [illegible] brought to our attention.

Sincerely yours,

C. O. Mittendorf

Administrator

cc: Docket
Field Team, Region 3
Code 400
Adm. Read. File
M. W. Geehan, [illegible]
[illegible], [illegible]

PAHutledge/hmb
2/18/53

JAN 7 1953

Mr. George W. Snyder
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

Re: Docket No. [illegible] 2645 - Tungsten
Monte Christo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

In reviewing our files we note that your letter of September 24, 1952, by your Mr. R. J. Godbe, asked us to hold your application for exploration assistance on the above-noted property in abeyance as you were having title difficulties.

As we have heard nothing further from you concerning this application, will you please inform us whether or not you wish to proceed with the application? If not, we will withdraw it from our active file.

Sincerely yours,

George C. Selfridge

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

cc: DOCKET
ADMN. READ. FILE
FIELD TEAM, REG. 3
CODE 400
D. M. LEMMON, USGS
R. V. GEHMAN, USBM

TLChapman/ls 1-6-53

400

~~FILE COPY~~
~~Surname:~~

Guhan

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 25, 1952

Memorandum

To: George Selfridge, DMEA

From: Robert W. Geehan, Bureau of Mines

Subject: United Minerals Company, DMEA 2645
Monte Cristo Tungsten Mines, White Pine County, Nevada

Proposal: Ten diamond drill holes aggregating 3,000 feet, 400 feet of trenching, 200 feet of drifting, with a total cost of $34,500.

General: This seems to be the "Murphy" tungsten mine examined by the Bureau in 1943. The examining engineer concluded, at that time:-

"The property has not been adequately prospected and the work done is insufficient for annual assessment.

"The limited area covered by the recent preliminary examination indicates that the tactite zone is tungsten-bearing with profitable values in many places where widths of ore are of minable extent.

"The property warrants further examination and adequate sampling by the Bureau after development now being done by the owners is completed."

Recommendation: The docket should be referred to the Field Team. The estimated costs appear to be lower than average. Nothing is included for mapping or assays.

Robert W. Geehan

Enclosure
Copy to: Geehan
Ferrous Metals
Wiley

AUG 20 1952

Mr. George W. Snyder, Jr.
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

Re: Docket No. DMEA 2643 - Tungsten
Monte Cristo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

In reviewing your application for exploration assistance on the above mentioned property, we fail to find any maps showing the topographic or geologic structures of the deposit.

If you have any maps of the area covering the topography and geology, we would appreciate receiving copies of them. The maps should show the present cuts and pits on the property and show the points from which samples were taken.

Maps showing the location of the proposed diamond drill holes and adit should be presented.

We shall appreciate receiving the above mentioned data as soon as possible so that we may proceed with the processing of your application.

TLChapman'la
8/19/52

Sincerely yours,

George C. Selfridge

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

cc: Admn. Reading File
Docket
R. W. Geehan, USBM
D. H. Lamson, USGS
Field Term Reg. III
G. C. Selfridge
T. L. Chapman

IN REPLY REFER TO:
G-MD-CF

400

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

August 15, 1952

Memorandum

To: George C. Selfridge, DMEA

From: Dwight M. Lemmon, USGS

Subject: Exploration application $34,500 DMEA 2645 - Tungsten
United Minerals Corporation
518 Fell Building
Salt Lake City, Utah

Property: Cabin Gulch claims
(Monte Cristo Tungsten Deposit)
White Pine Range
White Pine County, Nevada

Comment: This is the same property as DMA 1077 - Chessher and Standifer (see my memo of May 4, 1951 for discussion). Chessher optioned the claims to Harlan H. Bradt in October 1951, and to George W. Snyder, Jr. and associates on March 24, 1952.

The new proposal involved the following:

Diamond drilling 3,000 feet at $6.50	$ 19,500
Bulldozing roads 400 hours at $12	4,800
Drifts and crosscuts 200 feet at $30	6,000
Supervision (7 months at $500)	3,500
Accounting (7 months at $100)	700
	$ 34,500

The applicant has submitted no geologic or topographic map of the deposit, and is therefore certainly not in a position to make competent plans for diamond drilling. The scheelite-bearing rocks are tightly-folded and there is no assurance that the favorable beds extend to depth. Before any project is approved, a good detailed geologic and assay map should be made of both sides of Cabin Gulch. The area to be covered is probably about 0.5 square mile. If the applicant will not make the map, then the field team should be asked to do the mapping, a chore that will take about 2 weeks for 2 geologists and an additional week for a mining engineer. Unless the map is made first, no diamond drilling should be considered.

This property has been examined to death by geologists and engineers who made one-night stands and did not stay to do a thorough job. I have been there twice, Benson and Gentry of the Bureau of Mines once each, and Dave Baker, Jay Carpenter, and H. L. Hazen have each been there once in the past year. A real mapping and sampling job is now required.

I suggest that you write the applicant to see of he has prepared any maps. If he has not, the application should be referred to the field for geologic mapping.

DMLemmon:gt

400

FILE COPY
SURNAME:

Chapman
Martin

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

BW.

FEB 19 1953

Mr. G. W. Snyder, Jr., President
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

J.C. 2/19/53

Re: Docket No. DMEA 2645 - Tungsten
United Minerals Corporation
Monte Christo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

Your letter of February 13, 1953, has been received, and in accordance with your request the above-referenced application has been withdrawn.

We wish to thank you for your interest in the Defense Minerals Program and for bringing this property to our attention.

Sincerely yours,

C. O. Mittendorf (fw)
Administrator

cc: Docket
Field Team, Region 3
Code 400
Admn. Read. File
R. W. Geehan, USBM
D. M. Lemmon, USGS

FARutledge/hhb
2/18/53

UNITED MINERALS CORPORATION

FELT BUILDING

SALT LAKE CITY 1, UTAH

February 13, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 16 1953

W. S. Martin, Acting Chief
Iron and Ferro-Alloy Division
United States Department of the Interior
Defense Minerals Exploration Administrartion

Re: Docket No. DMEA 2645- Tungsten
Monte Cristo Tungsten Mine
White Pine County, Nevada

Dear Mr. Martin;

We wish to thank you for your patience in the matter of holding our application for loan on the Monte Cristo Tungsten property.

After considerable dickering with the owners we have been unable to arrive at a realistic lease or purchase contract. Recent developments have further tended to point to the inadvisability of undertaking further exploration of this property.

United Minerals respectfully requests that you withdraw our application for a contract loan from your active file.

Thanking you for your service we remain

Sincerly Yours

UNITED MINERALS CORPORATION

by G. W. Snyder Jr.
G. W. Snyder Jr., Pres.

MCG/pd

FEB 1 0 1953

Mr. Oscar [illegible], Jr.
United [illegible] Corporation
518 [illegible] Building
Salt Lake City, Utah

Re: Docket No. [illegible] A 2045 - [illegible]ston
Monte Cristo Tungsten Mine
Cabin Creek Claims
White Pine County, Nevada

Dear Mr. [illegible]:

We have been awaiting a reply to our letter of January 7, 1953, pertaining to the status of the above-noted property.

If you desire to continue with your application for exploration and leasing, please advise us as soon as possible. If we do not hear from you within the next 30 days, we will assume that you do not desire to proceed with the application and we will withdraw it from our active files.

Your interest in the exploration program of the Defense Minerals Exploration Administration and willingness to participate therein is appreciated.

Sincerely yours,

W. T. Martin, Acting Chief
Iron and Ferro-Alloy Division

cc: Docket
Field Team, Region 3
Code 400
Admn. Read. File
R. W. Geehan, USBM
D. L. Lemmon, USGS

TLChapman/hhb

2/9/53

400

FILE COPY
SURNAME:

Chapman
Martin

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

FEB 1 0 1953

Mr. George W. Snyder, Jr.
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

Re: Docket No. DMEA 2645 - Tungsten
Monte Christo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

We have been awaiting a reply to our letter of January 7, 1953, pertaining to the status of the above-noted property.

If you desire to continue with your application for exploration assistance, please advise us as soon as possible. If we do not hear from you within the next 30 days, we will assume that you do not desire to proceed with the application and we will withdraw it from our active files.

Your interest in the Exploration Program of the Defense Minerals Exploration Administration and willingness to participate therein is appreciated.

Sincerely yours,

W. S. Martin, Acting Chief
Iron and Ferro-Alloy Division

cc: Docket
Field Team, Region 3
Code 400
Admn. Read. File
R. W. Geehan, USBM
D. M. Lemmon, USGS

TLChapman/hhb

2/9/53

FILE COPY
SURNAME:

Chapman
Selfridge

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

JAN 7 1953

Mr. George W. Snyder
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

Re: Docket No. DMEA 2645 - Tungsten
Monte Christo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

In reviewing our files we note that your letter of September 24, 1952, by your Mr. N. C. Godbe, asked us to hold your application for exploration assistance on the above-noted property in abeyance as you were having title difficulties.

As we have heard nothing further from you concerning this application, will you please inform us whether or not you wish to proceed with the application? If not, we will withdraw it from our active file.

Sincerely yours,

George C. Selfridge

ce
1/7/53

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

cc: DOCKET
ADMN. READ. FILE
FIELD TEAM, REG. 3
CODE 400
D. M. LEMMON, USGS
R. W. GEEHAN, USBM

TLChapman/ls 1-6-53

FILE COPY
SURNAME

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

DMEA 2645 United Minerals

This must be returned to Geehan.

6-160

Place Salt Lake City, Utah

Date Nov. 12, 1943

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

MANUSCRIPT FOR APPROVAL

MEMORANDUM FROM: Glenn L. Allen (Name) — District Engineer (Title)

TO: S. R. Zimmerley (Name) — Regional Engineer (Title)

Title of Manuscript: Murphy Tungsten Mine, White Pine County, Nevada - Tungsten

Authors: John M. Price

Examining Engineer: John M. Price

Problem Number:

Suggested Form: War Minerals Report

One black-lined print (5 copies) Enclosed

~~Ms. Reviewed By~~ (Signature) (Date)

Ms. O. K. (Signature of District Engineer or Division Chief)

Ms. O. K. (Signature of Regional Engineer or Chief of Service) Acting Regional Engineer

Recommended for (Publication / Presentation) (Signature) ASSISTANT DIRECTOR

APPROVED FOR (PUBLICATION / PRESENTATION) (Signature) DIRECTOR

Date

TO OFFICE OF MINERALS REPORTS

Rec'd, Office of Minerals Reports

To Secretary's Office for Approval — Approved

To Editorial Section

Edited By — Reviewed By

To — Number

Published

9502

See DMEA 2645 United Minerals.

NOV 19 1943

W.M.R. BR-7196

November 1943

WAR MINERALS REPORT *

Report of the Bureau of Mines to Secretary of the Interior, Harold L. Ickes

MURPHY TUNGSTEN MINE
White Pine County, Nevada

- Tungsten -

Summary

The Murphy tungsten mine is in the Monte Christo Mining District, White Pine County, Nevada, 52 miles airline west of Ely, Nevada.

The discovery of tungsten has been relatively recent, with a minor amount of development done. There has been no production of tungsten ore.

There has been insufficient development to permit an estimate of ore reserves. Preliminary examination of the area indicates that a large section of tactite formation is tungsten-bearing, with several showings of minable widths of profitable ore. The inaccessibility of the area and difficult transportation are serious handicaps to development of the deposit.

The property warrants further examination and adequate sampling by the Bureau after development, now being done by the owners, is completed. The information thus obtained should be incorporated in a supplement to this report.

* The War Minerals Reports of the Bureau of Mines are issued by the United States Department of the Interior to give official expression to the conclusions reached on various investigations relating to domestic minerals. These reports are based upon the field work of the Bureau of Mines and upon data made available to the Department from other sources. The primary purpose of these reports is to provide essential information to the war agencies of the United States Government and to assist owners and operators of mining properties in the production of minerals vital to the prosecution of the war.

Introduction

The Murphy tungsten mine was examined by an engineer[1/] of the Bureau of Mines September 25, 1943, at the request of A. M. Phippen of Ely, Nevada.

The mine is in the northern part of White Pine Mountains in White Pine County, Nevada. It is in sec. 16, 21, and 28, T. 16 N., R. 57 E., approximately 52 miles airline west of Ely, Nevada.

The mine is reached by road from Ely by traveling west on Highway 50 for 45 miles. From this point a desert road leads westerly a distance of 12 miles to the camp. From the camp, the old Monte Christo mine roads are traveled to different claims of the group. The roads are unimproved and passable only in dry weather.

There are 38 unpatented lode claims in the area. The northern 16 claims are owned by J. R. and D. B. Murphy of Ely, Nevada. The central area of 16 claims is held under lease by A. M. Phippen of Ely, Nevada. The remaining six claims are owned by A. M. Phippen and associates. The title to the property was acquired by purchase and location by the present operators.

History

The Monte Christo Mining District is among the earliest producing areas in the state. The discovery of high-grade silver ore resulted in the development of a number of producing mines, including the Monte Christo, after which mine the camp and district were named. The mines were intermittently operated until 1900, but the present interest in the area began in 1939 with the discovery of tungsten by the Murphy brothers.

No shipments of tungsten ore have been made.

1/ John M. Price, associate mining engineer.

Physical Features

The Murphy tungsten property is on the western slope of the White Pine Mountains and extends across the drainage of the area. The mountain range attains an altitude of 10,000 feet and is approximately 4,500 feet above the surrounding desert valleys. The contour is rough and precipitous and drainage has cut deep canyons.

Vegetation comprises pine trees on the higher elevations, with pinion and juniper trees on the foothills. Weather conditions are not unfavorable for mining. Some snow falls and frequently sub-zero weather occurs in the winter months while the summers are nearly ideal. Water is abundant during most of the year, with an ample supply from valley springs sufficient at all seasons for mining operations.

Description of the Deposit

The general formation of the district is Cambrian limestones and slates that have been intruded and uplifted by areas of monzonite and granodiorite.

The monzonite forms a dome-like area in the foothills of the northwestern part of the range. At much higher altitude on the west side of the summit of the range is a much larger area of granodiorite.

Between the two eruptive areas is a segment of limestone which has been complexly faulted and, in greater part, metamorphosed to tactite. The tactite formation extends along the axis of the range and across the drainage for 10,000 feet, attaining a maximum width of 2,000 feet.

The scheelite occurs in the tactite formation with the more enriched bodies in silicified and fissured zones of N. 10° W. strike and nearly

vertical dip.

The drainage has cut the formation at nearly right angles and to a depth of 1,000 feet in Hoppe Canyon, and this has resulted in the exposure, on the ridges and canyon walls, of the ore-bearing zones.

The development has been mostly by location cuts and shallow holes along the tactite zone. There are several holes in the exposed zone on the north side of Camp Creek where the zone is exposed for 350 feet up the steep canyon side and attains a width of 120 feet. The lampings indicated scheelite over the entire width, paying quantities appearing as silicified fissure zones from a few inches to several feet in width.

Samples taken from this zone gave the following results:

Sample Number	Percent WO_3	Description
1	0.66	Average 12 feet wide near No. 1 cut
2	0.11	Average 20 feet wide east of No. 1 cut
3	0.17	Average 20 feet wide 40 feet above No. 2 sample
4	0.12	Average 20 feet wide 100 feet below No. 1 sample
5	0.31	Average 20 feet wide 150 feet below No. 1 sample
6	0.25	Average dump from open cut 20 feet wide

These samples were taken to verify the lampings along the exposed zone.

The lampings obtained from the pinnacles on the divide south of Camp Creek were similar to the north side of the creek, but more frequent zones of better-grade ore were indicated. Numerous samples of the exposed tactite zone in the canyons of Hoppe Creek, Little Fair Creek, and Sawmill Creek gave similar results.

The tungsten values occur as scheelite, which appears as fair-sized crystals of bluish white fluorescence under an ultra-violet lamp. Some powellite is also noted.

Ore Reserves

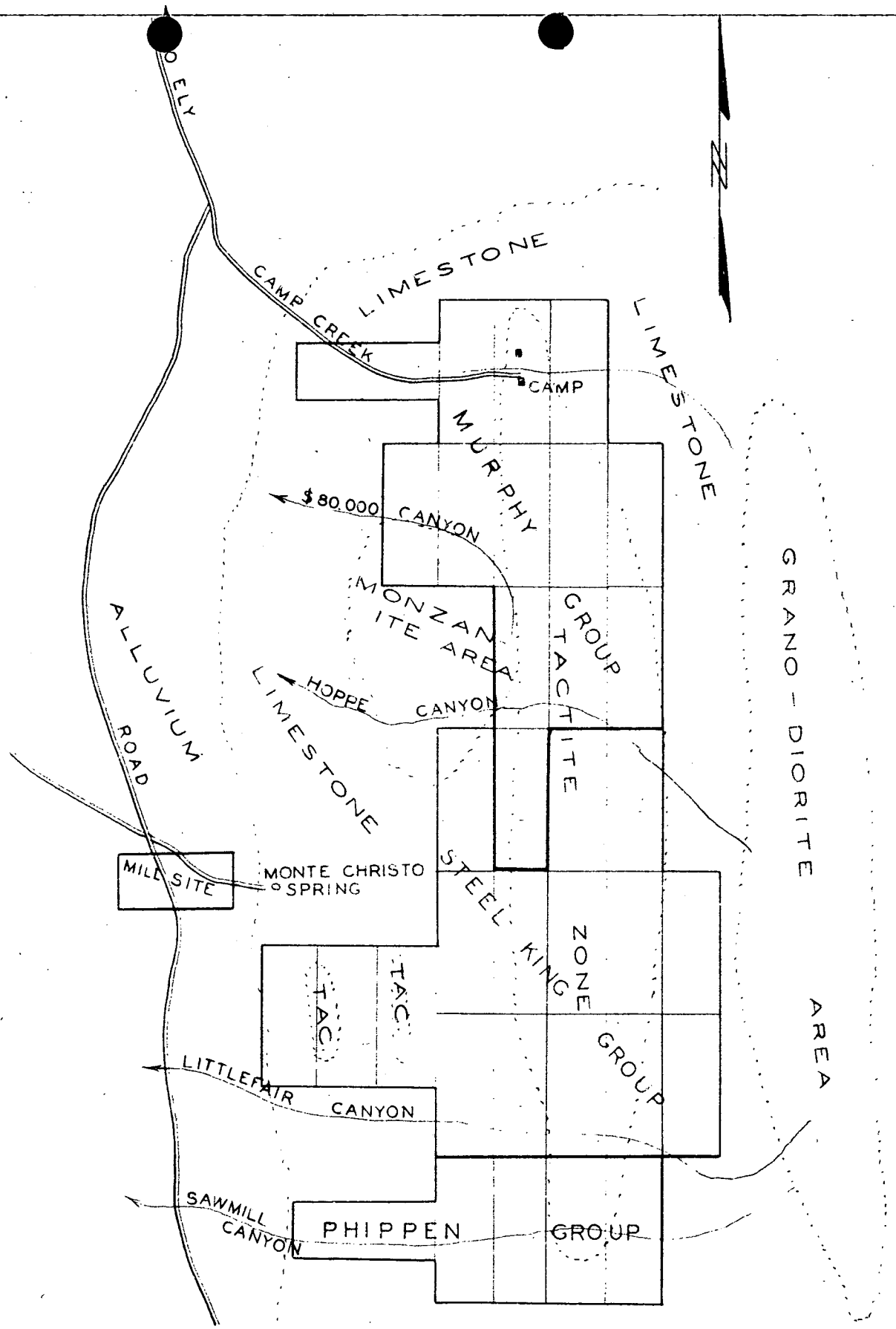
Insufficient work has been done to permit an estimate of measurable ore. Lamping of the exposures of the tactite zone in Camp Creek and the samples taken from the exposures of the other creeks which cut the zone indicates a general tungsten mineralization, with some minable widths of profitable ore.

Conclusions

The property has not been adequately prospected and the work done is insufficient for annual assessment.

The limited area covered by the recent preliminary examination indicates that the tactite zone is tungsten-bearing with profitable values in many places where widths of ore are of minable extent.

The property warrants further examination and adequate sampling by the Bureau after development now being done by the owners is completed. The information thus obtained should be incorporated in a supplement to this report.



SKETCH OF THE MONTE CHRISTO TUNGSTEN AREA

SEC'S 16, 21 & 28 T.16N., R.57E., M.D.B.&M.

WHITE PINE MINING DISTRICT

WHITE PINE COUNTY, NEVADA

0' 1500' 3000'

SCALE

10/43-1 W.M.R. NEV. 62

gcs
9/26/52

UNITED MINERALS CORPORATION

FELT BUILDING

SALT LAKE CITY 1, UTAH

Jas

September 24, 1952

DMEA 2 2 J5

AIRMAIL

Mr. O. C. Mittendorf, Regional Director
Defense Minerals Exploration Administration
U.S. Department of the Interior
18th and 'C' Streets
Washington, D. C.

Dear Mr. Mittendorf:

At the request of Mr. George W. Snyder, Jr., I am writing you concerning our application for an Exploration Loan Contract on the Monte Cristo Tungsten property near Hamilton, Nevada.

Due to title difficulties which have come to our attention we ask that you hold our application in a pending file until we can straighten out this matter.

Thanking you, we are

Very truly yours,

UNITED MINERALS CORPORATION

M. C. Godbe - Engineering Dept.

MCG3/md

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DENVER
SEP 2 5 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

August 25, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 26 1952

Memorandum

To: George Selfridge, DMEA

From: Robert W. Geehan, Bureau of Mines

Subject: United Minerals Company, DMEA 2645
Monte Cristo Tungsten Mines, White Pine County, Nevada

Proposal: Ten diamond drill holes aggregating 3,000 feet, 400 feet of trenching, 200 feet of drifting, with a total cost of $34,500.

General: This seems to be the "Murphy" tungsten mine examined by the Bureau in 1943. The examining engineer concluded, at that time:-

"The property has not been adequately prospected and the work done is insufficient for annual assessment.

"The limited area covered by the recent preliminary examination indicates that the tactite zone is tungsten-bearing with profitable values in many places where widths of ore are of minable extent.

"The property warrants further examination and adequate sampling by the Bureau after development now being done by the owners is completed."

Recommendation: The docket should be referred to the Field Team. The estimated costs appear to be lower than average. Nothing is included for mapping or assays.

Robert W. Geehan
Robert W. Geehan

Enclosure

Copy retained 400
8/27

Form MF-103
(April 1951)

U[redacted] DEPARTMENT OF THE INTER[redacted]
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. DMEA-2645

Date received 8-11-52

Participation

UNITED MINERALS CORP.
518 FELT BUILDING
SALT LAKE CITY, UTAH

Name and address of applicant

Date JULY 31, 1952

FILL IN THIS BLOCK

Date of application JULY 31, 1952

Estimated cost 34,500.00

Mineral or metal TUNGSTEN

Percentage of Government participation 75%

Location of mine HAMILTON MINING DISTRICT, WHITE PINE COUNTY, NEVADA

Date of filing MF-100 In process

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)?

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
AUG 11 1952

*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.

UNITED MINERALS CORPORATION (Name of company) By George W. Snyder Jr. (Signature of authorized official)

JULY 31, 1952 (Date) PRESIDENT (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

June 13, 1952

Mr. O. C. Mittendorf, Administrator
U. S. Department of the Interior
Defense Minerals Exploration Admin.
18th and C Streets
Washington, D. C.

Dear Mr. Mittendorf:

We submit herewith application for exploration project contract on the Monte Cristo Tungsten Mine, White Pine County, Nevada, in accordance with the Defense Production Act of 1950. Attached hereto, please find executed copy of Form MF-103. In conformance with the numbering system on Form MF-103, which form bears the date of April 1951, we submit the following information:

1. Applicant is a corporation validly existing under the laws of the State of Nevada.

2. Does not apply.

3. President and Director - George W. Snyder, Jr., 518 Felt Building, Salt Lake City 1, Utah
   V. Pres. & Dir. - Harold A. Covey, " " " "
   V. Pres. & Dir. - Mason W. Rankin, 708 Harrison Avenue, Helena, Montana
   V. Pres. & Dir. - George W. Snyder, 218 Felt Building, Salt Lake City 1, Utah
   V. Pres. & Dir. - H. C. Orton, 231 So. LaSalle St., Chicago 4, Illinois
   Secretary-Treasurer - Guy Snyder, 218 Felt Building, Salt Lake City, Utah

The above, with the exception of Mr. Guy Snyder, are the largest stockholders of the corporation.

4. Historical Background of Principal Officers and Directors:

Mr. George W. Snyder, Jr., Director and President of the Corporation, has been active in mining, oil, and airline enterprises in the Intermountain Region for the past fourteen years. He served as President and Chairman of the Board of Challenger Airlines Company and its predecessor from 1945 until 1949 and was one of the organizers of this concern. He has operated numerous mining and oil properties since this period.

Mr. Harold A. Covey, Director and Vice President of the Corporation, is an experienced Mining Engineer having been employed for six years with the Triumph Mining Company, located in Big Wood River region of Blaine County, Idaho, one of Idaho's leading lead-zinc-silver producers. He resigned from his position as Chief Engineer with them in 1945. Prior to that time, Mr. Covey served as Engineer for Snyder Mines, Inc., in Salt Lake City and at Mercer, Utah. He has

actively engaged in mining since 1937, when he operated a lease in the Alta Mining District, Utah. His other interests are as a principal stockholder and partner in the Covey Investment Company and the Covey Gas and Oil Company, respectively.

Mr. Mason W. Hankin, Director and Vice President of the Corporation, is an experienced Mining Geologist. He has actively engaged in supervising geological examinations and mine operations in Western United States since 1936, having served as Chief Geologist for the Triumph Mining Company from 1939 to 1942, when he entered the employment of the American Smelting and Refining Company as a Geologist and Engineer. He served in this capacity until February, 1949, at which time he resigned to devote closer personal attention to the active direction of affairs of this Corporation.

Mr. George H. Snyder, Director and Vice President of the Corporation, has been engaged in the Mining Industry in the Intermountain Territory for a period of thirty five years, and has successfully developed numerous major mining operations. He is an Officer and/or Director of fourteen mining companies, several of which are large-scale producers of gold-silver-lead-zinc and copper ores. His services are available to the Corporation as Consultant and Advisor.

Mr. Harvey C. Orton, Director and Vice President of the Corporation, is an experienced corporation executive. He was actively engaged in an executive capacity in the acquisition and management of public utilities, electric, gas and transportation for many years until January, 1935. Since that time he has been interested in a major way as an owner, consultant or foreign fields. His capacity with the Corporation will be chiefly in financial matters.

5. The property was acquired by assignment under lease and option from the lessee and option holder, Mr. H. B. Chessher of Reno, Nevada. The property is owned by J. R. Murphy et al of Ely, Nevada, who leased the property to Mr. Chessher who in turn assigned the lease as above.

6. The property owners advise that there are no liens or encumbrances against same.

7. A copy of the basic lease and option and assignment of said lease and option are attached hereto as exhibit A. Also attached hereto as exhibit A, please find executed copy of the Landlord's Subordination Agreement.

8. A copy of the last financial statement of the company is attached hereto as exhibit B.

9. Applicant submits that they are willing and prepared to furnish 25% of the funds needed for the project.

10. a. Property consists of 12 contiguous unpatented lode mining claims, situated in Cabin Gulch in the White Pine Mining District, White Pine County, Nevada, and which property is generally known locally as the Monte Cristo Tungsten Mine.

b. The principal site of operations will be on the Cabin Gulch, Cabin Gulch No. 1, Cabin Gulch No. 2, Cabin Gulch No. 3 and Cabin Gulch No. 4 claims. Development responses may indicate the desirability of extending the exploration operation on to the other claims. A claim map of the property is attached hereto as exhibit C.

11. The property was initially located in the name of J. M. Murphy, D. B. Murphy and Patrick Murphy, herein referred to as J. M. Murphy et al. Initial location was made about 1939. Annual assessment as required has been accomplished each year to date. The property has been locally known as Monte Cristo Tungsten Mine property for a period of several years.

12. The property is located approximately 60 miles south and west of Ely, Nevada and is reached by traveling the surfaced highway between Ely and Eureka to a point 45 miles west of Ely where a turn off is made onto an unimproved county road leading to Duckwater, Nevada. This road is followed to the south a distance of 13 miles whereafter a turn is made to the east up Cabin Gulch. The access road is plainly marked by signs. The nearest railroad is located at Ely, Nevada. Company believes that haulage will presently be by truck from the mine to any of three milling points, depending upon grade and character of ore encountered. These milling points are namely Cherry Creek, Nevada, Pioche, Nevada and Bishop, California, a distance respectively of 110 miles, 190 miles and 260 miles. All surfaced roads are passable year around. Severe mud conditions, however, prevail on the county roads during the early spring months, and stockpiling of ore will probably be necessary.

13. Adequate water for mining operations and camp supply is available the year around from the Monte Cristo spring situated approximately 2 miles to the south. The owner of the water rights on this spring has indicated his willingness to permit the use of this water for mining operations at nominal cost. In the event development responses indicate that a milling operation is advisable on the property, a supply of water estimated at from 2 to 3 hundred gallons a minute from this spring would be available to the company. Detailed questioning of local residents reveals that this water supply is permanent at all seasons. Applicant believes that the supply is adequate for all purposes herein considered. All power will be furnished by stationary diesel units. Present diesel oil cost in the vicinity is approximately 21¢ per gallon.

14. There are three small housing structures on the property which are adequate during preliminary stages of development work. There are no other usable structures, facilities or equipment on the property.

15. As indicated in paragraph 12, the ore would be shipped by truck with the following estimated total haulage cost: a. To Cherry Creek, Nevada, $5.75 per ton. b. To Pioche, Nevada, $8.25 per ton. c. To Bishop, California, $12.50 per ton.

Milling facilities at each installation vary. Detailed metallurgical tests are now being conducted to establish recovery rates and impurity content. Applicant believes that ore presently being mined and stockpiled can be shipped to any of the above milling plants, providing a grade of .6% WO_3 can be maintained. Detailed sampling of area exposed by new road construction and of all potential work faces indicate that this grade can be maintained.

Milling procedures in general at the Cherry Creek plant consists of jigging, tabling and flotation. The presently contemplated facilities at Pioche, Nevada, will consist of the same as the Cherry Creek Mill with the addition of a leaching unit. Applicant has no definite advise on the status of announced plans for the operation of the Pioche unit. Complete tungsten treatment facilities are available at the Bishop, California plant of the United States Vanadium Corporation and applicant has used their schedule throughout the economic studies.

16. A total previous development on the property has consisted of very limited pit and bulldozer cuts and applicant has only recently completed construction of a road to the site of projected mining operations. This road has exposed the ore zone in at least four places. Applicant has no knowledge of actual production from the property, but has been advised that a very small shipment of high grade ore was made during the last war.

The general area in Nevada presently includes at least three small tungsten producers and numerous properties are now undergoing exploration and development.

Attached hereto as exhibit D are the reports on the property furnished by the previous owners.

17. Preparatory work is now near completion and applicant believes that by June 15, 1952, approximately 50 tons per day of ore averaging a .6% WO_3 will be produced. Mining operations are on a contract basis at a total cost of $6.00 per ton. Net values depend upon final milling arrangements consummated. The present knowledge of the company indicated the net value of this grade of ore before mining costs or truck haul to be approximately $22.00.

18. The ore deposit occurs in a garnetized-tactite zone in the general region of a limestone-granite contact. The material is very highly silicified and occurs in a bedding dipping approximately 10 degrees to the west and with considerable folding present. Small amounts of chalcopyrite occuring in the zone are not considered to be of economic importance. The principal zone varies from eight to 40 feet in width and present exposures indicate its continuity for more than 500 feet along the strike of the mineralized bedding. Vertical exposures are not well established because of variation in width and grade. A minimum of 100 feet in depth is indicated with no apparent material change in values.

B. Attached hereto as exhibit C are all available maps and assay data.

C. Applicant presently believes that at least ten thousand tons of material expected to average approximately .6% WO_3 is now in sight.

19. The very limited amount of development thus far accomplished on the property does not reveal sufficient data to properly establish its merits. Applicant proposes the performance of the development work outlined in this application to ascertain the presence of additional reserves, to explore fully the longitudinal and vertical extensions of the ore zones and to evaluate grade and character of the ore.

20. Exploration will be conducted toward the development of substantial tungsten production. The known values occur as fine grained Sheelite crystals disseminated throughout the mineralized zone. The Scheelite contained is the only known material of economic value on the property.

21. Applicant proposes to explore the property with ten diamond drill holes aggregating three thousand feet at various locations established to delineate the vertical and lateral extensions of the principal ore body, as well as to explore the paralleling beddings exposed by the recent road work. Applicant further proposes to perform an additional four hundred feet of trenching along the lateral extensions of the ore exposures recently established. Applicant

proposes finally to drift horizontally 200 feet in the ore zone toward the north from the site of the lowest pit on the north side of Cabin Gulch. Applicant agrees that the above outlined work can be concluded within twelve months of starting date.

22. The amount of ore exposed by the limited amount of development work thus far accomplished, along with the favorable geologic conditions prevailing and the uniformity of opinions furnished by the company's and independent engineers makes it desirable for the company to undertake the herein described development project.

23. a. All work proposed will be performed on a contract basis as follows:

Three thousand feet of diamond drilling @ $6.50/ft.	$19,500.00
Four hundred hours of bulldozer trenching & road building @ $12.00/hr (Includes all compressor & roadwork costs)	4,800.00
Two hundred feet of drifting and cross cutting @ $30.00/ft. (Includes all labor & supplies)	6,000.00
Supervision (7 mo. active @ $500/mo.)	3,500.00
Accounting (7 mos. @ $100/mo.)	700.00
	$34,500.00

b. Supervision (see above)
c. None
d. None
e. None
f. All operations will be on contract basis as specified under para. (a) above
g. None
h. None
i. Included in contract costs.

24. Performance schedule will vary according to starting date. Assuming a start in July, the following schedule can be met.

	Total Cost	Diamond Drilling	Bulldozer Work	Drift & Crosscutting
July, 1952	4,400.00	400'	100 hours	--
Aug. 1952	5,500.00	500'	100 hours	50'
Sept. 1952	5,550.00	500'	100 hours	50'
Oct. 1952	5,550.00	500'	100 hours	50'
Nov. 1952	5,350.00	500'	--	50'
Dec. 1952	---	--	--	
Jan. 1953	---	--	--	
Feb. 1953	---	--	--	
Mar. 1953	---	--	--	
Apr. 1953	---	--	--	
May 1953	2,550.00	500'	--	
June 1953	2,550.00	500'	--	
TOTALS *	$34,500.00	3,000 ft.	400 hours	200 feet

* Supervision, engineering, geology and accounting included.

Respectfully submitted,

UNITED MINERALS CORPORATION

George W. Snyder Jr.

George W. Snyder, Jr., President

EXHIBIT "A"

C O P Y

LEASE AND OPTION AGREEMENT

THIS AGREEMENT, made this the 4th day of June, 1961, by and between JAMES S. MURPHY, a single man, and L. S. MURPHY, sometimes known as SEAT MURPHY, and his wife, SYLVIA S. MURPHY, the business address of each being P. O. Box 524, Ely, Nevada, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and E. D. CHESSER and JANE S. CHESSER, respectively husband and wife, residents of the State of Nevada, the business address of each being 422 Gazette Bldg., P. O. Box 889, Reno, Nevada, parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: That SELLERS, in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, to them in hand paid by BUYERS, the receipt whereof SELLERS hereby acknowledge, and in further consideration of the covenants and agreements hereinafter contained, upon the part of BUYERS to be kept and performed, do by these presents contract, covenant and agree to grant, bargain, sell, remise, release and forever quitclaim unto the BUYERS, and to their heirs, successors and assigns, for the purchase price sum of Fifty Thousand Dollars ($50,000.00), payable in manner and way hereinafter designated, all of those certain twelve (12) unpatented lode mining claims, commonly known and referred to as the Monte Cristo tungsten mine, situated on the westerly side of White Pine Mountain in Township 16 North, Range 57 East, M.D.B.M., in the White Pine Mining District, in the Westerly part of White Pine County, State of Nevada, named, located and described as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE)	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128	355
CABIN GULCH SIDELINE NO. 2 (Also called SIDELINE NO. 2)	128	356

and all of aforesaid twelve (12) unpatented lode mining claims are owned by SELLERS and are held by right of good and valid locations, and are free and clear of liens and/or incumbrances, except title is held subject to the paramount title of the United States of America.

SELLERS covenant and agree that the aforesaid twelve (12) unpatented lode mining claims are free and clear of any liens and incumbrances and adverse claims of any kind and character, and that SELLERS will promptly warrant and defend title to the said twelve (12) unpatented lode mining claims to the BUYERS against all claims and demands of any and all persons, firms and/or corporation, subject to the paramount title to said claims being held by the United States of America.

SELLERS agree that if the payments, hereinafter designated, are paid by BUYERS to SELLERS within the time or times and in the manner and way herein this agreement provides, then BUYERS, their heirs, successors or assigns are to have and to hold, all and singular, the said twelve (12) unpatented lode mining claims, together with the appurtenances and privileges incident thereto, FOREVER.

SELLERS agree that the said purchase price sum of Fifty Thousand Dollars ($50,000.00), named in the second (2nd) paragraph on Page One (1) of this agreement, shall be payable to SELLERS at the time or times, and in the manner and way as follows, to-wit:

$ 200.00 previously has been paid to SELLERS on January 1, 1951;
$2500.00 shall be paid on or before June 15, 1951; AND
$2500.00 shall be paid on or before January 1, 1953; AND
$2500.00 shall be paid on or before January 1, 1954; AND
$2500.00 shall be paid on or before January 1, 1955; AND
$ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 80 consecutive calendar months until the total purchase price sum of $50,000.00 shall have been paid to SELLERS: it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

SELLERS agree tha simultaneously with the receipt from BUYERS of the said payment of $2,500.00 due hereunder on or before June 15, 1951, SELLERS immediately will execute and deliver in escrow in the First National Bank, of Ely, Nevada, a good and sufficient mining deed conveying to BUYERS, or to their order, good and merchantable title to said twelve (12) unpatented lode mining claims; the signatures of SELLERS to said deed to be properly acknowledged before, and attested by, a Notary Public, and said deed is to embrace all of the warranties and covenants herein this agreement contained, and said Bank is to promptly deliver said deed to BUYERS, or their order, upon its receipt of the final payment due SELLERS hereunder upon said Fifty Thousand Dollar ($50,000.00) purchase price.

SELLERS agree that all royalties paid SELLERS under this agreement shall be applied as, and credited upon, the next monthly or annual payment orpayments to become due hereunder upon, and as a part of, the said Fifty Thousand Dollar ($50,000.00) purchase price. Payment of any sum due hereunder to said Bank for the account of SELLERS is the same as if said payment had been paid or made by BUYERS directly to SELLERS.

SELLERS AGREE, notwithstanding anything in this agreement to the contrary, that this agreement embraces and options to BUYERS, as a part of said Fifty Thousand Dollar ($50,000.00) purchase price, all of the right, title and interest of SELLERS in and to any real and/or personal property of any kind or description situated within a radius of one thousand feet (1000') of any of said twelve (12) unpatented lode mining claims, even though the same is not fully described herein.

IN CONSIDERATION of the terms and conditions of this agreement upon the part of SELLERS to be faithfully kep and performed, BUYERS covenant and agree as follows, to-wit:

1st. To keep said premises and every part thereof at all times free and clear of mechanics' and miners' liens or other liens, incumbrances or liabilities arising from any act of BUYERS or their agents; to settle, pay and discharge, when due, on or before the 30th of each calendar month, all indebtedness and liabilities incurred by said BUYERS prior to the expiration of the preceding calendar month for work done, services rendered or material furnished in respect of and for said premises, which would in any manner become a lien on same, and BUYERS are to permit SELLERS to post in some conspicuous place upon the said premises a notice that the interest of the SELLERS in and to said twelve (12) unpatented lode mining claims shall not be subject to any lien for services, labor material furnished upon or used in connection with said premises, said notice to be on behalf of and in the name of SELLERS, with the signatures of BUYERS also to be attached thereto if SELLERS make request therefor.

2nd. To permit BUYERS to have access at all reasonable times to any part of said twelve (12) unpatented mining claims, and to any and all workings thereupon, for the purpose of sampling, inspecting and surveying said workings and premises, until the said total purchase price shall have been paid to SELLERS; to keep and maintain at BUYERS' office in Room 422 Gazette Bldg., Reno, Nevada, full and complete records and books of account showing all ore produced and the proceeds from production, which books shall be open to inspection of SELLERS at all reasonable times between the hours of 9 A.M. to 4 P.M. o'clock of each business day until the said total purchase price has been paid to SELLERS.

3rd. To pay to SELLERS, until said Fifty Thousand Dollar ($50,000.00) purchase price is paid in full, a schedule of royalties, as hereinafter described upon all ores, concentrates and/or bullion shipped, milled and/or sold from said premises by virtue of this agreement; said royalties, when paid, to be credited upon and applied against and shall be an offset to, the next minimum monthly or annual payment or payments then to become due hereunder, and all royalty payments and minimum monthly payments and annual payments are to be a part of said Fifty Thousand Dollar ($50,000.00) purchase price, and that the rate of royalties to be paid shall be as follows, to-wit:

(a) The total of all dry tons of all ores milled, shipped and/or sold by BUYERS from said premises for each calendar month is to be established and a record in writing made thereof. The total of all monies received by BUYERS (after deducting trucking, railroad and smelter charges) for each calendar month is to be kept and a record in writing made thereof. The ratio of total tons of dry ore milled, shipped and/or sold from said premises during any particular month, to the total of all monies received, after deduction of trucking, railroad, treatment and smelter charges, for the sale of all ores concentrates and bullion from said premises during the said calendar month, shall be established as the net amount received per dry ton, and the rate of royalties to be paid by BUYERS to SELLERS shall be paid upon the net amount received, as follows, to-wit:

A royalty of 5% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average 0.5% WO_3 or less per dry ton; AND

A royalty of 6% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.5% WO_3 and not over 0.6% WO_3 per dry ton; AND

A royalty of 7% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.6% WO_3 and not over 0.7% WO_3 per dry ton; AND

A royalty of 8% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.7% WO_3 and not over 0.8% WO_3 per dry ton; AND

A royalty of 9% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.8% WO_3 and not over 0.9% WO_3 per dry ton; AND

A royalty of 10% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.9% WO_3 per dry ton.

All royalty and minimum monthly and annual payments due hereunder to SELLERS, after making the said $2,500.00 payment due on or before June 15, 1951, are to be paid to said First National Bank, of Ely, Nevada, for the account of SELLERS, and all of such payments shall be immediately paid to SELLERS by said Bank and credited by said Bank upon said Fifty Thousand Dollar ($50,000.00) purchase price, and thereupon deducted from the balance then due thereon.

4th. To instruct, upon demand of SELLERS, the mill, smelter, sampler or reduction works or mint purchasing ore, concentrates or bullion, from said premises, to pay directly to said First National Bank, of Ely, Nevada, for the account of SELLERS, all royalties herein this agreement in the preceding paragraph reserved, and the same are to be paid to SELLERS through said Bank as a part of said purchase price.

5th. To accept the benefits of the Nevada Industrial Insurance Act and pay the required monthly premiums to the proper Commission covering all employees working on said premises, or in lieu thereof to purchase similar Industrial Insurance in a recognized company acceptable under the laws of the State of Nevada.

6th. To pay all installments of personal property and real estate taxes which may at any time become finally due and payable upon the said twelve (12) unpatented lode mining claims, or upon any personal property situated thereon, as long as this agreement remains in full force and effect.

IT IS HEREBY MUTUALLY AGREED by and between SELLERS and BUYERS as follows, to-wit:

A. That SELLERS will lend every reasonable assistance to BUYERS with a view to carrying on a harmonious and mutually advantageous and profitable mining enterprise, and Buyers agree to reciprocate fully in this respect.

B. That BUYERS may, in the event this agreement becomes terminated, remove all of BUYERS' equipment, machinery, accessories, supplies or property of any kind which may have been placed by the BUYERS upon or in the said twelve (12) unpatented lode mining claims; such removal to be accomplished within six (6) months after the termination of this agreement from any cause, but if not so removed within the said six (6) months, then the same shall become and remain the property of SELLERS; however, BUYERS shall not remove wooden sets, wooden supports and/or timbers or supports of any kind from any of the workings, adits, tunnels, crosscuts, stopes, shafts, drifts, raises and/or winzes.

C. That in the event the BUYERS shall fail to make any payment on said purchase price as and when due hereunder, this agreement, at the option of SELLERS after ten (10) days from date that notice in writing in duplicate is served upon BUYERS by Registered U. S. Mail, shall become terminated and cancelled unless BUYERS within said ten days time correct the default in payment, which default is to be fully described in said notice. SELLERS must mail one copy of said notice to BUYERS at 422 Gazette Bldg., Reno, Nevada, and one copy to BUYERS at P. O. Box 889, Reno, Nevada, via Registered U. S. Mail. Should BUYERS fail to perform any of the other terms, conditions, covenants or agreements of this agreement upon BUYERS' part to be performed, SELLERS shall have the right to give BUYERS written notice in duplicate to be sent via Registered U. S. Mail, one copy to be addressed to BUYERS at 422 Gazette Bldg., Reno, Nevada, and the other copy to be addressed to BUYERS at P. O. Box 889, Reno, Nevada, or at any address hereafter designated and substituted by BUYERS in written notice served upon SELLERS at P. O. Box 524, Ely, Nevada, said notice to specifically describe wherein BUYERS are in default, and in the event BUYERS should fail to remedy or rectify such default within thirty (30) days after said notice has been served upon BUYERS by Registered U. S. Mail, BUYERS shall thereupon be in default hereunder, and the SELLERS may, at their option, immediately cancel and forfeit this agreement without further notice to or consent from BUYERS, and in the event of a cancellation and forfeiture of this agreement, all payments previously made by BUYERS to SELLERS hereunder shall be retained by SELLERS as their property and as liquidated damages, and BUYERS shall have no right, title and/or interest therein or thereto any of said previous payments.

D. That BUYERS shall do the annual assessment work for the said twelve (12) unpatented lode mining claims for each year as required by the Mining Laws

of the United States of America and the State of Nevada, except BUYERS shall not be obligated to do said work in any year in the event BUYERS should surrender this agreement on or before thirty days prior to the end (July 1st) of any year in which said work is due, and further providing said work has not been suspended by an Act of the United States Congress; that in the event said Congress does now or hereafter permit suspension of said annual assessment work by mining claim owners who file claim for exemption, SELLERS must execute and deliver to BUYERS, for the purpose of recording prior to the end (July 1st) of said year, a claim for exemption for all of said twelve (12) lode mining claims, and all of SELLERS' statutory rights to claim exemption from assessment work for each year must be applied against and for said twelve (12) lode mining claims.

E. That, notwithstanding anything in this agreement to the contrary, BUYERS may at any time, when not in default hereunder, release and quitclaim this agreement to SELLERS upon payment or tender of the consideration of Ten Dollars ($10.00), and upon tender of such release and quitclaim, and upon the payment or tender of said Ten Dollars ($10.00) consideration, this agreement shall thereupon become cancelled, inoperative, null and void and BUYERS shall thereupon be released and relieved from any and all obligations hereunder, and all previous payments received hereunder by SELLERS shall forever remain as the sole property of SELLERS and BUYERS shall have no right, title and/or interest therein or thereto.

F. That it is expressly understood and agreed by and between SELLERS and BUYERS that this agreement does amend, modify and change, as expressly stated herein, that certain agreement dated January 1, 1951, executed by J. E. Murphy and E. S. Murphy (being members of the parties of the first part herein) and H. S. Chessher (being a member of parties of the second part herein), which agreement is recorded at Pages 94 to 98 inclusive of Book 183 in the Miscellaneous Records of White Pine County, Nevada, in the office of the County Recorder of said County, and by reference the said agreement is made a part hereof with the express understanding and agreement that it is amended, modified and changed as herein this agreement expressly stated and described; otherwise, the said agreement of January 1, 1951, remains in full force and effect, and an undivided one-half interest in and to said agreement of January 1, 1951, has been duly assigned and transferred to Jane K. Chessher by H. S. Chessher.

G. That this agreement and each and every clause and covenant herein contained shall be binding upon and enforceable by the respective successor, heirs, executors, administrators and assigns of the parties hereto, and the right of assignment by either party hereto is hereby permitted and authorized. This agreement has been executed in quintuplicate and each party hereto has received a duly signed copy hereof, and the First National Bank, of Ely, Nevada, is to receive a signed copy hereof when said deed is deposited in said Bank simultaneously with the payment of said $2,500.00 due on or before June 15, 1951, in order that said Bank may fully interpret its escrow instructions, any of which may be contained and embodies in this agreement. All erasures and interlineations were made before signing.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ E. E. MURPHY /s/ JAMES E. MURPHY

/s/ SYLVIA E. MURPHY

Bert Murphy

Parties of the First Part - SELLERS

/s/ H. S. CHESSHER /s/ JANE K. CHESSHER

Parties of the Second Part - BUYERS

C O P Y

STATE OF NEVADA)
) ss
County of White Pine)

On this 7th day of June, A. D. 1951, personally appeared before me, /s/ Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES F. MURPHY, D. S. MURPHY who is also known as BERT MURPHY, and SLYVIA I. MURPHY, the wife of D. S. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.
My commission expires Aug. 6, 1951

STATE OF NEVADA)
) ss
County of Washoe)

On this 4th day of June, A. D. 1951, personally appeared before me, W. E. Sirbeck, a Notary Public in and for said County of Washoe, E. S. CHESBRER and JANE CHESBRER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. SIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada. My Commission expires December 28, 1955

COPY

Reno, Nevada
January 30, 1952

The First National Bank of Ely
Ely, Nevada

Attention of Mr. Jay E. Brinton,
President.

Gentlemen:

Please accept these amended escrow instructions as a modification of, and an amendment to, the original escrow instructions dated June 5, 1951, signed by each of the undersigned, and deposited with you.

You are hereby authorized and instructed to change said original escrow instructions, dated June 5, 1951, in manner and way and to the extent as expressly described in that amended agreement, dated January 30th, 1952, which amends the Lease and Option Agreement of June 4th, 1951, and an executed copy of sa id amended agreement of January 30th, 1952, is attached hereto and made a part hereof.

EXECUTED this the 30th day of January, 1952.

/s/ D. B. MURPHY

/s/ JAMES R. MURPHY

/s/ SLVIA E. MURPHY

/s/ H. B. CHESSHER

/s/ JANE E. CHESSHER

COPY

AMENDED AGREEMENT

THIS AMENDED AGREEMENT, made and entered into this the 30th day of January, 1952, by and between JAMES W. MURPHY, a single man, and D. B. MURPHY, sometimes known as BERT MURPHY, and his wife, SYLVIA L. MURPHY, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and H. E. CHESSNER and JANE E. CHESSNER, respectively husband and wife, residents of the State of Nevada, the parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: THAT

WHEREAS, under date of June 4th, 1951, the respective parties to this amended agreement made and entered into a lease and option agreement, a typed copy of which is attached hereto and made a part hereof; AND

WHEREAS, the respective parties to this amended agreement now desire and elect to modify and amend said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto, in manner and way and to the extent as hereinafter described;

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars ($10.00), and for other good and valuable consideration paid to SELLERS by BUYERS, receipt of all of which SELLERS hereby acknowledge, SELLERS do hereby covenant and agree as follows, to-wit:

1st. That the 10th to 17th (inclusive) lines on Page Two of said original lease and option agreement of June 4th, 1951, which now read as follow, to-wit:

> $ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 30 consecutive calendar months until the total purchase price sum of $50,000.00 shall have been paid to SELLERS; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

be and the same are hereby modified and amended to read and be as follows, to-wit:

$200.00 per month, as the minimum monthly payment, shall be paid during each calendar month for the first five (5) calendar months of the year 1952, and $800.00 per month, as the minimum monthly payment, shall be paid during each succeeding calendar month, beginning with the month of June, 1952, and continuing during each successive calendar month until the said total purchase price sum of $50,000.00 shall have been paid hereunder to SELLERS from all royalty payments, monthly payments and annual payments; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment or payments then to become due hereunder on said purchase price.

AND SELLERS do hereby acknowledge receipt of full payment by BUYERS of $600.00 for payment in full for the months of January, February and March, 1952, as being the only payments due for said three months under the preceding amendment; AND

2nd. That a duly executed copy of this amended agreement shall be delivered forthwith by BUYERS to the First National Bank of Ely, Ely, Nevada, in order that said bank may change its escrow instructions to conform to the intentions and text contained in this amended agreement, and said bank is hereby authorized and instructed to make said changes in said escrow instructions.

IT IS EXPRESSLY UNDERSTOOD AND AGREED by and between SELLERS and BUYERS that no other term, condition or text of said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto and made a part hereof, is in any manner or way, or to any extent, modified or amended except as hereinabove expressly described, and said original lease and option agreement of June 4th, 1951, is now, and shall remain, in full force and effect subject to the amendments hereinabove contained.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ D. S. MURPHY /s/ JAMES H. MURPHY

/s/ SYLVIA E. MURPHY

Parties of the First Part - SELLERS

/s/ H. S. CHESSHER /s/ JANE E. CHESSHER

Parties of the Second Part - BUYERS

STATE OF NEVADA }
} ss
County of White Pine }

On this 15th day of March, A. D. 1952, personally appeared before me, Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES H. MURPHY, D. B. MURPHY who is also known as BERT MURPHY, and SYLVIA E. MURPHY, the wife of D. B. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.

(SEAL)

STATE OF NEVADA }
} ss
County of Washoe }

On this 30th day of January, A. D. 1952, personally appeared before me, W. E. Birbeck, a Notary Public in and for said County of Washoe, H. B. CHESSHER and JANE E. CHESSHER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. BIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada
My Commission expires December 28, 1954.

(SEAL)

C O P Y

BAKER AND COMPANY
2402 East Fourth St.
Reno, Nevada

March 24, 1962

Mr. George W. Snyder, Jr.
818 Felt Building
Salt Lake City 1, Utah

Dear Mr. Snyder:

Attached hereto please find two copies of "Offer To Convey" and accompanying documents on the so-called Monte Cristo mine property, properly executed by H. S. and Jane Chessher.

Pursuant to our verbal agreement and arrangements, and for and in consideration of the sum ten ($10.00) dollars, receipt of which is hereby acknowledged and, a further consideration of the issuing and delivering to me of twenty five thousand (25,000) shares of the fully paid and non-assessable common Capital Stock of the new Company that you are organizing for the purpose of developing this property and other tungsten and manganese interests in this area. Said shares are to be delivered to me on or before April 15, 1962.

Upon your acceptance of this assignment as indicated below, you are to promptly pay to me the four hundred ($400.00) dollars which I have paid to Mr. Chessher and which is acknowledged in said "Offer to Convey" and, that you hereto assume all and such obligations as setout in this "Offer to Convey" assumed by me and included in the agreement in the appendage thereto on page 4 thereof.

I understand and approve your further assignment of these instruments.

/s/ S. GEORGE BAKER

S. George Baker, a single man.

/s/ George W. Snyder, Jr.

ACCEPTED: George W. Snyder, Jr.

/s/ CHARLES WM. SMITH

Chas. Wm Smith, Witness to S. George Baker

/s/ HAROLD A. COWAT

Witness to George W. Snyder

C O P Y

BOOK 163 PAGE 457

Reno, Nevada
March 24, 1952
File 3-22838

OFFER TO CONVEY

Mr. W. G. Baker
P. O. Box 2044
Reno, Nevada

Dear Mr. Baker.

We, the undersigned H. B. Chessher and Jane A. Chessher, husband and wife of Reno, Nevada, for ourselves and as all of the general partners of Monte Cristo Tungsten Company, a partnership, for and in consideration of the sum of ten dollars ($10.00), receipt of which is hereby acknowledged, hereby offer, for the consideration hereinafter named, to convey to you or your assignee expressly subject to the conditions recited hereinafter, all of our right, title and interest in and to the so-called Monte Cristo Tungsten Mine consisting of twelve (12) unpatented mining claims described, located and named as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128	355
CABIN GULCH SIDELINE NO. 2 (Also called SIDELINE NO. 2)	128	356

all situated in the westerly side of Pine Mountain in Township 16 North Range 57 East M.D.B.&M. in the White Pine Mining District, White Pine County, Nevada, and more fully described in two documents titled respectively Lease and Option agreement dated June 4, 1951, by and between the undersigned and James A. Murphy, D. B. Murphy and Sylvia E. Murphy, and Abstract of Title certified by E. L. Shaver on May 3, 1951, both of which documents are by this reference thereto made a part hereof, subject to the following terms and conditions, to-wit:

1. You or your assignee shall agree to keep and perform all conditions of the Lease and Option Agreement referred to as amended January 30, 1952.

2. Concurrent with the execution hereof you are to pay to us the sum of four hundred ($400.00) dollars which amount shall be paid to James A. Murphy et al to meet all payments, falling due under said Lease and Option Agreement, for the months of April and May, 1952.

3. You or your assignee shall make or cause to be made the following additional payments, totalling $50,000.00, to us, to-wit:

Mr. S. G. Baker
March 24, 1952
File 3-22538 - Page 2

A. The sum of $8,100.00 on or before August 1, 1952.
B. The sum of $1,900.00 on or before December 31, 1952.
C. The sum of $5,000.00 on or before December 31, 1953.
D. The sum of $5,000.00 on or before December 31, 1954.
E. The sum of $5,000.00 on or before December 31, 1955.
F. The sum of $5,000.00 on or before December 31, 1956.
G. The sum of $5,000.00 on or before December 31, 1957.
H. The sum of $5,000.00 on or before December 31, 1958.
I. The sum of $5,000.00 on or before December 31, 1959.
J. The sum of $5,000.00 on or before December 31, 1960.

and it is understood and agreed that an over-riding royalty shall be paid to us by you, or your assignee, equal to 5% of the net smelter, mint or ore buyer returns which shall be defined to be the gross amount received, at current market prices, from all ore sales after deducting standard transportation and standard treatment charges, and all of said royalties so received by us shall be credited as payments upon the next annual payment to become due upon said $50,000.00 option price. It is understood and agreed that the said option price of $50,000.00 to be paid to us is an additional sum to the $50,000.00 to be paid to James R. Murphy et al under the terms and conditions of said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952. If S. George Baker, or his assignee, pays to us the said $8,100.00 due hereunder on or before August 1, 1952, then we will execute and deliver to S. George Baker, or to his assignee an assignment in writing of all of our right, title and interest in and to said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, subject to the terms and conditions herein contained.

In the event of the failure of you or your assignee to make any payment due under this "Offer to Convey" agreement, or to perform any term or condition hereof, or to make any payment or to perform any covenant, term or condition contained in the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, then at any time after ten days have expired from date we post and pay for a registered letter in the United States Post Office, at Reno, Nevada, addressed to S. George Baker, P. O. Box 2044, Reno, Nevada, notifying S.George Baker of any default or delinquency in his obligations as described in said letter, then this "Offer to Convey" agreement shall be terminated and cancelled without further notice to S. George Baker or his assignee UNLESS the said S. George Baker fully and completely corrects the default or delinquency described in said registered letter within the said ten days from date the said registered letter is delivered to, and posted in, said post office. If this "Offer to Convey" agreement is terminated and cancelled in manner and way aforesaid then neither S. George Baker nor his assignee shall have any right, title or interest in, or claim against, said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952; the said twelve (12) mining claims or any interest or equity held by the undersigned in and to said Lease and Option Agreement and Twelve (12) mining claims, and in such event all previous payments made to the undersigned by S. George Baker and all expenditures made by S. George Baker upon and for said twelve (12) mining claims shall be forfeited to the undersigned as liquidated damages and for rental of said property, and neither S. George Baker nor his assignee shall have any right, title or interest therein or claim therefor.

Mr. S. George Baker
March 24, 1952
File 5-22538 - page 3

5. You agree to perform all of the annual assessment work required for the year to end July 1, 1952, for the twelve mining claims described in the said Lease and Option Agreement; this to be a firm commitment and notwithstanding any other term or condition of this option.

6. You or your assignee may be payment of all amounts due us to the date of notice of termination, cancel this agreement upon ten days written notice to us and upon that condition be relieved of all further liability or obligation either under this agreement or under the aforementioned Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, and thereafter neither you nor your assignee shall have any further right, title or interest therein.

7. We agree that we will promptly execute any subordination agreement or other document required on a standard form by any agency or agencies of the United States Government in connection with exploration loans or ore purchase contracts. This only applies to our interest and does not commit us to agree that James K. Murphy et al, under said Lease and Option Agreement will execute said agreements.

8. That the standard form of written assignment to be issued hereunder by the undersigned to you if and when you promptly pay to us the said $8100.00 payment due on or before August 1, 1952, shall contain the usual clauses protecting the assignors and also it shall contain a reversion clause providing for the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, to revert to our sole ownership if for any reason whatsoever the said assignment agreement from the undersigned to you is surrendered, cancelled or terminated.

Executed by us, the persons properly qualified so to do, this 24th day of March, 1952, at Reno, Nevada.

MONTE CRISTO TUNGSTEN COMPANY
(a partnership)

By /s/ H. B. CHESSHER
General Partner

By /s/ JANE B. CHESSHER
General Partner

/s/ H. B. CHESSHER
H. B. Chesshar

/s/ W. L. SIMMONS
Witness

/s/ W. B. BANCROFT
Witness

/s/ JANE B. CHESSHER
Jane B. Chesshar

To MONTE CRISTO TUNGSTEN COMPANY, a partnership, H. B. CHESSHER and JANE B. CHESSHER, 422 Gazette Building, Reno, Nevada

Please be informed that I hereby accept, approve, confirm and ratify all of the terms and conditions of the foregoing "Offer to Convey" agreement, and in consideration of the foregoing "Offer to Convey" as

Mr. S. George Baker
March 24, 1952
File 3-22858 - Page 4

executed by you in my favor, dated March 24th, 1952, I hereby personally agree with you, and am firmly bound and obligated to you, as follows, to-wit:

(a) To perform and do, before July 1, 1952, all of the annual assessment work and labor as required by law to be performed upon and for said twelve mining claims as described in the foregoing option; said work and labor to be promptly paid for by me personally; AND

(b) To fully and promptly comply with the mining laws of the United States of America and of the State of Nevada in the performance and doing of said annual assessment work and labor upon and for said twelve mining claims; AND

(c) To promptly execute in duplicate an affidavit of having performed and done a total of $1200.00, or more, of annual assessment work and labor upon and for said twelve mining claims when said work is completed prior to July 1, 1952; said affidavit to be prepared by you, however, I will pay for recording said affidavit in the office of the County Recorder of White Pine County, Nevada; AND

(d) To promptly pay on June 1, 1952, the $500.00 monthly payment due to James R. Murphy et al under said lease and option agreement of June 4, 1951, as amended January 30, 1952; AND

(e) To personally assume and undertake all obligations set forth hereinabove and the assignment of all or part of said option to any assignee, or the surrender of aforesaid agreement by me or my assignee, will not in any way or manner relieve or release me personally of any or all of the obligations hereinabove in this instrument undertaken and agreed to by me in the preceding four paragraphs (a), (b), (c) and (d); AND

I hereby bind myself to promptly and fully perform and keep all of aforesaid covenants and agreements before July 1, 1952.

EXECUTED this the 24th day of March, 1952, at Reno, Nevada.

/s/ S. GEORGE BAKER
(S. George Baker)
P. O. Box 2044
Reno, Nevada

Witnessed by

/s/ R. E. SERSECK
(Witness)

RSC/JR
C&CO.

PROOF OF LABOR

STATE OF NEVADA)
: ss
COUNTY OF WHITE PINE)

Before me the subscribed personally appeared, who being sworn, says: that at least One Hundred ($100.00) Dollars each or a total of Twelve Hundred ($1,200.00) Dollars worth of labor or i provements were performed or made upon 12 mining claims named as follows:

Cabin Gulch
Cabin Gulch No. 1
Cabin Gulch No. 2
Cabin Gulch No. 3
Cabin Gulch No. 4
Cabin Gulch No. 5
Cabin Gulch No. 6
Cabin Gulch No. 7
Cabin Gulch No. 8
Cabin Gulch Side Line
Cabin Gulch Side Line No. 1
Cabin Gulch Side Line No. 2

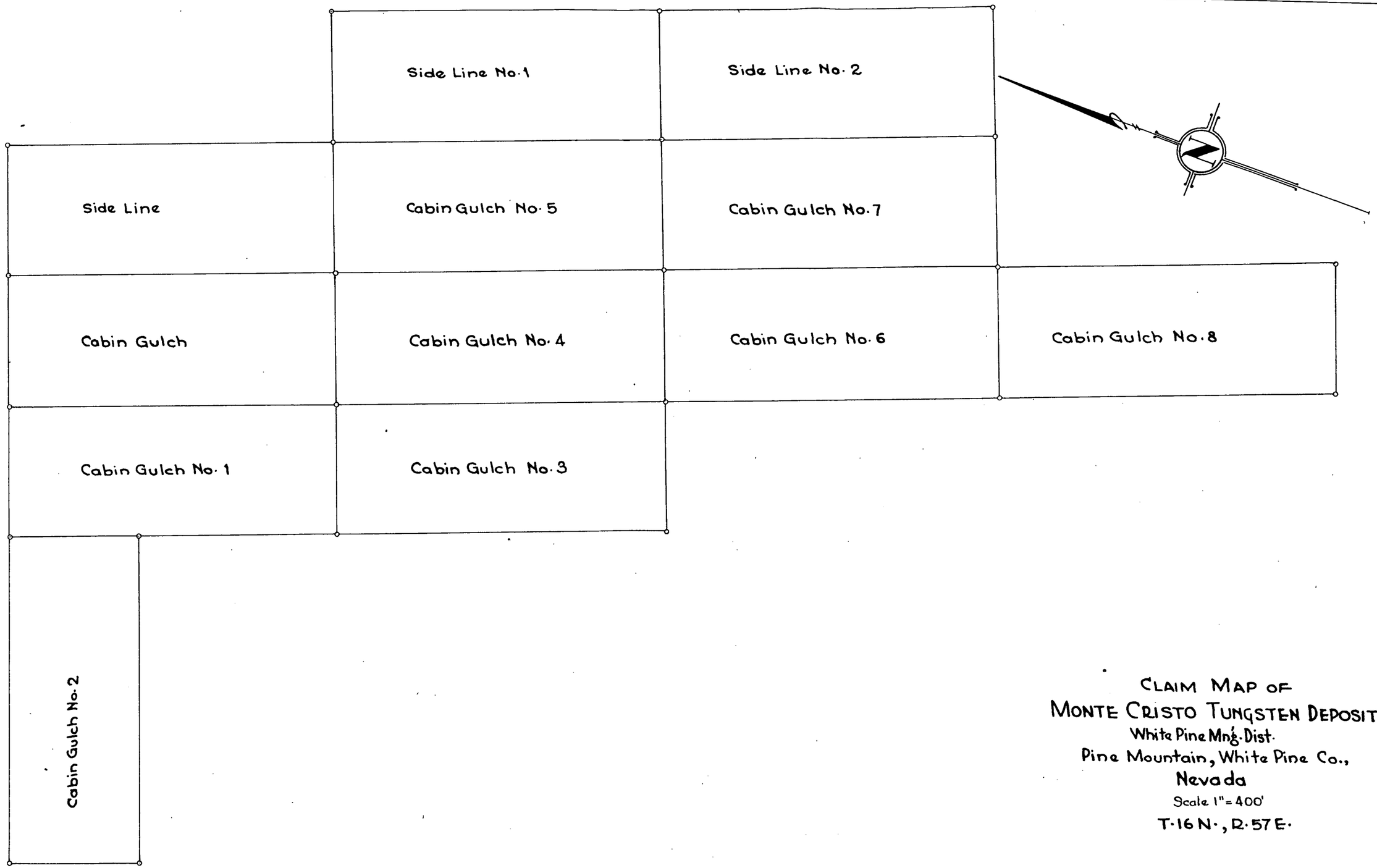
situated in the White Pine Mining District, White Pine County, State of Nevada, during the year ending June 30, 1952.

SUCH EXPENDITURE was made by or at the expense of George W. Snyder, Jr., operator, for and on behalf of the owners of the claims, James R. Murphy et. al. for the purpose of holding said claims.

George W. Snyder Jr
George W. Snyder, Jr.

Subscribed and sworn to before me this 20th day of May, 1952.

Notary Public



CLAIM MAP OF
MONTE CRISTO TUNGSTEN DEPOSIT
White Pine Mng. Dist.
Pine Mountain, White Pine Co.,
Nevada
Scale 1" = 400'
T. 16 N., R. 57 E.

EXHIBIT "B"

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

ASSETS

Current Assets			
Petty Cash			$ 1,055.62
Cash in Bank - First Security			10,158.62
Cash in Bank - Walker			27,684.22
Cash in Bank - Commercial Trust Co. - New Jersey			90,862.95
Accounts Receivable			3,548.24
Employee Advances			291.00
Total Current Assets			$ 133,600.65
Investments and Other Assets			
Securities		$ 18,000.00	
Insurance Deposits		406.10	
Total Investments and Other Assets			18,406.10
Fixed Assets - at Cost			
Property Deeds, Leases, and Options		116,785.00	
Mine Development and Promotion - Idaho		28,204.17	
Equipment - Lake Creek	$ 6,324.97		
- Rip Van Winkle	5,101.30		
- Lucky Strike	16,018.84		
- Office	1,009.54	28,454.65	
Improvements and Buildings			
Lucky Strike	12,549.93		
Lake Creek	5,391.06	17,940.99	
Total Fixed Assets			191,384.81
Deferred Expenses			
Mine Development and Exploration - Idaho		25,813.07	
- Rip Van Winkle		24,452.93	
- Lucky Strike		38,376.60	88,642.60
Intangible Assets			
Organization Expense			84,450.02
			$ 516,484.18

N/B: Statement prepared from original records without audit.

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

LIABILITIES AND NET WORTH

Current Liabilities		
Accounts Payable - Trade		$ 10,698.44
Ore Advances		15,219.75
Officers Advances		2,193.26
Wages Payable		1,946.75
Employees Withholding Tax		996.60
Payroll Taxes Payable		146.28
Accrued Interest Payable		1,158.09
Loan Payable - Santa Cruz Copper		1,500.00
Total Current Liabilities		$ 33,859.17
Non-Current Liabilities		
Production Notes Payable	$ 53,902.31	
Officers Notes Payable	19,317.67	
Total Non-Current Liabilities		73,219.98
Net Worth		
Capital Stock, Common, Authorized 3,000,000 Shares, par value 10 cents. Issued and outstanding 2,373,227 shares	237,322.70	
Paid In Surplus	172,082.33	
Total Net Worth		409,405.03
Total Liabilities and Net Worth		$516,484.18

N/B: Statement prepared from original records without audit.

Glen A. Gardner, Certified Public Accountant,
Provo, Utah

EXHIBIT "C"

R. R. CASTO
PRESIDENT

PHONE 3-7417

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY-TREASURER

P. O. BOX 1708

CRISMON & NICHOLS

229-231 SO. WEST TEMPLE ST.

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH May 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR six SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT ~~COPPER~~ Molybdenum Tri-Oxide (MoO_3)	PER CENT ~~ZINC~~	PER CENT INSOL.	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	VALUE OF ~~GOLD~~ WO3 PER TON
Monte Cristo										
6½ Ft. Cut Upper Tunnel		Trace	Trace		Trace				0.68	25.10
4 ft. Cut Above Shaft									0.46	[illegible]
4 ft. Cut East Outcrop									0.32	[illegible]
18 Inches East Outcrop									0.66	24.[illegible]
M. P. Upper Tunnel									0.61	22.60
No Tag									0.28	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 22.00

BY [signature]

R. R. CASTO
PRESIDENT

PHONE 3-7417

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY TREASURER

P. O. BOX 1708

CRISMON & NICHOLS

229-231 SO. WEST TEMPLE ST.

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH July 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR eight SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT COPPER	PER CENT ZINC	PER CENT INSOL.	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	PER CENT OZS. OF GOLD PER TON
Monte Cristo	1								0.53	
Slusher	2								0.60	
Higrade Top Bench	4								7.22	
Special	3								0.70	
Lower Bench Right Side	5								1.57	
Lower Bench Left Side	6								0.99	
Stockpile Grab	7								0.37	
Un-marked	8								0.89	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 24.00

BY

EXHIBIT "D"

DAVID D. BAKER
Consulting Mining and Metallurgical
Engineer

April 16, 1951

Mine Management;
Examination & Reports
Plant Design

Reno, Nevada
1380 Sierra Street

Mr. H. B. Chessher
Gazette Building
Reno, Nevada

Dear Sir:

Pursuant to your instructions, I visited the Monte Cristo Tungsten Deposit and spent one afternoon and evening making a reconnaissance of the surface exposures and going over the outcrops with a fluorescent lamp. No samples were taken and no attempt was made to survey or measure the orebodies. In the time available it was possible to cover only the portion of the deposit that occurs on the North side of the canyon known as Cabin Gulch. Although my inspection was brief, I can say without hesitation that the deposit is the largest occurrence of undeveloped low-grade tungsten ore that I have seen or known of in the Western United States.

The North side of Cabin Gulch is quite steep and although a great deal of the lower slope is covered with talus the upper portion is uncovered and the tactite bodies outcrop boldly. The scheelite bearing tactite occurs in this area as three bands--a central band standing almost vertically, on each side of which is another band dipping at a steep angle. The three ore bands apex at a point near the crest of the ridge and spread out toward the bottom of they canyon. The central band is roughly 25 feet in thickness and both the eastward and westward bands range from 30 to 50 feet in thickness. All of these tactite bodies can be traced for about 250 feet down the mountainside before they are obscured by the mantle of talus.

The general impression that I gained from lamping the deposit with a fluorescent lamp is that the average grade of the mineralized tactite is about 0.3% WO_3.

Assuming a total length of 750 feet for the 3 bands, an average thickness of 30 feet, and a depth of 100 feet, the possible tonnage of ore in this section of the deposit would be 225,000 tons. Since no intrusive rocks were observed in the vicinity of the tactite bodies it is possible that many hundreds of feet of metamorphosed limestone may be found lying above the batholith of quartz monsonite that uplifted the sedimentary rocks. Thus, the geologic possibilities for greatly increasing the estimated tonnage are very good, and a program of diamond drilling to explore the formations at depth should be undertaken.

At one point in the central band where it has been opened up by an open cut and a shallow pit, I would judge the grade to be 1% over a width of from 6 to 8 feet. This section should be explored since it might be of sufficient importance to support a small scale mining and milling deposit. Such a mill could serve as a pilot testing plant for working out the metallurgy of the lower grade ore.

Very truly yours,

/s/ DAVID D. BAKER

David D. Baker

DDB:jm

Reno, Nevada
February 15, 1951

Mr. H. B. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg.
P. O. Box 889
Reno, Nevada

Dear Sir:

Pursuant to your request, I have examined the surface outcroppings, two short tunnels and one shallow shaft located on the Monte Cristo scheelite tungsten mining property situated in White Pine Mining District, White Pine County, State of Nevada. The property consists of a group of 12 unpatented lode mining claims, and said group, so I am informed, has been owned by the same two owners since scheelite was first discovered thereon in 1939. The scheelite ore deposit covers a large area within the boundaries of said group of claims.

An initial examination was made by me on the afternoon and evening of January 10, 1951, for the purpose of determining the extent of the scheelite ore deposit in the area considered by the owners to be the part of the entire deposit that is the most amenable to economical mining with a power shovel. A snowstorm beginning in the evening of January 10, 1951, prevented my return to the property the following day for a further detailed study. On February 11th and 12th, 1951, I again visited the property and spent a large part of the time in lamping the scheelite exposures and in studying the geology and making measurements of the scheelite ore exposures on the surface. My report follows:

GEOLOGY

A report previously made by Jos. W. O'Brien, E.M., dated September 15th, 1941, covers the aforesaid group of 12 claims and also other claims in the district. It is a lengthy report and in part states as follows, to-wit:

> "The country rock of the White Pine mining district consists of Paleozoic sediments which have been intruded by quartz monzonite and granodiorite in the late Cretaceous or early Tertiary time."

and I agree with that statement. My examination indicates that the metamorphosed zone in which the scheelite ore deposits occur covers a very large area.

ORE DEPOSIT

The scheelite deposit on this group of claims occurs in a contact metamorphosed zone consisting principally of limestones altered to tactite by solutions accompanying the intrusion of granitic rock. There are three recognized scheelite ore zones, being the central zone, the westerly zone and the easterly zone. The central zone is approximately 140 feet in width at its most prominent exposure, and the westerly zone is over 80 feet in width at its most prominent exposure. The easterly zone is badly covered with slide rock, and the extreme easterly part forming the easterly wall of the entire mineralized zone is the only part that is exposed to view at this time.

S A M P L I N G

A total of 13 tungsten trioxide determinations were made on samples taken from the deposit, and all of the determinations were made by Union Assay Office, Inc., Salt Lake City, Utah, with the following results, to-wit:

No. 1	0.140 %
No. 2	0.075 %
No. 3	0.825 %
No. 4	0.555 %
No. 5	0.180 %
No. 6	0.090 %
No. 7	0.500 %
No. 8	0.450 %
No. 9	2.270 %
No. 10	0.670 %
No. 11	0.190 %
No. 12	0.050 %
No. 13	3.900 %

The aforesaid samples were used as patterns to make preliminary estimates of the tungsten trioxide content in the remaining parts of the mineralized zone from which no samples were taken. An ultra-violet fluorescent lamp, a very large Mineralight, was used extensively in traversing the length and width of the deposit, and the Mineralight showed that the deposit contained a uniform distribution of scheelite mineralization over a large area, the like of which I have never examined during my extensive experience in the examination and sampling of scheelite properties. By the use of the Mineralight and the aforesaid assay results, I believe I was able to arrive at a fairly accurate estimate, as hereinabove stated, of the possible gross tonnage of ore averaging 0.25% to 0.50% WO_3 in this deposit.

M I N E R A L I Z A T I O N

In my examination of this deposit, it was observed that a very small amount of powellite and iron pyrite were contained in the scheelite ore. The scheelite crystals appear to range in size from 1/32" to 1/4" and were well disseminated throughout the tactite rock. The scheelite crystals appear to be firm and I do not anticipate too much difficulty in making a high grade concentrate by gravity concentration when a mill is made available for processing the scheelite ore from this property. There is a small amount of garnet in the ore, and the molybdenum content does not appear excessive. A representative sample of high grade ore from this property was selected and sent to Union Assay Office, Inc., Salt Lake City, Utah, for tungsten trioxide and molybdenum assays, and the determinations were as follows, to-wit:

3.900 % WO_3
0.062 % Mo

From the said determinations it is observed that the ratio of tungsten trioxide (WO_3) to molybdenum (Mo) is around 62 to 1. This indicates that a ton of 6 % WO_3 concentrates should contain not more than 1% Mo if said ratio is maintained throughout the deposit, and I have no reason to believe that such ratio will not occur.

TONNAGE AND VALUES

My examinations revealed that a very definite mineralized zone extends for a length of approximately 500 feet by 400 feet in width with adepth of at least 150 feet. It is my belief that this particular zone will produce by power shovel operation in open pit between 500,000 and 1,000,000 tons of scheelite ore containing between 0.25% and 0.50% WO_3 per ton. In making said tonnage estimate I have not given consideration to, or included therein, the probably tonnage of commercial scheelite ore in the areas of extension, both north and south, of this deposit. I have not stressed in this report the importance of the enriched lenses of scheelite ore, assaying 0.75% WO_3 or more, which occur at several places in the deposit which are amenable to underground mining methods. It is my belief that the deposit is topographically suited for power shovel operation in open pit and if the minimum grade of ore to be mined by power shovel in open pit is to be kept above 0.25% WO_3 then the enriched lenses will be needed to maintain a mill head assaying in excess of said minimum. Therefore, I do not recommend the exclusive mining of the high grade ores averaging 0.75% WO_3 or better and thereby spoiling such an excellent open pit operation.

DEVELOPMENT

It is my opinion that before any large scale development campaign is undertaken, that the deposit should be carefully surveyed and mapped. The mapping should indicate the large zones that are mill ore. The zones too low in value for milling should be properly marked in order that the pit operator will be able to mine selectively with power shovel, sending to waste dump the rock broken which will be below the minimum grade established for milling.

I agree with your proposed plan to construct a road with an upgrade of not more than 12½% to the bottom of the deposit as exposed on surface and thence a switch-back road of same grade from bottom to top of the deposit. The open cuts representing the roadway will expose at several horizons appreciable widths of the various zones of enrichment in the deposit as exposed on the surface but now covered with slide rock. In addition, the roadway will make almost any part of the deposit accessible. The slope of the hillside is approximately 30 degrees. Adits into the deposit, and diamond drill holes, will be easily driven from the roadway. Obviously, a deposit of the magnitude evidenced by the surface exposures of this deposit will require several thousand feet of adits, crosscuts and diamond drill holes in order to fully explore and prove or disprove the tonnage and grade of ore estimated in this report.

CONCLUSION

I believe that this deposit is worthy of the amount of development work recommended in this report and that such development work will prepare the deposit for subsequent large scale operations in open pit by power shovel methods. All recommendations made in this report are based upon the present price of tungsten trioxide created by the National need for this strategic mineral for defense purposes. My estimate of 500,000 to 1,000,000 tons of ore averaging 0.25% to 0.50% WO_3 is a very conservative one, and there is an excellent chance of developing several times this amount of ore when northerly and southerly extensions of this deposit are explored.

During World War II, I was employed by the Reconstruction Finance Corporation and Metals Reserve Company as Supervising Engineer, and during said time I purchased approximately 160,000 tons of tungsten ore and examined and visited many tungsten properties. I am convinced that the Monte Cristo tungsten deposit, as above described, is one of the largest known potential open pit tungsten mines in the State of Nevada.

Respectfully submitted,

/s/ Glenn G. Gentry

Glenn G. Gentry
Mining Engineer
P. O. Box 2618
Reno, Nevada

C
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RECONNAISSANCE REPORT

ON THE

MONTE CRISTO TUNGSTEN DEPOSIT

LOCATION:

The Monte Cristo Tungsten Deposit lies on the west slope of White Pine Mountain (formerly designated by the G.L.O., Pegonip Ridge), in the White Pine Range, White Pine Mining District, White Pine County, in east central Nevada, and with respect to the G.L.O. survey occurs chiefly in Sections 16, 21 and 28, Township 16 North, Range 57 East, M.D.B. & M.

It is approximately 52 miles by airline and 62 miles by road, west of Ely, the county seat and the center of an important mineral bearing area which, among other things, contains Nevada's most important copper mining activities. The area is served by U. S. Highways 6, 50 and 93 and by the Nevada Northern Railway, a feeder line which leaves the S.P.R.R. at Cobre, 140 miles to the north. To reach the Monte Cristo Tungsten Deposit from Ely, U. S. Highway 50 is traveled for 45 miles in a westerly direction, and from this point fair desert roads of generally easy grades extend into the Monte Cristo section which lies about 15 miles south of U. S. Highway 50. From the main desert road short roads extend into the canyons which dissect the deposit thus making large portions of it fairly accessible to motor vehicles.

PROPERTY:

The known portions of the deposit are covered by 34 contiguous unpatented lode mining claims of approximately 20 acres each which are owned and held as two contiguous groups of 16 and 18 claims respectively. Both of these properties, singly or collectively, are now available to prospective operators.

CLIMATE:

The climate is typical of the high altitudes of eastern Nevada, short pleasant summers followed by a brief fall season with the winter snow storms sometimes arriving as early as the middle of November. The winters are generally severe and the ground is covered with snow for at least four months of each year. The annual precipitation, chiefly snow, seldom exceeds 15 inches. The heaviest rain fall occurs during mid-summer and early fall. Sub-freezing temperature is the rule during the winter months. Occasional heavy snows during these months may be expected to interfere to some extent with mining operations.

VEGETATION:

Nearly fifty percent of the surface of the deposit consists of bare rock outcroppings and talus covered slopes and is barren of any vegetation. But in other parts of the deposit and in adjacent areas there is a considerable growth of stunted pinon pine, juniper and mountain mahogany trees with here and there small open grassy areas and occasionally small thickets of brush. On the lower slopes and at the base of White Pine Mountain desert sage and scattered juniper trees are the principal vegetable growths. The timber growth is chiefly valuable for domestic uses but some of it is also suitable for light mining operations.

ELEVATIONS:

The elevations at the deposit range from a minimum of around 72000 feet near the north end to nearly 8000 feet at the south end. The maximum elevation of 9015 is at a point on the ridge which divides Hoppe and Little fair canyons. The mean or average elevation of the deposit is approximately 8000 feet.

TOPOGRAPHY:

The surface of the deposit and its immediate vicinity is extremely rugged in character and consists chiefly of a series of short steep westerly trending canyons which head high up on the western slope of White Pine Mountain and drain into Newark Valley on the west.

The sides of the canyons are generally steep and in places are characterized by the presence of small bluff-like outcroppings which are surrounded by talus covered slopes which generally culminate in rocky bluffs forming the narrow crests of the ridges lying between the canyons. The canyons range from 500 to over 1600 feet in depth and their slopes will often exceed 45°. Their floors have, in some instances, grades in excess of 800 feet to the mile.

WATER:

No water flows in any of the canyons excepting during a period of heavy rains. Two perennial springs occur in the immediate vicinity of the deposit. One of these, lying above and about one quarter mile east of the deposit in Hoppe Canyon at an elevation of 9100 feet is reported to have a flow of 15 gallons per minute. The other spring, known as the Monte Cristo Spring, lies at the base of White Pine Mountain about one quarter mile west of the deposit at an elevation of 7500 feet. It is reported to have an average flow of over 500 gallons per minute.

Other possible sources of water supply exist at Green's Ranch and in Newark Valley. At Green's Ranch, which is about six miles south of the deposit, there are several large springs, the water from one of which is reported to exceed in volume that of Monte Cristo Spring. The deposit lies near the southern end of Newark Valley which covers several hundred square miles and is the natural drainage basin of several mountain ranges. Its water table lies to the surface and there is every reason to believe that Newark Valley can be expected to be an unfailing source of water supply, when needed, for mining and milling operations of any magnitude.

HISTORY:

The western or Monte Cristo section of the White Pine Mining district, although less than six miles southwest of Hamilton section, has heretofore received little attention from geologists and mining men who have covered the Hamilton and adjoining areas. These areas were noted for their rich silver and silver-lead mines during the period 1867-1887 with a reported production of over $20,000,000.00 and during this period the prospecting of these areas must have been intense. But for some reason, possibly because of a difference in the rock formations, the Monte Cristo section was overlooked. Apparently the only exception to this was the mining operations carried on near the head of a gulch near Monte Cristo and which operations are reported to have produced $80,000.00 in gold from comparatively shallow workings in a quartz vein. The gulch referred to is now known as $80,000.00 Gulch.

In 1875-1876 a small matte - smelter was erected near Monte Cristo Spring to treat the ores of the Shermantown section which lies about six miles to the southeast of Monte Cristo. This smelter apparently never operated as is indicated by the condition of the flues and the complete absence of slag in the vicinity.

There is a dearth of published geological data on the Monte Cristo section. As far as is known to the writer none of the geologic papers listed in the bibliography of the Hamilton district have mentioned the Monte Cristo section. A brief mention of a contact-metamorphic zone at Monte Cristo is made by Francis Church Lincoln in "Mining Districts and Mineral Resources of Nevada", page 258.

The Monte Cristo Tungsten Deposit was discovered in June, 1939, and by the end of 1939, 34 lode mining claims covering all visible portions of the deposit had been located. Shortly after its discovery the writer made several visits to the deposit with a view of determining its economic possibilities. Later through the efforts of the writer the Goldfield Consolidated Mining Company entered the district and made, under the direction of Mr. Herbert H. Witt, their chief geologist, a partial examination of the deposit. This consisted of aerial surveying and mapping followed by the extensive use of fluorescent lights of surface outcroppings and this in turn followed by the cutting of numerous samples which were later tested for their economic minerals. In addition to the scheelite which was sought for mineral the tests revealed the presence of considerable powellite in the ore. The presence of this mineral in the deposit had hitherto been unsuspected, and although the tests apparently revealed the presence of scheelite in satisfactory quantities, Mr. Witt, due to the presence of the powellite, became fearful of an involved metallurgical problem in the treatment of the ore and abandoned all further investigation of the deposit.

At that time no process that would successfully separate powellite from scheelite existed, but since then a process has been developed and is now in successful use in the treatment of a similar ore being mined near Bishop, Calif.

GEOLOGY:

The country rock of the White Pine Mining District consists of Paleozoic sediments which have been intruded by quartz-monzonite and granodiorite in late Cretaceous or early Tertiary time. According to Lorch a geologic section of the White Pine Mining District comprises over 15,000 feet of Paleozoic rocks made up as follows:- Over 1,000 feet of Cambrian limestones and slates; 7,000 feet of Ordovician sediments, including Upper and Lower Pogonip limestones; Eureka Quartzite and Lone Mountain limestones; 2,000 feet of limestone of Devonian age; and 5,400 feet of Carboniferous sediments, including shale, sandstone and limestone.

Large areas of the White Pine Range are underlined by a batholithic mass of quartz-monzonite or its differentiates. In the Monte Cristo section the batholith is represented by a small stock of cupola composed of a quartzose granitoid rock which is undoubtedly a differentiate of the monzonite and which occurs as a small nearly conical peak, several hundred feet high, at the western base of White Pine Mountain. The peak borders a large contact metamorphic zone on the west and its position suggests that it is the termination of a spur or finger from the main batholith which lies at some distance to the southeast.

Although unexposed in other portions of the section the finger appears to trend and possibly dip to the southeast as is indicated by the degree of metamorphism of the overlying rocks and the tilted position of their strata which in some places appear as a low anticline dipping about 18° to the southeast.

The intrusion of the monzonite in the Monte Cristo area uplifted and metamorphosed the overlying sediments and those at the contact with the small stock forming a contact metamorphic zone of considerable extent which, owing to limited marginal exposures, makes the defining of its surficial area somewhat difficult. But the zone is roughly pear-shape in plan with its small end to the north. It has a visible strike length of over 10,000 feet with its long axis striking NW-SE. At its smaller or northern end it is approximately 125 feet wide. From this point its width progressively increases towards the south until at a point about 2,500 feet from its southern end it reaches a width of over 2,600 feet. From this point to its southern end it narrows and is finally obscured by the overlay limestone.

In but few places is the border or margin of the metamorphic zone clearly defined. Much of it is obscured by vegetation or by a mantle of talus. Where exposed, excepting in a few places, there is no sharp division between the metamorphic and sedimentary rocks, but rather a gradual transition from one to the other. But at its northern end the zone appears to split into pointed fingers that pass into or under the limestone.

Still on the west side of White Pine Mountain, to the east and northeast of the contact metamorphic zone, but separated from it by a wide belt of Pogonip limestone, is a large intrusion of granodiorite. With the exception of the stock on its western border there are no visible intrusive rocks within close proximity to the contact metamorphic zone. But on its eastern border considerable quartz-monzonite porphyry float occurs, indicating the nearby presence of dikes or sills of this rock.

PETROLOGY:

The surface of the contact zone can roughly be divided into areas according to the color of its rocks. Beginning near its northern end and coinciding with its long axis a strong belt of garnetized rock of irregular width extends almost to its southern end. This belt ranges in width from a few feet to over 500 feet and in color from a light rusty color to a rich dark brown, according to the degree of garnetization. On either side of the garnet belt but still within the borders of the contact zone the rocks range in color from a light gray to a deep greenish gray.

As a rule the garnet belt stands above the surrounding areas in bold relief, usually as blocky bluff-like masses with talus covered bases. The rocks are strongly jointed by two systems of joint planes which strike at near right angles to each other. And in the best developed of these systems the joint planes coincide with the long axis of the contact zone and have nearly vertical dip.

Excepting where completely garnetized the rocks of this belt consist chiefly of garnet, quartz, calcite and greenish mineral resembling chlorite with scheelite apparently the only ore mineral.

FAULTING:

Several faults in the contact zone were observed. None of these were given a close study by the writer as they have apparently had little influence on the formation of the ore deposit within the contact zone. The principal faults are pre-mineral and their fissures are generally occupied by quartz veins of little economic value. Minor folding or contorting with some slight over-trusting of the limestone strata occurs on a portion of the eastern border of the contact zone.

ORE DEPOSIT:

EXTENT: There is a strong possibility that the entire visible contact metamorphic zone may be an ore deposit. This belief is based on the results obtained from sampling and other investigations of various portions of the zone. These investigations, though far from covering in detail all portions of the zone, revealed the presence of scheelite and powellite over large areas. Probably a thoroughly systematic sampling would reveal other areas that were sub-commercial or barren. A systematic sampling of the entire zone is beyond the means of property owners. Over 200 samples cut by the claim owners and possibly that many more cut by the Goldfield Consolidated Mining Company together with the widespread use of fluorescent lights have failed to reveal any large portion of the contact zone that was barren of scheelite and/or powellite.

ORE MINERALS: The ore mineralization or enrichment, as in most contact-metamorphic deposits where little or no secondary concentration has taken place, is erratic, and while dissemination of the ore minerals in general, local concentrations appear to be the rule. This was indicated by the use of fluorescent light rather than by sampling. Through this method the enrichment was frequently shown to occur in strong zones of varying width and strike length.

Within these zones there is generally considerable uniformity in the distribution of the ore minerals, but occasionally the enrichment also appears as highly concentrated parallel streaks or narrow belts within the zones. Some of these belts are up to four feet in width.

Towards the northern end of the deposit in an area of good exposures an enrichment zone over 100 feet in width occurs. Sampling of this zone has revealed a WO_3 content of over 1% for the zone with one belt near the middle of the zone running from 3% to 8% WO_3.

It is noticeable that in these zones of enrichment quartz is the predominant mineral and occurs chiefly as granular quartz; in seams or veinlets or, in irregular masses. The scheelite appears to be associated with the quartz and the higher the quartz content in the ore the greater the scheelite content.

Scheelite (calcium tungstate), contains 80.6% tungsten trioxide and 19.4% lime. It occurs in the ore as individual crystals, crystalline aggregates, and in small granular masses. Its color is a pale, greyish white to nearly transparent, closely resembling the quartz in this respect. The scheelite crystals are generally quite small in size ranging from less than 1/16 inch to slightly over 1/8 inch in diameter. Their size and color make them practically indistinguishable, without the aid of fluorescent light, from the granular quartz in crystals.

Powellite (calcium molybdate) contains when pure, according to its formula $Ca\ Mo\ O_4$, 47.9% molybdenum and 52.1% lime. But powellite from many sources has been found to carry from 10% to 12% tungsten trioxide which is believed by

many authorities to be present as scheelite and in a mechanical mixture rather than a chemical compound.

The powellite appears to be an oxidation product of the primary sulphide molybdenite and it occurs in the ore of the deposit as a grayish white powdery mineral occupying minute seams or as a coating of the scheelite. This mineral cannot be distinguished in the ore by the unaided eye but can easily be detected in the ore concentrates through the use of fluorescent light or by analysis.

The Monte Cristo contact metamorphic zone consists chiefly of limestones altered to tactite by solutions accompanying the intrusion of a granitic rock. The scheelite-powellite deposits within the zone are of the replacement type, yet, are apparently singularly free of the undesirable mineral elements ordinarily present in minerals of the contact-metamorphic deposits. The ore, in consequence, does not contain serious amounts of copper or iron pyrites. No phosphorous mineral is known to be present, and molybdenum occurs in the powellite only. Some manganese oxides are found in association with the few quartz veins occuring within the zone.

SAMPLING: The deposit has not been systematically sampled. This task is beyond the means of the present owners who have to date cut about 200 samples in various parts of the deposit, chiefly with a view to determining the extent of the ore mineralization. And, as before mentioned, the Goldfield Consolidated Mining Company cut a considerable number of samples over a large portion of the deposit. As far as is known to the writer, few if any of these samples were barren of scheelite or powellite.

To date the tests of the samples taken have revealed their WO_3 content to be from .2% to over 6%, with an average of .6% for all of the samples. These figures do not include the WO_3 content of the powellite. This mineral occurs in varying amounts and generally exceeds the scheelite in the ore in the ratio of at least 2 to 1.

The sampling, although of a reconnaissance nature only, has indicated a wide spread, though erratic, distribution of the scheelite throughout the contact metamorphic zone and leads to the belief in the possibility of the existence of a huge low grade commercial ore deposit embracing most if not all of the zone. But the writer is more inclined to the belief that a thorough investigation of the deposit would result in the discovery of certain large areas bearing ores of a grade much higher than the average indicated for the whole contact zone. In mining these areas, selective mining would, in a sense, be employed.

MASS OR VOLUME OF THE ORE DEPOSIT: Until it is definitely determined by a thorough sampling and by other investigations such as core drilling or exploratory mining operations the mass or volume of the commercial ore body or bodies lying within the contact metamorphic zone cannot even be estimated, but on the assumption that the entire zone constitutes a workable low grade ore deposit its mass or volume is indicated by the following calculations:- A base line established at the lowest point in the deepest canyon dissecting the contact metamorphic zone and coinciding with the long axis of the zone has a length of over 10,000 feet. The average width of the zone exceeds 1,000 feet and the average vertical depth from the surface to the base line exceeds 600 feet. This presents a deeply serrated figure from which is deducted two-thirds of the mass of a regular solid of similar dimensions, giving a rock mass over 166,000,000 tons above the base line. The ore mineralization extends to an unknown depth below the base line but until this horizon is investigated no estimate of volume can be made.

In the above tonnage estimates only the rock mass within the tactitic area of the contact metamorphic zone was considered. The enclosing zone which at best is poorly defined and is thought to be barren was not included. The dimensions given for the above tonnage estimates were based on the sampling elsewhere mentioned in this report and which indicates a general though erratic scheelite enrichment within the area. Whether or not the entire rock mass is similarly enriched remains to be seen. In this connection one interesting fact is offered. Sampling the rocks exposed in the bottoms of the canyons has revealed no apparent change in the grade of enrichment between them and the rocks of the tops of the highest ridges.

Although as yet unproven, there is a bare possibility that the entire rock mass referred to constitutes an ore deposit of commercial grade, and, that, although possible, the writer believes this to be unlikely and holds to the belief previously expressed that a thorough investigation of the deposit is more likely to reveal it as consisting of a number of unconnected and erratically distributed deposits, some of which may be of large volume, surrounded by areas carrying ore of sub-commercial grade.

PLANS AND COSTS OF INVESTIGATION: It is advisory to divide this work into two stages with the execution of the second stage contingent on the results obtained from the first stage of the investigation. The preliminary or first stage to consist of the usual checking of claim lines, titles, physical conditions, etc., followed by a careful examination of the surface with fluorescent lights to determine the character, extent and grade of the scheelite mineralization; the richer zones to be indicated for later sampling. This to be followed by the sampling and assaying of the ore of these zones and the results obtained plotted on a sample map or chart. If the results obtained from this sampling were satisfactory then stage No. Two would naturally follow. The cost of the first stage of the investigation would range between $3,000.00 and $5,000.00 and would consume a period of about ninety days time.

The Second Stage of the investigation would cover the sampling of other portions of the deposit as indicated by the fluorescent light. Areas showing satisfactory results would then be subjected to sub-surface exploration by core drilling, tunneling, corscutting of shaft sinking as deemed expedient, followed by a thorough sampling of all exposed faces.

The cost of this stage of the investigation would approximate $100,000.00 and would consume approximately one year's time. Not all of the contact metamorphic zone could be investigated as outlined for the above amount. The subsurface investigation would naturally be confined to the most favorable areas and areas with unfavorable surface showings would largely be eliminated from this class of investigation. The writer believes that well within the cost and time limits as set forth several commercial ore bodies large enough to warrant the initiation of plans for extensive mining and milling operations would be delineated.

WORKING METHODS AND COSTS: A large portion of the deposit is ideally situated for cheap, large scale mining operations, using open pit or quarrying mining methods. If necessary, mining operations could be carried on simultaneously in all of the five canyons that that dissect the contact metamorphic zone. Short down grade hauls from these canyons to a mill centrally located at Monte Cristo Spring are of considerable importance in any plan of economic operations.

On the basis of a production of 500 tons daily the mining, milling and hauling costs should not exceed $5.00 per ton. With a larger daily production the costs would necessarily be lower. The costs are segregated as follows:

Mining $0.80; Hauling to be done by trucks, $0.25 per ton; Milling and marketing, $2.25 per ton.

FINANCIAL ASPECTS: The ore bodies within the tactitic area are probably large and may be expected to sustain long term mining and milling operations. It is believed that some of these ore bodies will average as much as 1% WO_3 per ton, while other smaller bodies will run as high as 3% WO_3 per ton. But using .5% WO_3 as the minimum grade of ore that can be worked at a profit (on the basis of 500 tons per day), with reasonably efficient concentrating methods, the recovery should not be less than 80%, or 8 lbs., of WO_3 per ton of ore treated.

At the present market price of $22.00 per unit of 20 lbs. the recovered WO_3 would have a value of $8.80. From this amount is deducted the operating costs of $3.00 per ton, leaving a net of $5.80 per ton. Further deductions in the form of overhead, taxes, etc. are to be made. But in view of the rapidly changing tax structure the writer has not attempted to fix these charges.

CONCLUSION: While the extent and quality of the Monte Cristo tungsten deposit are not as yet unknown it has the possibility of becoming the largest commercial deposit of its kind in the U. S. In size compares favorably with any of the porphyry copper deposits or the Climax Molydenite deposit. In the event an investigation shows it to be commercial the capital putting it over would be in a leading position in the tungsten markets of the U. S. The deposit is undoubtedly worth of at least a good preliminary investigation.

In fixing the minimum tungsten trioxide content of the ore at .5% only the mineral scheelite was considered as the source of this. Its associated mineral, powellite, through the contained tungsten trioxide and molybednum, would add considerably to the net value of the ore.

Respectfully submitted,

/s/ JOS. G. O'BRIEN
Mining Engineer
Box 988
Ely, Nevada

Sept. 15, 1941.

REPORT OF PRELIMINARY INSPECTION TRIP AND
PRELIMINARY LABORATORY TESTS

MONTE CRISTO TUNGSTEN DEPOSIT

January 24, 1951

On January 10, 1951, H. B. Chessher, Glenn Gentry, J. R. Murphy; and H. L. Hazen arrived on the Monte Cristo Tungsten property about 3:30 in the afternoon. We walked over the outcrop of the tungsten bearing rock that I considered a lime schist. The name of Tactite has been given by Larsh to this type of formation. The original locator, J. R. Murphy, showed us the outcrop area that he said was all mineralized with scheelite.

The formation was on edge and the strata were exposed across the strike of the formation. It has been partially eroded and the hillside had almost the slope of rest. The gulley at the bottom of the slope is most probably on a fault plane. We went over the mineralized area first during daylight, and could see scheelite fluoresce only when the rock inspected was covered with a blanket to exclude the light.

Only two small adits have been started into this formation, each going into the hill about 10 feet. At the top of the formation Murphy sank a shaft down a short distance that I guessed was also about 10 feet. The lower adit is only a short distance above the bottom of the gulley. The upper adit was near the shaft at the top of the mineralized area and I guessed about 600 feet up the hill side.

During the daylight, and without use of the mineralight, H. B. Chessher and I cut two samples from the face of the lower adit across a distance of about 6 feet. The rock here was obviously low grade when inspected under a blanket with a mineralight. Then Glenn Gentry and I cut two samples across the face of the upper adit across 70 inches. Under the blanket this appeared to be good ores.

ANALYSIS Of samples by Union Assay Office, Inc.

No. MC 1 Across 6 ft. of the face of lower adit near floor.....0.140% WO_3
No. MC 2 Across 6 ft. of the face of lower adit about 5 ft. above floor .....0.075% WO_3
No. MC 3 Across 70 inches of the face of upper adit near floor ....0.625% WO_3
No. MC 4 Across 70 inches of the face of upper adit five feet above floor.....0.558% WO_3

After darkness fell (the wind was blowing and it was snowing a little) we spent two hours walking slowly back and forth across the mineralized area inspecting all of the rock with mineral lamps. Some of the strata was much higher grade than the average, but the entire area was mineralized. Murphy told us that the measured exposure that we were inspecting was 400 feet wide and 600 feet high. I could well believe it.

After returning to the laboratory in Virginia City we made sink-float tests on portions of sample No. 4. These tests showed, under a mineralight, that it would be impossible to obtain a concentration of the tungsten at any size that could be treated by the sink-float system. The rock is well garnetized. It is very heavy, and half of the ore sank in pure acetylene tetra-bromide with a specific gravity of 2.968. But the mineralight showed that the float contained just as much scheelite as was contained in the sink.

We next made sink-float tests on a portion of sample No. 2. I though it possible that such a low grade material might float on a liquid in which ore as

good as sample No. 4 would sink. The tests on sample No. 2 in pure acetylene tetra-bromide also gave an even split of the sample at a specific gravity of 2.988 and the sink contained just as much scheelite as did the float.

The above tests proved to my satisfaction that sink-float would be of no value in the treatment of this ore.

We then started panning tests on portions of Sample No. 4. We found that the scheelite crystals did not crush free from the gangue until the ore was ground to pass a 40 mesh screen. We then carefully ground a portion of sample No. 4 to pass 40 mesh screen and panned it very roughly, trying to produce a low tail rather than a good concentrate. After the first panning was completed we panned the first tailing again, producing a second pan concentrate. During this work we slopped over a "slime" product which was quite coarse and which settled and filtered very rapidly.

The results of this panning were assayed by Union Assay Office, Inc., with the following results:

Product	Weight %	% WO_3	% Content WO_3
1st Concentrate	16.01	2.27	70.48
2nd concentrate	8.26	0.67	10.67
Sand Tail	46.92	0.19	17.28
Slime Tail	28.82	0.03	1.56

Head - Sample #4
Assay Head

I feel that the following probabilities are indicated by the preliminary tests:

1. This ore must be ground to pass 40 mesh before it can be concentrated.

2. This ore should be first concentrated over tables at 40 mesh. The slime tail would be very low grade and should be discarded. The sand tail should be re-ground and concentrated.

But if an ore deposit is established in the area and the Government will purchase tungsten ore as during the last War, I would judge that shipping ore could be mined directly from this deposit and a large profit obtained with a minimum capital investment.

Respectfully submitted

H. L. Hazen, Mining Engineer
P. O. Box 128
Carson City, Nevada

May 1, 1951

Mr. H. S. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg., P. O. Box 889
Reno, Nevada

Dear Sir:

On April 25, 1951, I spent the afternoon and evening with you and J. M. Murphy at the Monte Cristo tungsten mine situated on the westerly side of White Pine Mountain in the White Pine Mining District, White Pine County, Nevada. My job was to assist you in the sampling and to carefully observe and study the character of the rock and to form my opinion of the difficulties that might be encountered in the driving of a horizontal tunnel 8' wide by 10' high for 300 feet into the hillside by following the richest scheelite band now exposed in the central part of the main scheelite deposit on the north side of Cabin Gulch.

We cut nine (9) samples during daylight with moils and single jack and during said operations I studied carefully the character of the rock and its amenability to standard drilling methods. It is my opinion that five good miners will be able to drill, shoot and muck out two rounds per eight hour day, each round to be six feet long by eight feet wide by ten feet high, and that unless loose fault zones or loose fractured zones are encountered as the tunnel work progresses, no timbering will be necessary except perhaps at the portal.

The opinion above expressed is conditional upon the property being supplied with the following machinery, equipment, tools, supplies, etc., to-wit:

1 - Simco Finlay loader (mucking machine), Model 12-B.
1 - Joy Hydro Drill Jib (2 drill Jumbo)
3 - I-R DA 35 Automatic Drifters
12 - Timken tungsten carbide bits (1-3/4" & 1-5/8")
1200 - feet of 35 lb. rail with fishplates, cross ties and spikes for laying two tracks into said 300' tunnel
6 - Ore cars - side dump, each 20 cu. ft. capacity
1 - 500 cubic foot compressor driven by diesel or gasoline engine
1 - air fan with engine to drive same and 400 ft. of 12" air vent pipe for sucking out air
1 - air receiver of large dimensions
1 - water pressure tank
1 - fuel tank

and an adequate supply of water, drilling steel, powder, fuse, caps, carbide, air hose, fuel, timbers, lube oils, greases, wrenches, shovel, picks, double and single jacks, and such other tools, supplies, machinery and equipment as are customarily and necessarily used and needed on a tunnel job of this size.

The five miners using the equipment above described should be able to drive the 300 feet in thirty (30) days of actual working time providing they average a minimum of ten feet in length each 8 hour day. I estimate the total ore to be mined and the gross value thereof to be as follow, to-wit:

The tunnel 300' by 8' wide by 10' high equals 24,000 cubic feet and when divided by 12 cubic feet for each ton of ore in place equals 2000 tons of ore, and if the ore will average 0.50% WO_3 such will equal 1000 units of WO_3, and if the Government will pay $63.00 per unit less 15% for loss in tails while being milled and if the Government will charge $10.00 per ton for handling, transporting and milling the crude ore, the gross value of the ore mined from said tunnel should be:

2000 tons x 0.50% WO_3 equals 1000 units x $63 per unit x 85%
less $20,000.00 (2000 x $10 for Government charge) equals...$35,550.00

and it is my belief that the total operating costs can be kept within the following estimates, to-wit:

Mining costs---2000 tons at $4.00 per ton	$ 8,000.00
Royalty charge --2000 tons at $1.00 per ton	$ 2,000.00
Overhead charge--2000 tons at $1.00 per ton.....	$ 2,000.00
Trucking charge--2000 tons at $4.00 per ton.....	$ 8,000.00
TOTAL OPERATING COSTS.....	$20,000.00

The operating profit (before rental costs for such equipment as may be rented for the first 300' of tunnel, and before taxes, depreciation and depletion) during said thirty days of operating time is estimated to be ($35,550.00 minus $20,000.00) $13,550.00. If the first 300' of tunnel project works out as above outlined, or reasonably close to the estimates made, then it is my belief that additional tunnel projects should be spotted and driven at strategic places in the mineralized scheelite ore zone for the purpose of systematically blocking out ore reserves that will be measureable with a greater degree of safety than if diamond drill holes are used for such purposes. Furthermore, the tunnels will provide your engineers with a better picture of the formations and geological conditions than will be the case if you develop the property by use of diamond drill holes.

I believe that my costs hereinabove are conservatively made, and that $4.00 per ton will cover the costs of all labor and supplies used in the mining operation. For instance, five men working on a labor contract at $1.50 per ton or at $10.00 per foot in length will earn $24.00 per day if they drive 12' in length in a tunnel 8' wide by 10' high. This amounts to $120.00 for labor and leaves ($320 minus $120) $200.00 per day for supplies during each day that 12 feet of tunnel is driven and from which 30 tons of ore should be removed. You assure me that $1.00 royalty charge is sufficient under your agreement with the owners. The trucking rate of $4.00 is adequate, in my opinion, because the trucking distance from mine to Ely, Nevada, is 60 miles, being 15 miles over dirt road and 45 miles over Highway 50, equal to 6-2/3¢ per ton mile.

Yours very truly,

Glenn Eastham
Foreman, Chesco Mine at Aurora
P. O. Box 88-7, Hawthorne, Nevada

FILE COPY 400
SURNAME:

Chapman
Selfridge
Mitt

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

AUG 20 1952

Mr. George W. Snyder, Jr.
United Minerals Corporation
518 Felt Building
Salt Lake City, Utah

Re: Docket No. DMEA 2645 - Tungsten
Monte Christo Tungsten Mine
Cabin Gulch Claims
White Pine County, Nevada

Dear Mr. Snyder:

In reviewing your application for exploration assistance on the above mentioned property, we fail to find any maps showing the topographic or geologic structures of the deposit.

If you have any maps of the area covering the topography and geology, we would appreciate receiving copies of them. The maps should show the present cuts and pits on the property and show the points from which samples were taken.

Maps showing the location of the proposed diamond drill holes and adit should be presented.

We shall appreciate receiving the above mentioned data as soon as possible so that we may proceed with the processing of your application.

Sincerely yours,

George C. Selfridge

cc
8/20/52

G. C. Selfridge, Chief
Iron and Ferro-Alloy Division

TLChapman'lm
8/19/52

cc: Admn. Reading File
Docket
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. III
G. C. Selfridge
T. L. Chapman

IN REPLY REFER TO:
G-MD-CF

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

August 15, 1952

Memorandum

To: George C. Selfridge, DMEA

From: Dwight M. Lemmon, USGS

Subject: Exploration application $34,500 DMEA 2645 - Tungsten
United Minerals Corporation
518 Fell Building
Salt Lake City, Utah

Property: Cabin Gulch claims
(Monte Cristo Tungsten Deposit)
White Pine Range
White Pine County, Nevada

Comment: This is the same property as DMA 1077 - Chessher and Standifer (see my memo of May 4, 1951 for discussion). Chessher optioned the claims to Harlan H. Bradt in October 1951, and to George W. Snyder, Jr. and associates on March 24, 1952.

The new proposal involved the following:

Diamond drilling 3,000 feet at $6.50	$ 19,500
Bulldozing roads 400 hours at $12	4,800
Drifts and crosscuts 200 feet at $30	6,000
Supervision (7 months at $500)	3,500
Accounting (7 months at $100)	700
	$ 34,500

The applicant has submitted no geologic or topographic map of the deposit, and is therefore certainly not in a position to make competent plans for diamond drilling. The scheelite-bearing rocks are tightly-folded and there is no assurance that the favorable beds extend to depth. Before any project is approved, a good detailed geologic and assay map should be made of both sides of Cabin Gulch. The area to be covered is probably about 0.5 square mile. If the applicant will not make the map, then the field team should be asked to do the mapping, a chore that will take about 2 weeks for 2 geologists and an additional week for a mining engineer. Unless the map is made first, no diamond drilling should be considered.

Copy retained 400

This property has been examined to death by geologists and engineers who made one-night stands and did not stay to do a thorough job. I have been there twice, Benson and Gentry of the Bureau of Mines once each, and Dave Baker, Jay Carpenter, and H. L. Hazen have each been there once in the past year. A real mapping and sampling job is now required.

I suggest that you write the applicant to see of he has prepared any maps. If he has not, the application should be referred to the field for geologic mapping.

D. M. Lemmon

IN REPLY REFER TO:
G-MD-CF

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WASHINGTON 25, D. C.

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DMLemmon:gt

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C-MD-CP

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GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

August 15, 1952

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DMLemmon:gt

Form MF-103
(April 1951)

U[redacted] DEPARTMENT OF THE INTE[redacted]R

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. DMEA-2645

Date received 8-11-52

Participation

UNITED MINERALS CORP.
518 FELT BUILDING
SALT LAKE CITY, UTAH

Name and address of applicant

Date JULY 31, 1952

FILL IN THIS BLOCK

Date of application JULY 31, 1952

Estimated cost 34,500.00

Mineral or metal TUNGSTEN

Percentage of Government participation 75%

Location of mine HAMILTON MINING DISTRICT,

WHITE PINE COUNTY, NEVADA

Date of filing MF-100 In process

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)?

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 11 1952

*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.

UNITED URANIUM CORPORATION
(Name of company)

By George W. Snyder Jr.
(Signature of authorized official)

JULY 31, 1952
(Date)

PRESIDENT
(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

June 13, 1952

Mr. O. C. Mittendorf, Administrator
U. S. Department of the Interior
Defense Minerals Exploration Admin.
18th and C Streets
Washington, D. C.

Dear Mr. Mittendorf:

We submit herewith application for exploration project contract on the Monte Cristo Tungsten Mine, White Pine County, Nevada, in accordance with the Defense Production Act of 1950. Attached hereto, please find executed copy of Form MF-103. In conformance with the numbering system on Form MF-103, which form bears the date of April 1951, we submit the following information:

1. Applicant is a corporation validly existing under the laws of the State of Nevada.

2. Does not apply.

3.

President and Director	- George W. Snyder, Jr.,	518 Felt Building Salt Lake City 1, Utah
V. Pres. & Dir.	- Harold A. Covey,	" " " "
V. Pres. & Dir.	- Mason W. Rankin,	708 Harrison Avenue Helena, Montana
V. Pres. & Dir.	- George W. Snyder,	218 Felt Building Salt Lake City 1, Utah
V. Pres. & Dir.	- H. C. Orton,	231 So. LaSalle St. Chicago 4, Illinois
Secretary-Treasurer	- Guy Snyder	218 Felt Building Salt Lake City, Utah

The above, with the exception of Mr. Guy Snyder, are the largest stockholders of the corporation.

4. Historical Background of Principal Officers and Directors:

Mr. George W. Snyder, Jr., Director and President of the Corporation, has been active in mining, oil, and airline enterprises in the Intermountain Region for the past fourteen years. He served as President and Chairman of the Board of Challenger Airlines Company and its predecessor from 1945 until 1948 and was one of the organizers of this concern. He has operated numerous mining and oil properties since this period.

Mr. Harold A. Covey, Director and Vice President of the Corporation, is an experienced Mining Engineer having been employed for six years with the Triumph Mining Company, located in Big Wood River region of Blaine County, Idaho, one of Idaho's leading lead-zinc-silver producers. He resigned from his position as Chief Engineer with them in 1945. Prior to that time, Mr. Covey served as Engineer for Snyder Mines, Inc., in Salt Lake City and at Mercer, Utah. He has

actively engaged in mining since 1937, when he operated a lease in the Alta Mining District, Utah. His other interests are as a principal stockholder and partner in the Covey Investment Company and the Covey Gas and Oil Company, respectively.

Mr. Mason W. Rankin, Director and Vice President of the Corporation, is an experienced Mining Geologist. He has actively engaged in supervising geological examinations and mine operations in Western United States since 1936, having served as Chief Geologist for the Triumph Mining Company from 1939 to 1942, when he entered the employment of the American Smelting and Refining Company as a Geologist and Engineer. He served in this capacity until February, 1949, at which time he resigned to devote closer personal attention to the active direction of affairs of this Corporation.

Mr. George W. Snyder, Director and Vice President of the Corporation, has been engaged in the Mining Industry in the Intermountain Territory for a period of thirty five years, and has successfully developed numerous major mining operations. He is an Officer and/or Director of fourteen mining companies, several of which are large-scale producers of gold-silver-lead-zinc and copper ores. His services are available to the Corporation as Consultant and Adviser.

Mr. Harvey C. Orton, Director and Vice President of the Corporation, is an experienced corporation executive. He was actively engaged in an executive capacity in the acquisition and management of public utilities, electric, gas and transportation for many years until January, 1935. Since that time he has been interested in a major way as an owner, consultant or foreign fields. His capacity with the Corporation will be chiefly in financial matters.

5. The property was acquired by assignment under lease and option from the lease and option holder, Mr. H. B. Chessher of Reno, Nevada. The property is owned by J. R. Murphy et al of Ely, Nevada, who leased the property to Mr. Chessher who in turn assigned the lease as above.

6. The property owners advise that there are no liens or encumbrances against same.

7. A copy of the basic lease and option and assignment of said lease and option are attached hereto as exhibit A. Also attached hereto as exhibit A, please find executed copy of the Landlord's Subordination Agreement.

8. A copy of the last financial statement of the company is attached hereto as exhibit B.

9. Applicant submits that they are willing and prepared to furnish 25% of the funds needed for the project.

10. a. Property consists of 12 contiguous unpatented lode mining claims, situated in Cabin Gulch in the White Pine Mining District, White Pine County, Nevada, and which property is generally known locally as the Monte Cristo Tungsten Mine.

b. The principal site of operations will be on the Cabin Gulch, Cabin Gulch No. 1, Cabin Gulch No. 2, Cabin Gulch No. 3 and Cabin Gulch No. 4 claims. Development responses may indicate the desirability of extending the exploration operation on to the other claims. A claim map of the property is attached hereto as exhibit C.

11. The property was initially located in the name of J. R. Murphy, D. B. Murphy and Patrick Murphy, herein referred to as J. R. Murphy et al. Initial location was made about 1939. Annual assessment as required has been accomplished each year to date. The property has been locally known as Monte Cristo Tungsten Mine property for a period of several years.

12. The property is located approximately 60 miles south and west of Ely, Nevada and is reached by traveling the surfaced highway between Ely and Eureka to a point 45 miles west of Ely where a turn off is made onto an unimproved county road leading to Duckwater, Nevada. This road is followed to the south a distance of 13 miles whereafte a turn is made to the east up Cabin Gulch. The access road is plainly marked by signs. The nearest railroad is located at Ely, Nevada. Company believes that haulage will presently be by truck from the mine to any of three milling points, depending upon grade and character of ore encountered. These milling points are namely Cherry Creek, Nevada, Pioche, Nevada and Bishop, California, a distance respectively of 110 miles, 190 miles and 260 miles. All surfaced roads are passable year around. Severe mud conditions, however, prevail on the county roads during the early spring months, and stockpiling of ore will probably be necessary.

13. Adequate water for mining operations and camp supply is available the year around from the Monte Cristo spring situated approximately 2 miles to the south. The owner of the water rights on this spring has indicated his willingness to permit the use of this water for mining operations at nominal cost. In the event development responses indicate that a milling operation is advisable on the property, a supply of water estimated at from 2 to 3 hundred gallons a minute from this spring would be available to the company. Detailed questioning of local residents reveals that this water supply is permanent at all seasons. Applicant believes that the supply is adequate for all purposes herein considered. All power will be furnished by stationary diesel units. Present diesel oil cost in the vicinity is approximately 21¢ per gallon.

14. There are three small housing structures on the property which are adequate during preliminary stages of development work. There are no other usable structures, facilities or equipment on the property.

15. As indicated in paragraph 12, the ore would be shipped by truck with the following estimated total haulage cost: a. To Cherry Creek, Nevada, $5.75 per ton. b. To Pioche, Nevada, $8.25 per ton. c. To Bishop, California, $12.50 per ton.

Milling facilities at each installation vary. Detailed metallurgical tests are now being conducted to establish recovery rates and impurity content. Applicant believes that ore presently being mined and stockpiled can be shipped to any of the above milling plants, providing a grade of .6% WO_3 can be maintained. Detailed sampling of area exposed by new road construction and of all potential work faces indicate that this grade can be maintained.

Milling procedures in general at the Cherry Creek plant consists of jigging, tabling and flotation. The presently contemplated facilities at Pioche, Nevada, will consist of the same as the Cherry Creek Mill with the addition of a leaching unit. Applicant has no definite advise on the status of announced plans for the operation of the Pioche unit. Complete tungsten treatment facilities are available at the Bishop, California plant of the United States Vanadium Corporation and applicant has used their schedule throughout the economic studies.

16. A total previous development on the property has consisted of very limited pit and bulldozer cuts and applicant has only recently completed construction of a road to the site of projected mining operations. This road has exposed the ore zone in at least four places. Applicant has no knowledge of actual production from the property, but has been advised that a very small shipment of high grade ore was made during the last war.

The general area in Nevada presently includes at least three small tungsten producers and numerous properties are now undergoing exploration and development.

Attached hereto as exhibit D are the reports on the property furnished by the previous owners.

17. Preparatory work is now near completion and applicant believes that by June 15, 1952, approximately 50 tons per day of ore averaging a .6% WO_3 will be produced. Mining operations are on a contract basis at a total cost of $6.00 per ton. Net values depend upon final milling arrangements consummated. The present knowledge of the company indicated the net value of this grade of ore before mining costs or truck haul to be approximately $22.00.

18. The ore deposit occurs in a garnetized-tactite zone in the general region of a limestone-granite contact. The material is very highly silicified and occurs in a bedding dipping approximately 10 degrees to the west and with considerable folding present. Small amounts of chalcopyrite occuring in the zone are not considered to be of economic importance. The principal zone varies from eight to 40 feet in width and present exposures indicate its continuity for more than 300 feet along the strike of the mineralized bedding. Vertical exposures are not well established because of variation in width and grade. A minimum of 100 feet in depth is indicated with no apparent material change in values.

B. Attached hereto as exhibit C are all available maps and assay data.

C. Applicant presently believes that at least ten thousand tons of material expected to average approximately .6% WO_3 is now in sight.

19. The very limited amount of development thus far accomplished on the property does not reveal sufficient data to properly establish its merits. Applicant proposes the performance of the development work outlined in this application to ascertain the presence of additional reserves, to explore fully the longitudinal and vertical extensions of the ore zones and to evaluate grade and character of the ore.

20. Exploration will be conducted toward the development of substantial tungsten production. The known values occur as fine grained Sheelite crystals disseminated throughout the mineralized zone. The Scheelite contained is the only known material of economic value on the property.

21. Applicant proposes to explore the property with ten diamond drill holes aggregating three thousand feet at various locations established to delineate the vertical and lateral extensions of the principal ore body, as well as to explore the paralleling beddings exposed by the recent road work. Applicant further proposes to perform an additional four hundred feet of trenching along the lateral extensions of the ore exposures recently established. Applicant

proposes finally to drift horizontally 200 feet in the ore zone toward the north from the site of the lowest pit on the north side of Cabin Gulch. Applicant agrees that the above outlined work can be concluded within twelve months of starting date.

22. The amount of ore exposed by the limited amount of development work thus far accomplished, along with the favorable geologic conditions prevailing and the uniformity of opinions furnished by the company's and independent engineers makes it desirable for the company to undertake the herein described development project.

23. a. All work proposed will be performed on a contract basis as follows:

Three thousand feet of diamond drilling @ $6.50/ft.	$19,500.00
Four hundred hours of bulldozer trenching & road building @ $12.00/hr (Includes all compressor & roadwork costs)	4,800.00
Two hundred feet of drifting and cross cutting @ $30,00/ft. (Includes all labor & supplies)	6,000.00
Supervision (7 mo. active @ $500/mo.)	3,500.00
Accounting (7 mos. @ $100/mo.)	700.00
	$34,500.00

b. Supervision (see above)
c. None
d. None
e. None
f. All operations will be on contract basis as specified under para. (a) above
g. None
h. None
i. Included in contract costs.

24. Performance schedule will vary according to starting date. Assuming a start in July, the following schedule can be met.

	Total Cost	Diamond Drilling	Bulldozer Work	Drift & Crosscutting
July, 1952	4,400.00	400'	100 hours	--
Aug. 1952	6,550.00	500'	100 hours	50'
Sept. 1952	6,550.00	500'	100 hours	50'
Oct. 1952	6,550.00	500'	100 hours	50'
Nov. 1952	5,350.00	500'	--	50'
Dec. 1952	---	--	--	
Jan. 1953	---	--	--	
Feb. 1953	---	--	--	
Mar. 1953	---	--	--	
Apr. 1953	---	--	--	
May 1953	2,550.00	300'	--	
June 1953	2,550.00	300'	--	
TOTALS *	$34,500.00	3,000 ft.	400 hours	200 feet

* Supervision, engineering, geology and accounting included.

Respectfully submitted,

UNITED MINERALS CORPORATION

George W. Snyder Jr.

George W. Snyder, Jr., President

EXHIBIT "A"

C O P Y

LEASE AND OPTION AGREEMENT

THIS AGREEMENT, made this the 4th day of June, 1961, by and between JAMES R. MURPHY, a single man, and D. B. MURPHY, sometimes known as BERT MURPHY, and his wife, SYLVIA E. MURPHY, the business address of each being P. O. Box 524, Ely, Nevada, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and H. B. CHESSHER and JANE E. CHESSHER, respectively husband and wife, residents of the State of Nevada, the business address of each being 422 Gazette Bldg., P. O. Box 889, Reno, Nevada, parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: That SELLERS, in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, to them in hand paid by BUYERS, the receipt whereof SELLERS hereby acknowledge, and in further consideration of the covenants and agreements hereinafter contained, upon the part of BUYERS to be kept and performed, do by these presents contract, covenant and agree to grant, bargain, sell, remise, release and forever quitclaim unto the BUYERS, and to their heirs, successors and assigns, for the purchase price sum of Fifty Thousand Dollars ($50,000.00), payable in manner and way hereinafter designated, all of those certain twelve (12) unpatented lode mining claims, commonly known and referred to as the Monte Cristo tungsten mine, situated on the westerly side of White Pine Mountain in Township 16 North, Range 57 East, M.D.B.M., in the White Pine Mining District, in the Westerly part of White Pine County, State of Nevada, named, located and described as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE)	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128 1	355
CABIN GULCH SIDELINE NO. 2 (Also called SIDELINE NO. 2)	128	356

and all of aforesaid twelve (12) unpatented lode mining claims are owned by SELLERS and are held by right of good and valid locations, and are free and clear of liens and/or incumbrances, except title is held subject to the paramount title of the United States of America.

SELLERS covenant and agree that the aforesaid twelve (12) unpatented lode mining claims are free and clear of any liens and incumbrances and adverse claims of any kind and character, and that SELLERS will promptly warrant and defend title to the said twelve (12) unpatented lode mining claims to the BUYERS against all claims and demands of any and all persons, firms and/or corporation, subject to the paramount title to said claims being held by the United States of America.

SELLERS agree that if the payments, hereinafter designated, are paid by BUYERS to SELLERS within the time or times and in the manner and way herein this agreement provides, then BUYERS, their heirs, successors or assigns are to have and to hold, all and singular, the said twelve (12) unpatented lode mining claims, together with the appurtenances and privileges incident thereto, FOREVER.

SELLERS agree that the said purchase price sum of Fifty Thousand Dollars ($50,000.00), named in the second (2nd) paragraph on Page One (1) of this agreement, shall be payable to SELLERS at the time or times, and in the manner and way as follows, to-wit:

$ 200.00 previously has been paid to SELLERS on January 1, 1951;
$2500.00 shall be paid on or before June 15, 1951; AND
$2500.00 shall be paid on or before January 1, 1953; AND
$2500.00 shall be paid on or before January 1, 1954; AND
$2500.00 shall be paid on or before January 1, 1955; AND
$ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 80 consecutive calendar months until the total purchase price sum of $50,000.00 shall have been paid to SELLERS: it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

SELLERS agree tha simultaneously with the receipt from BUYERS of the said payment of $2,500.00 due hereunder on or before June 15, 1951, SELLERS immediately will execute and deliver in escrow in the First National Bank, of Ely, Nevada, a good and sufficient mining deed conveying to BUYERS, or to their order, good and merchantable title to said twelve (12) unpatented lode mining claims; the signatures of SELLERS to said deed to be properly acknowledged before, and attested by, a Notary Public, and said deed is to embrace all of the warranties and covenants herein this agreement contained, and said Bank is to promptly deliver said deed to BUYERS, or their order, upon its receipt of the final payment due SELLERS hereunder upon said Fifty Thousand Dollar ($50,000.00) purchase price.

SELLERS agree that all royalties paid SELLERS under this agreement shall be applied as, and credited upon, the next monthly or annual payment orpayments to become due hereunder upon, and as a part of, the said Fifty Thousand Dollar ($50,000.00) purchase price. Payment of any sum due hereunder to said Bank for the account of SELLERS is the same as if said payment had been paid or made by BUYERS directly to SELLERS.

SELLERS AGREE, notwithstanding anything in this agreement to the contrary, that this agreement embraces and options to BUYERS, as a part of said Fifty Thousand Dollar ($50,000.00) purchase price, all of the right, title and interest of SELLERS in and to any real and/or personal property of any kind or description situated within a radius of one thousand feet (1000') of any of said twelve (12) unpatented lode mining claims, even though the same is not fully described herein.

IN CONSIDERATION of the terms and conditions of this agreement upon the part of SELLERS to be faithfully kep and performed, BUYERS covenant and agree as follows, to-wit:

1st. To keep said premises and every part thereof at all times free and clear of mechanics' and miners' liens or other liens, incumbrances or liabilities arising from any act of BUYERS or their agents; to settle, pay and discharge, when due, on or before the 30th of each calendar month, all indebtedness and liabilities incurred by said BUYERS prior to the expiration of the preceding calendar month for work done, services rendered or material furnished in respect of and for said premises, which could in any manner become a lien on same, and BUYERS are to permit SELLERS to post in some conspicuous place upon the said premises a notice that the interest of the SELLERS in and to said twelve (12) unpatented lode mining claims shall not be subject to any lien for services, labor material furnished upon or used in connection with said premises, said notice to be on behalf of and in the name of SELLERS, with the signatures of BUYERS also to be attached thereto if SELLERS make request therefor.

2nd. To permit SELLERS to have access at all reasonable times to any part of said twelve (12) unpatented mining claims, and to any and all workings thereupon, for the purpose of sampling, inspecting and surveying said workings and premises, until the said total purchase price shall have been paid to SELLERS; to keep and maintain at BUYERS' office in Room 422 Gazette Bldg., Reno, Nevada, full and complete records and books of account showing all ore produced and the proceeds from production, which books shall be open to inspection of SELLERS at all reasonable times between the hours of 9 A.M. to 4 P.M. o'clock of each business day until the said total purchase price has been paid to SELLERS.

3rd. To pay to SELLERS, until said Fifty Thousand Dollar ($50,000.00) purchase price is paid in full, a schedule of royalties, as hereinafter described upon all ores, concentrates and/or bullion shipped, milled and/or sold from said premises by virtue of this agreement; said royalties, when paid, to be credited upon and applied against and shall be an offset to, the next minimum monthly or annual payment or payments then to become due hereunder, and all royalty payments and minimum monthly payments and annual payments are to be a part of said Fifty Thousand Dollar ($50,000.00) purchase price, and that the rate of royalties to be paid shall be as follows, to-wit:

(a) The total of all dry tons of all ores milled, shipped and/or sold by BUYERS from said premises for each calendar month is to be established and a record in writing made thereof. The total of all monies received by BUYERS (after deducting trucking, railroad and smelter charges) for each calendar month is to be kept and a record in writing made thereof. The ratio of total tons of dry ore milled, shipped and/or sold from said premises during any particular month, to the total of all monies received, after deduction of trucking, railroad, treatment and smelter charges, for the sale of all ores concentrates and bullion from said premises during the said calendar month, shall be established as the net amount received per dry ton, and the rate of royalties to be paid by BUYERS to SELLERS shall be paid upon the net amount received, as follows, to-wit:

A royalty of 5% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average 0.5% WO_3 or less per dry ton; AND

A royalty of 6% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.5% WO_3 and not over 0.6% WO_3 per dry ton; AND

A royalty of 7% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.6% WO_3 and not over 0.7% WO_3 per dry ton; AND

A royalty of 8% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.7% WO_3 and not over 0.8% WO_3 per dry ton; AND

A royalty of 9% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.8% WO_3 and not over 0.9% WO_3 per dry ton; AND

A royalty of 10% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.9% WO_3 per dry ton.

All royalty and minimum monthly and annual payments due hereunder to SELLERS, after making the said $2,300.00 payment due on or before June 15, 1951, are to be paid to said First National Bank, of Ely, Nevada, for the account of SELLERS, and all of such payments shall be immediately paid to SELLERS by said Bank and credited by said Bank upon said Fifty Thousand Dollar ($50,000.00) purchase price, and thereupon deducted from the balance then due thereon.

4th. To instruct, upon demand of SELLERS, the mill, smelter, sampler or reduction works or mint purchasing ore, concentrates or bullion, from said premises, to pay directly to said First National Bank, of Ely, Nevada, for the account of SELLERS, all royalties herein this agreement in the preceding paragraph reserved, and the same are to be paid to SELLERS through said Bank as a part of said purchase price.

5th. To accept the benefits of the Nevada Industrial Insurance Act and pay the required monthly premiums to the proper Commission covering all employees working on said premises, or in lieu thereof to purchase similar Industrial Insurance in a recognized company acceptable under the laws of the State of Nevada.

6th. To pay all installments of personal property and real estate taxes which may at any time become finally due and payable upon the said twelve (12) unpatented lode mining claims, or upon any personal property situated thereon, as long as this agreement remains in full force and effect.

IT IS HEREBY MUTUALLY AGREED by and between SELLERS and BUYERS as follows, to-wit:

A. That SELLERS will lend every reasonable assistance to BUYERS with a view to carrying on a harmonious and mutually advantageous and profitable mining enterprise, and Buyers agree to reciprocate fully in this respect.

B. That BUYERS may, in the event this agreement becomes terminated, remove all of BUYERS' equipment, machinery, accessories, supplies or property of any kind which may have been placed by the BUYERS upon or in the said twelve (12) unpatented lode mining claims; such removal to be accomplished within six (6) months after the termination of this agreement from any cause, but if not so removed within the said six (6) months, then the same shall become and remain the property of SELLERS; however, BUYERS shall not remove wooden sets, wooden supports and/or timbers or supports of any kind from any of the workings, adits, tunnels, crosscuts, stopes, shafts, drifts, raises and/or winzes.

C. That in the event the BUYERS shall fail to make any payment on said purchase price as and when due hereunder, this agreement, at the option of SELLERS after ten (10) days from date that notice in writing in duplicate is served upon BUYERS by Registered U. S. Mail, shall become terminated and cancelled unless BUYERS within said ten days time correct the default in payment, which default is to be fully described in said notice. SELLERS must mail one copy of said notice to BUYERS at 422 Gazette Bldg., Reno, Nevada, and one copy to BUYERS at P. O. Box 889, Reno, Nevada, via Registered U. S. Mail. Should BUYERS fail to perform any of the other terms, conditions, covenants or agreements of this agreement upon BUYERS' part to be performed, SELLERS shall have the right to give BUYERS written notice in duplicate to be sent via Registered U. S. Mail, one copy to be addressed to BUYERS at 422 Gazette Bldg., Reno, Nevada, and the other copy to be addressed to BUYERS at P. O. Box 889, Reno, Nevada, or at any address hereafter designated and substituted by BUYERS in written notice served upon SELLERS at P. O. Box 524, Ely, Nevada, said notice to specifically describe wherein BUYERS are in default, and in the event BUYERS should fail to remedy or rectify such default within thirty (30) days after said notice has been served upon BUYERS by registered U. S. Mail, BUYERS shall thereupon be in default hereunder, and the SELLERS may, at their option, immediately cancel and forfeit this agreement without further notice to or consent from BUYERS, and in the event of a cancellation and forfeiture of this agreement, all payments previously made by BUYERS to SELLERS hereunder shall be retained by SELLERS as their property and as liquidated damages, and BUYERS shall have no right, title and/or interest therein or thereto any of said previous payments.

D. That BUYERS shall do the annual assessment work for the said twelve (12) unpatented lode mining claims for each year as required by the Mining Laws

of the United States of America and the State of Nevada, except BUYERS shall not be obligated to do said work in any year in the event BUYERS should surrender this agreement on or before thirty days prior to the end (July 1st) of any year in which said work is due, and further providing said work has not been suspended by an Act of the United States Congress; that in the event said Congress does now or hereafter permit suspension of said annual assessment work by mining claim owners who file claim for exemption, SELLERS must execute and deliver to BUYERS, for the purpose of recording prior to the end (July 1st) of said year, a claim for exemption for all of said twelve (12) lode mining claims, and all of SELLERS' statutory rights to claim exemption from assessment work for each year must be applied against and for said twelve (12) lode mining claims.

E. That, notwithstanding anything in this agreement to the contrary, BUYERS may at any time, when not in default hereunder, release and quitclaim this agreement to SELLERS upon payment or tender of the consideration of Ten Dollars ($10.00), and upon tender of such release and quitclaim, and upon the payment or tender of said Ten Dollars ($10.00) consideration, this agreement shall thereupon become cancelled, inoperative, null and void and BUYERS shall thereupon be released and relieved from any and all obligations hereunder, and all previous payments received hereunder by SELLERS shall forever remain as the sole property of SELLERS and BUYERS shall have no right, title and/or interest therein or thereto.

F. That it is expressly understood and agreed by and between SELLERS and BUYERS that this agreement does amend, modify and change, as expressly stated herein, that certain agreement dated January 1, 1951, executed by J. R. Murphy and D. B. Murphy (being members of the parties of the first part herein) and H. B. Chessher (being a member of parties of the second part herein), which agreement is recorded at Pages 94 to 96 inclusive of Book 163 in the Miscellaneous Records of White Pine County, Nevada, in the office of the County Recorder of said County, and by reference the said agreement is made a part hereof with the express understanding and agreement that it is amended, modified and changed as herein this agreement expressly stated and described; otherwise, the said agreement of January 1, 1951, remains in full force and effect, and an undivided one-half interest in and to said agreement of January 1, 1951, has been duly assigned and transferred to Jane E. Chessher by H. B. Chessher.

G. That this agreement and each and every clause and covenant herein contained shall be binding upon and enforceable by the respective successor, heirs, executors, administrators and assigns of the parties hereto, and the right of assignment by either party hereto is hereby permitted and authorized. This agreement has been executed in quintuplicate and each party hereto has received a duly signed copy hereof, and the First National Bank, of Ely, Nevada, is to receive a signed copy hereof when said deed is deposited in said Bank simultaneously with the payment of said $2,500.00 due on or before June 15, 1951, in order that said Bank may fully interpret its escrow instructions, any of which may be contained and embodies in this agreement. All erasures and interlineations were made before signing.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ D. B. MURPHY /s/ JAMES R. MURPHY

/s/ SYLVIA E. MURPHY

Bert Murphy

Parties of the First Part - SELLERS

/s/ H. B. CHESSHER /s/ JANE E. CHESSHER

Parties of the Second Part - BUYERS

C O P Y

STATE OF NEVADA)
) ss
County of White Pine)

On this 7th day of June, A. D. 1951, personally appeared before me, /s/ Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES R. MURPHY, D. B. MURPHY who is also known as BERT MURPHY, and SLYVIA E. MURPHY, the wife of D. B. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.
My commission expires Aug. 6, 1951

STATE OF NEVADA)
) ss
County of Washoe)

On this 4th day of June, A. D. 1951, personally appeared before me, W. E. Birbeck, a Notary Public in and for said County of Washoe, H. B. CHESSHER and JANE CHESSHER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. BIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada. My Commission expires December 28, 1953

COPY

Reno, Nevada
January 30, 1952

The First National Bank of Ely
Ely, Nevada

Attention of Mr. Jay E. Brinton
President

Gentlemen:

Please accept these amended escrow instructions as a modification of, and an amendment to, the original escrow instructions dated June 5, 1951, signed by each of the undersigned, and deposited with you.

You are hereby authorized and instructed to change said original escrow instructions, dated June 5, 1951, in manner and way and to the extent as expressly described in that amended agreement, dated January 30th, 1952, which amends the Lease and Option Agreement of June 4th, 1951, and an executed copy of said amended agreement of January 30th, 1952, is attached hereto and made a part hereof.

EXECUTED this the 30th day of January, 1952.

/s/ D. B. MURPHY

/s/ JAMES R. MURPHY

/s/ SLVIA E. MURPHY

/s/ H. B. CRESSHER

/s/ JANE E. CRESSHER

COPY

AMENDED AGREEMENT

THIS AMENDED AGREEMENT, made and entered into this the 30th day of January, 1952, by and between JAMES R. MURPHY, a single man, and D. B. MURPHY, sometimes known as BERT MURPHY, and his wife, SYLVIA L. MURPHY, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and H. B. CRESSHER and JANE L. CRESSHER, respectively husband and wife, residents of the State of Nevada, the parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: THAT

WHEREAS, under date of June 4th, 1951, the respective parties to this amended agreement made and entered into a lease and option agreement, a typed copy of which is attached hereto and made a part hereof; AND

WHEREAS, the respective parties to this amended agreement now desire and elect to modify and amend said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto, in manner and way and to the extent as hereinafter described;

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars ($10.00), and for other good and valuable consideration paid to SELLERS by BUYERS, receipt of all of which SELLERS hereby acknowledge, SELLERS do hereby covenant and agree as follows, to-wit:

1st. That the 10th to 17th (inclusive) lines on Page Two of said original lease and option agreement of June 4th, 1951, which now read as follow, to-wit:

> $ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 80 consecutive calendar months until the total purchase price sum of $50,000.00 shall have been paid to SELLERS; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

be and the same are hereby modified and amended to read and be as follows, to-wit:

$200.00 per month, as the minimum monthly payment, shall be paid during each calendar month for the first five (5) calendar months of the year 1952, and $500.00 per month, as the minimum monthly payment, shall be paid during each succeeding calendar month, beginning with the month of June, 1952, and continuing during each successive calendar month until the said total purchase price sum of $50,000.00 shall have been paid hereunder to SELLERS from all royalty payments, monthly payments and annual payments; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment or payments then to become due hereunder on said purchase price.

AND SELLERS do hereby acknowledge receipt of full payment by BUYERS of $600.00 for payment in full for the months of January, February and March, 1952, as being the only payments due for said three months under the preceding amendment; AND

2nd. That a duly executed copy of this amended agreement shall be delivered forthwith by BUYERS to the First National Bank of Ely, Ely, Nevada, in order that said bank may change its escrow instructions to conform to the intentions and text contained in this amended agreement, and said bank is hereby authorized and instructed to make said changes in said escrow instructions.

IT IS EXPRESSLY UNDERSTOOD AND AGREED by and between SELLERS and BUYERS that no other term, condition or text of said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto and made a part hereof, is in any manner or way, or to any extent, modified or amended except as hereinabove expressly described, and said original lease and option agreement of June 4th, 1951, is now, and shall remain, in full force and effect subject to the amendments hereinabove contained.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ D. B. MURPHY /s/ JAMES R. MURPHY

/s/ SYLVIA A. MURPHY

Parties of the First Part - SELLERS

/s/ H. B. CHESSHER /s/ JANE A. CHESSHER

Parties of the Second Part - BUYERS

STATE OF NEVADA)
) ss
County of White Pine)

On this 15th day of March, A. D. 1952, personally appeared before me, Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES R. MURPHY, D. B. MURPHY who is also known as BERT MURPHY, and SYLVIA E. MURPHY, the wife of D. B. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.

(SEAL)

STATE OF NEVADA)
) ss
County of Washoe)

On this 30th day of January, A. D. 1952, personally appeared before me, W. E. Sirbeck, a Notary Public in and for said County of Washoe, H. B. CHESSHER and JANE B. CHESSHER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. SIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada
My Commission expires December 28, 1954.

(SEAL)

C O P Y

BAKER AND COMPANY
2402 East Fourth St.
Reno, Nevada

March 24, 1952

Mr. George W. Snyder, Jr.
518 Felt Building
Salt Lake City 1, Utah

Dear Mr. Snyder:

Attached hereto please find two copies of "Offer To Convey" and accompanying documents on the so-called Monte Cristo mine property, properly executed by H. B. and Jane Chessher.

Pursuant to our verbal agreement and arrangements, and for and in consideration of the sum ten ($10.00) dollars, receipt of which is hereby acknowledged and, a further consideration of the issuing and delivering to me of twenty five thousand (25,000) shares of the fully paid and non-assessable common Capital Stock of the new Company that you are organizing for the purpose of developing this property and other tungsten and manganese interests in this area. Said shares are to be delivered to me on or before April 15, 1952.

Upon your acceptance of this assignment as indicated below, you are to promptly pay to me the four hundred ($400.00) dollars which I have paid to Mr. Chessher and which is acknowledged in said "Offer to Convey" and, that you hereto assume all and such obligations as setout in this "Offer to Convey" assumed by me and included in the agreement in the appendage thereto on page 4 thereof.

I understand and approve your further assignment of these instruments.

/s/ S. GEORGE BAKER

S. George Baker, a single man.

/s/ George W. Snyder, Jr.

ACCEPTED: George W. Snyder, Jr.

/s/ CHARLES WM. SMITH

Chas. Wm Smith, Witness to S. George Baker

/s/ HAROLD A. COVEY

Witness to George W. Snyder

COPY

BOOK 163 PAGE 497

Reno, Nevada
March 24, 1952
File 3-22538

OFFER TO CONVEY

Mr. S. G. Baker
P. O. Box 2044
Reno, Nevada

Dear Mr. Baker.

We, the undersigned H. B. Chessher and Jane B. Chessher, husband and wife of Reno, Nevada, for ourselves and as all of the general partners of Monte Cristo Tungsten Company, a partnership, for and in consideration of the sum of ten dollars ($10.00), receipt of which is hereby acknowledged, hereby offer, for the consideration hereinafter named, to convey to you or your assignee expressly subject to the conditions recited hereinafter, all of our right, title and interest in and to the so-called Monte Cristo Tungsten Mine consisting of twelve (12) unpatented mining claims described, located and named as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128	355
CABIN GULCH SIDELINE NO. 2 (Also Called SIDELINE NO. 2)	128	356

all situated in the westerly side of Pine Mountain in Township 16 North Range 57 East M.D.B.M. in the White Pine Mining District, White Pine County, Nevada, and more fully described in two documents titled respectively Lease and Option agreement dated June 4, 1951, by and between the undersigned and James R. Murphy, D. B. Murphy and Sylvia B. Murphy, and Abstract of Title certified by D. S. Shaver on May 3, 1951, both of which documents are by this reference thereto made a part hereof, subject to the following terms and conditions, to-wit:

1. You or your assignee shall agree to keep and perform all conditions of the Lease and Option Agreement referred to as amended January 30, 1952.

2. Concurrent with the execution hereof you are to pay to us the sum of four hundred ($400.00) dollars which amount shall be paid to James R. Murphy et al to meet all payments, falling due under said Lease and Option Agreement, for the months of April and May, 1952.

3. You or your assignee shall made or cause to be made the following additional payments, totalling $80,000.00, to us, to-wit:

Mr. S. G. Baker
March 24, 1952
File 3-22538 - Page 2

A. The sum of $8,100.00 on or before August 1, 1952.
B. The sum of $1,900.00 on or before December 31, 1952.
C. The sum of $5,000.00 on or before December 31, 1953.
D. The sum of $5,000.00 on or before December 31, 1954.
E. The sum of $5,000.00 on or before December 31, 1955.
F. The sum of $5,000.00 on or before December 31, 1956.
G. The sum of $5,000.00 on or before December 31, 1957.
H. The sum of $5,000.00 on or before December 31, 1958.
I. The sum of $5,000.00 on or before December 31, 1959.
J. The sum of $5,000.00 on or before December 31, 1960.

and it is understood and agreed that an over-riding royalty shall be paid to us by you, or your assignee, equal to 8% of the net smelter, mint or ore buyer returns which shall be defined to be the gross amount received, at current market prices, from all ore sales after deducting standard transportation and standard treatment charges, and all of said royalties so received by us shall be credited as payments upon the next annual payment to become due upon said $50,000.00 option price. It is understood and agreed that the said option price of $50,000.00 to be paid to us is an additional sum to the $50,000.00 to be paid to James R. Murphy et al under the terms and conditions of said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952. If S. George Baker, or his assignee, pays to us the said $8,100.00 due hereunder on or before August 1, 1952, then we will execute and deliver to S. George Baker, or to his assignee an assignment in writing of all of our right, title and interest in and to said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, subject to the terms and conditions herein contained.

In the event of the failure of you or your assignee to make any payment due under this "Offer to Convey" agreement, or to perform any term or condition hereof, or to make any payment or to perform any covenant, term or condition contained in the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, then at any time after ten days have expired from date we post and pay for a registered letter in the United States Post Office, at Reno, Nevada, addressed to S. George Baker, P. O. Box 2044, Reno, Nevada, notifying S.George Baker of any default or delinquency in his obligations as described in said letter, then this "Offer to Convey" agreement shall be terminated and cancelled without further notice to S. George Baker or his assignee UNLESS the said S. George Baker fully and completely corrects the default or delinquency described in said registered letter within the said ten days from date the said registered letter is delivered to, and posted in, said post office. If this "Offer to Convey" agreement is terminated and cancelled in manner and way aforesaid then neither S. George Baker nor his assignee shall have any right, title or interest in, or claim against, said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952; the said twelve (12) mining claims or any interest or equity held by the undersigned in and to said Lease and Option Agreement and Twelve (12) mining claims, and in such event all previous payments made to the undersigned by S. George Baker and all expenditures made by S. George Baker upon and for said twelve (12) mining claims shall be forfeited to the undersigned as liquidated damages and for rental of said property, and neither S. George Baker nor his assignee shall have any right, title or interest therein or claim therefor.

Mr. S. George Baker
March 24, 1952
File 5-22538 - Page 3

5. You agree to perform all of the annual assessment work required for the year to end July 1, 1952, for the twelve mining claims described in the said Lease and Option Agreement; this to be a firm commitment and notwithstanding any other term or condition of this option.

6. You or your assignee may be payment of all amounts due us to the date of notice of termination, cancel this agreement upon ten days written notice to us and upon that condition be relieved of all further liability or obligation either under this agreement or under the aforementioned Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, and thereafter neither you nor your assignee shall have any further right, title or interest therein.

7. We agree that we will promptly execute any subordination agreement or other document required on a standard form by any agency or agencies of the United States Government in connection with exploration loans or ore purchase contracts. This only applies to our interest and does not commit us to agree that James R. Murphy et al, under said Lease and Option Agreement will execute said agreements.

8. That the standard form of written assignment to be issued hereunder by the undersigned to you if and when you promptly pay to us the said $8100.00 payment due on or before August 1, 1952, shall contain the usual clauses protecting the assignors and also it shall contain a reversion clause providing for the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, to revert to our sole ownership if for any reason whatsoever the said assignment agreement from the undersigned to you is surrendered, cancelled or terminated.

Executed by us, the persons properly qualified so to do, this 24th day of March, 1952, at Reno, Nevada.

MONTE CRISTO TUNGSTEN COMPANY
(a partnership)

By /s/ H. B. CHESSHER
General Partner

By /s/ JANE E. CHESSHER
General Partner

/s/ H. B. CHESSHER
H. B. Chessher

/s/ W. E. SIRBECK
Witness

/s/ W. E. SIRBECK
Witness

/s/ JANE E. CHESSHER
Jane E. Chessher

To MONTE CRISTO TUNGSTEN COMPANY, a partnership, H. B. CHESSHER and JANE E. CHESSHER, 422 Gazette Building, Reno, Nevada

Please be informed that I hereby accept, approve, confirm and ratify all of the terms and conditions of the foregoing "Offer to Convey" agreement, and in consideration of the foregoing "Offer to Convey" as

Mr. S. George Baker
March 24, 1952
File 3-22538 - Page 4

executed by you in my favor, dated March 24th, 1952, I hereby personally agree with you, and am firmly bound and obligated to you, as follows, to-wit:

(a) To perform and do, before July 1, 1952, all of the annual assessment work and labor as required by law to be performed upon and for said twelve mining claims as described in the foregoing option; said work and labor to be promtly paid for by me personally; AND

(b) To fully and promptly comply with the mining laws of the United States of America and of the State of Nevada in the performance and doing of said annual assessment work and labor upon and for said twelve mining claims; AND

(c) To promptly execute in duplicate an affidavit of having performed and done a total of $1200.00, or more, of annual assessment work and labor upon and for said twelve mining claims when said work is completed prior to July 1, 1952; said affidavit to be prepared by you, however, I will pay for recording said affidavit in the office of the County Recorder of White Pine County, Nevada; AND

(d) To promptly pay on June 1, 1952, the $500.00 monthly payment due to James R. Murphy et al under said lease and option agreement of June 4, 1951, as amended January 30, 1952; AND

(e) To personally assume and undertake all obligations set forth hereinabove and the assignment of all or part of said option to any assignee, or the surrender of aforesaid agreement by me or my assignee, will not in any way or manner relieve or release me personally of any or all of the obligations hereinabove in this instrument undertaken and agreed to by me in the preceding four paragraphs (a), (b), (c) and (d); AND

I hereby bind myself to promptly and fully perform and keep all of aforesaid covenants and agreements before July 1, 1952.

EXECUTED this the 24th day of March, 1952, at Reno, Nevada.

/s/ S. GEORGE BAKER
(S. George Baker)
P. O. Box 2044
Reno, Nevada

Witnessed by

/s/ W. B. SIGBACK
(Witness)

RBC/JR
C&CO.

PROOF OF LABOR

STATE OF NEVADA)
: ss
COUNTY OF WHITE PINE)

Before me the subscribed personally appeared, who being sworn, says: that at least One Hundred ($100.00) Dollars each or a total of Twelve Hundred ($1,200.00) Dollars worth of labor or improvements were performed or made upon 12 mining claims named as follows:

Cabin Gulch
Cabin Gulch No. 1
Cabin Gulch No. 2
Cabin Gulch No. 3
Cabin Gulch No. 4
Cabin Gulch No. 5
Cabin Gulch No. 6
Cabin Gulch No. 7
Cabin Gulch No. 8
Cabin Gulch Side Line
Cabin Gulch Side Line No. 1
Cabin Gulch Side Line No. 2

situated in the White Pine Mining District, White Pine County, State of Nevada, during the year ending June 30, 1952.

SUCH EXPENDITURE was made by or at the expense of George W. Snyder, Jr., operator, for and on behalf of the owners of the claims, James R. Murphy et. al. for the purpose of holding said claims.

George W. Snyder Jr.
George W. Snyder, Jr.

Subscribed and sworn to before me this 20th Day of May, 1952.

Notary Public

EXHIBIT "D"

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

ASSETS

Current Assets			
Petty Cash			$ 1,055.62
Cash in Bank - First Security			10,158.62
Cash in Bank - Walker			27,684.22
Cash in Bank - Commercial Trust Co. - New Jersey			90,862.95
Accounts Receivable			3,548.24
Employee Advances			291.00
Total Current Assets			$ 133,600.65
Investments and Other Assets			
Securities		$ 18,000.00	
Insurance Deposits		406.10	
Total Investments and Other Assets			18,406.10
Fixed Assets - at Cost			
Property Deeds, Leases, and Options		116,785.00	
Mine Development and Promotion - Idaho		28,204.17	
Equipment - Lake Creek	$ 6,324.97		
- Rip Van Winkle	5,101.30		
- Lucky Strike	16,018.84		
- Office	1,009.54	28,454.65	
Improvements and Buildings			
Lucky Strike	12,549.93		
Lake Creek	5,391.06	17,940.99	
Total Fixed Assets			191,384.81
Deferred Expenses			
Mine Development and Exploration - Idaho		25,813.07	
- Rip Van Winkle		24,452.93	
- Lucky Strike		38,376.60	88,642.60
Intangible Assets			
Organization Expense			84,450.02
			$ 516,484.18

N/B: Statement prepared from original records without audit.

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

LIABILITIES AND NET WORTH

Current Liabilities		
Accounts Payable - Trade		10,698.44
Ore Advances		15,219.75
Officers Advances		2,193.26
Wages Payable		1,946.75
Employees Withholding Tax		996.60
Payroll Taxes Payable		146.28
Accrued Interest Payable		1,158.09
Loan Payable - Santa Cruz Copper		1,500.00
Total Current Liabilities		$ 33,859.17
Non-Current Liabilities		
Production Notes Payable	$ 53,902.31	
Officers Notes Payable	19,317.67	
Total Non-Current Liabilities		73,219.98
Net Worth		
Capital Stock, Common, Authorized 3,000,000 Shares, par value 10 cents. Issued and outstanding 2,373,227 shares	237,322.70	
Paid In Surplus	172,082.33	
Total Net Worth		409,405.03
Total Liabilities and Net Worth		$516,484.18

N/B: Statement prepared from original records without audit.

Glen A. Gardner, Certified Public Accountant,
Provo, Utah

EXHIBIT "C"

R. R. CASTO
PRESIDENT

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY-TREASURER

PHONE 3-7417

CRISMON & NICHOLS
229-231 SO. WEST TEMPLE ST.

P. O. BOX 1708

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH May 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR six SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT ~~COPPER~~ Molybdenum Tri-Oxide (MoO_3)	PER CENT ~~ZINC~~	PER CENT INSOL.	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	VALUE OF ~~GOLD~~ PER TON
Monte Cristo										
6½ Ft. Cut Upper Tunnel		Trace	Trace		Trace				0.68	
4 ft. Cut Above Shaft									0.46	
4 ft. Cut East Outcrop									0.32	
18 Inches East Outcrop									0.66	
M. P. Upper Tunnel									0.61	
No Tag									0.28	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 22.00

BY

R. R. CASTO
PRESIDENT

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY-TREASURER

PHONE 3-7417

CRISMON & NICHOLS
229-231 SO. WEST TEMPLE ST.

P. O. BOX 1708

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH. July 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR eight SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	No.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT COPPER	PER CENT ZINC	PER CENT INSOL.	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	VALUE OF GOLD PER TON
Monte Cristo	1								0.53	
Slusher	2								0.60	
Higrade Top Bench	4								7.22	
Special	3								0.70	
~~Lower Bench Right Side~~	~~5~~								~~1.57~~	
Lower Bench Left Side	6								0.99	
Stockpile Grab	7								0.37	
Un-marked	8								0.89	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 24.00

BY

EXHIBIT "D"

DAVID D. BAKER
Consulting Mining and Metallurgical
Engineer

Mine Management
Examination & Reports
Plant Design

Reno, Nevada
1380 Sierra Street

April 16, 1951

Mr. H. B. Chessher
Gazette Building
Reno, Nevada

Dear Sir:

Pursuant to your instructions, I visited the Monte Cristo Tungsten Deposit and spent one afternoon and evening making a reconnaissance of the surface exposures and going over the outcrops with a fluorescent lamp. No samples were taken and no attempt was made to survey or measure the orebodies. In the time available it was possible to cover only the portion of the deposit that occurs on the North side of the canyon known as Cabin Gulch. Although my inspection was brief, I can say without hesitation that the deposit is the largest occurrence of undeveloped low-grade tungsten ore that I have seen or known of in the Western United States.

The North side od Cabin Gulch is quite steep and although a great deal of the lower slope is covered with talus the upper portion is uncovered and the tactite bodies outcrop boldly. The scheelite bearing tactite occurs in this area as three bands--a central band standing almost vertically, on each side of which is another band dipping at a steep angle. The three ore bands apex at a point near the crest of the ridge and spread out toward the bottom of the canyon. The central band is roughly 25 feet in thickness and both the eastward and westward bands range from 30 to 50 feet in thickness. All of these tactite bodies can be traced for about 250 feet down the mountainside before they are obscured by the mantle of talus.

The general impression that I gained from lamping the deposit with a fluorescent lamp is that the average grade of the mineralized tactite is about 0.3% WO_3.

Assuming a total length of 750 feet for the 3 bands, an average thickness of 30 feet, and a depth of 100 feet, the possible tonnage of ore in this section of the deposit would be 225,000 tons. Since no intrusive rocks were observed in the vicinity of the tactite bodies it is possible that many hundreds of feet of metamorphosed limestone may be found lying above the batholith of quartz monzonite that uplifted the sedimentary rocks. Thus, the geologic possibilities for greatly increasing the estimated tonnage are very good, and a program of diamond drilling to explore the formations at depth should be undertaken.

At one point in the central band where it has been opened up by an open cut and a shallow pit, I would judge the grade to be 1% over a width of from 6 to 8 feet. This section should be explored since it might be of sufficient importance to support a small scale mining and milling deposit. Such a mill could serve as a pilot testing plant for working out the metallurgy of the lower grade ore.

Very truly yours,

/s/ DAVID D. BAKER

David D. Baker

DDB: jm

Reno, Nevada
February 15, 1951

Mr. H. B. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg.
P. O. Box 889
Reno, Nevada

Dear Sir:

Pursuant to your request, I have examined the surface outcroppings, two short tunnels and one shallow shaft located on the Monte Cristo scheelite tungsten mining property situated in White Pine Mining District, White Pine County, State of Nevada. The property consists of a group of 12 unpatented lode mining claims, and said group, so I am informed, has been owned by the same two owners since scheelite was first discovered thereon in 1939. The scheelite ore deposit covers a large area within the boundaries of said group of claims.

As initial examination was made by me on the afternoon and evening of January 10, 1951, for the purpose of determining the extent of the scheelite ore deposit in the area considered by the owners to be the part of the entire deposit that is the most amenable to economical mining with a power shovel. A snowstorm beginning in the evening of January 10, 1951, prevented my return to the property the following day for a further detailed study. On February 11th and 12th, 1951, I again visited the property and spent a large part of the time in lamping the scheelite exposures and in studying the geology and making measurements of the scheelite ore exposures on the surface. My report follows:

GEOLOGY

A report previously made by Jos. G. L'Brien, E.M., dated September 15th, 1941, covers the aforesaid group of 12 claims and also other claims in the district. It is a lengthy report and in part states as follows, to-wit:

> "The country rock of the White Pine mining district consists of Paleozoic sediments which have been intruded by quartz monzonite and granodiorite in the late Cretaceous or early Tertiary time."

and I agree with that statement. My examination indicates that the metamorphosed zone in which the scheelite ore deposits occur covers a very large area.

ORE DEPOSIT

The scheelite deposit on this group of claims occurs in a contact metamorphosed zone consisting principally of limestones altered to tactite by solutions accompanying the intrusion of granitic rock. There are three recognized scheelite ore zones, being the central zone, the westerly zone and the easterly zone. The central zone is approximately 140 feet in width at its most prominent exposure, and the westerly zone is over 80 feet in width at its most prominent exposure. The easterly zone is badly covered with slide rock, and the extreme easterly part forming the easterly wall of the entire mineralized zone is the only part that is exposed to view at this time.

SAMPLING

A total of 13 tungsten trioxide determinations were made on samples taken from the deposit, and all of the determinations were made by Union Assay Office, Inc., Salt Lake City, Utah, with the following results, to-wit:

No. 1	0.140 %
No. 2	0.075 %
No. 3	0.825 %
No. 4	0.555 %
No. 5	0.160 %
No. 6	0.090 %
No. 7	0.500 %
No. 8	0.450 %
No. 9	2.270 %
No. 10	0.670 %
No. 11	0.190 %
No. 12	0.030 %
No. 13	3.900 %

The aforesaid samples were used as patterns to make preliminary estimates of the tungsten trioxide content in the remaining parts of the mineralized zone from which no samples were taken. An ultra-violet fluorescent lamp, a very large Mineralight, was used extensively in traversing the length and width of the deposit, and the Mineralight showed that the deposit contained a uniform distribution of scheelite mineralization over a large area, the like of which I have never examined during my extensive experience in the examination and sampling of scheelite properties. By the use of the Mineralight and the aforesaid assay results, I believe I was able to arrive at a fairly accurate estimate, as hereinabove stated, of the possible gross tonnage of ore averaging 0.25% to 0.50% WO_3 in this deposit.

MINERALIZATION

In my examination of this deposit, it was observed that a very small amount of powellite and iron pyrite were contained in the scheelite ore. The scheelite crystals appear to range in size from 1/32" to 1/4" and were well disseminated throughout the tactite rock. The scheelite crystals appear to be firm and I do not anticipate too much difficulty in making a high grade concentrate by gravity concentration when a mill is made available for processing the scheelite ore from this property. There is a small amount of garnet in the ore, and the molybdenum content does not appear excessive. A representative sample of high grade ore from this property was selected and sent to Union Assay Office, Inc., Salt Lake City, Utah, for tungsten trioxide and molybdenum assays, and the determinations were as follows, to-wit:

3.900 % WO_3
0.062 % Mo

From the said determinations it is observed that the ratio of tungsten trioxide (WO_3) to molybdenum (Mo) is around 62 to 1. This indicates that a ton of 60% WO_3 concentrates should contain not more than 1% Mo if said ratio is maintained throughout the deposit, and I have no reason to believe that such ratio will not occur.

TONNAGE AND VALUES

My examinations revealed that a very definite mineralized zone extends for a length of approximately 500 feet by 400 feet in width with adepth of at least 150 feet. It is my belief that this particular zone will produce by power shovel operation in open pit between 500,000 and 1,000,000 thons of scheelite ore containing between 0.25% and 0.50% WO_3 per ton. In making said tonnage estimate I have not given consideration to, or included therein, the probably tonnage of commercial scheelite ore in the areas of extension, both north and south, of this deposit. I have not stressed in this report the importance of the enriched lenses of scheelite ore, assaying 0.75% WO_3 or more, which occur at several places in the deposit which are amenable to underground mining methods. It is my belief that the deposit is topographically suited for power shovel operation in open pit and if the minimum grade of ore to be mined by power shovel in open pit is to be kept above 0.25% WO_3 then the enriched lenses will be needed to maintain a mill head assaying in excess of said minimum. Therefore, I do not recommend the exclusive mining of the high grade ores averaging 0.75% WO_3 or better and thereby spoiling such an excellent open pit operation.

DEVELOPMENT

It is my opinion that before any large scale development campaign is undertaken, that the deposit should be carefully surveyed and mapped. The mapping should indicate the large zones that are mill ore. The zones too low in value for milling should be properly marked in order that the pit operator will be able to mine selectively with power shovel, sending to waste dump the rock broken which will be below the minimum grade established for milling.

I agree with your proposed plan to construct a road with an upgrade of not more than 12½% to the bottom of the deposit as exposed on surface and thence a switch-back road of same grade from bottom to top of the deposit. The open cuts representing the roadway will expose at several horizons appreciable widths of the various zones of enrichment in the deposit as exposed on the surface but now covered with slide rock. In addition, the roadway will make almost any part of the deposit accessible. The slope of the hillside is approximately 30 degrees. Adits into the deposit, and diamond drill holes, will be easily driven from the roadway. Obviously, a deposit of the magnitude evidenced by the surface expusures of this deposit will require several thousand feet of adits, crosscuts and diamond drill holes in order to fully explore and prove or disprove the tonnage and grade of ore estimated in this report.

CONCLUSION

I believe that this deposit is worthy of the amount of development work recommended in this report and that such development work will prepare the deposit for subsequent large scale operations in open pit by power shovel methods. All recommendations made in this report are based upon the present price of tungsten trioxide created by the National need for this strategic mineral for defense purposes. My estimate of 500,000 to 1,000,000 tons of ore averaging 0.25% to 0.50% WO_3 is a very conservative one, and there is an excellent chance of developing several times this amount of ore when northerly and southerly extensions of this deposit are explored.

During World War II, I was employed by the Reconstruction Finance Corporation and Metals Reserve Company as Supervising Engineer, and during said time I purchased approximately 160,000 tons of tungsten ore and examined and visited many tungsten properties. I am convinced that the Monte Cristo tungsten deposit, as above described, is one of the largest known potential open pit tungsten mines in the State of Nevada.

Respectfully submitted,

/s/ Glenn G. Gentry

Glenn G. Gentry
Mining Engineer
P. O. Box 2518
Reno, Nevada

C
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RECONNAISSANCE REPORT

ON THE

MONTE CRISTO TUNGSTEN DEPOSIT

LOCATION:

The Monte Cristo Tungsten Deposit lies on the west slope of White Pine Mountain (formerly designated by the G.L.O., Pegonip Ridge), in the White Pine Range, White Pine Mining District, White Pine County, in east central Nevada, and with respect to the G.D.O. survey occurs chiefly in Sections 16, 21 and 28, Township 16 North, Range 57 East, M.D.B. & M.

It is approximately 52 miles by airline and 62 miles by road, west of Ely, the county seat and the center of an important mineral bearing area which, among other things, contains Nevada's most important copper mining activities. The area is served by U. S. Highways 6, 50 and 93 and by the Nevada Northern Railway, a feeder line which leaves the S.P.R.R. at Cobre, 140 miles to the north. To reach the Monte Cristo Tungsten Deposit from Ely, U. S. Highway 50 is traveled for 45 miles in a westerly direction, and from this point fair desert roads of generally easy grades wxtend into the Monte Cristo section which lies about 15 miles south of U. S. Highway 50. From the main desert road short roads extend into the canyons which dissect the deposit thus making large portions of it fairly accessible to motor vehicles.

PROPERTY:

The known portions of the deposit are covered by 34 contiguous unpatented lode mining claims of approximately 20 acres each which are owned and held as two contiguous groups of 16 and 18 claims respectively. Both of these properties, singly or collectively, are now available to prospective operators.

CLIMATE:

The climate is typical of the high altitudes of eastern Nevada, short pleasant summers followed by a brief fall season with the winter snow storms sometimes arriving as early as the middle of November. The winters are generally severe and the ground is covered with snow for at least four months of each year. The annual precipitation, chiefly snow, seldom exceeds 15 inches. The heaviest rain fall occurs during mid-summer and early fall. Sub-freezing temperature is the rule during the winter months. Occasional heavy snows during these months may be expected to interfere to some extent with mining operations.

VEGETATION:

Nearly fifty percent of the surface of the deposit consists of bare rock outcroppings and talus covered slopes and is barren of any vegetation. But in other parts of the deposit and in adjacent areas there is a considerable growth of stunted pinon pine, juniper and mountain mahogony trees with here and there small open grassy areas and occasionally small thickets of brush. On the lower slopes and at the base of White Pine Mountain desert sage and scattered juniper trees are the principal vegetable growths. The timber growth is cheifly valuable for domestic uses but some of it is also suitable for light mining operations.

ELEVATIONS:

The elevations at the deposit range from a minimum of around 72000 feet near the north end to nearly 8000 feet at the south end. The maximum elevation of 9015 is at a point on the ridge which divides Hoppe and Little fair canyons. The mean or average elevation of the deposit is approximately 8000 feet.

TOPOGRAPHY:

The surface of the deposit and its immediate vicinity is extremely rugged in character and consists chiefly of a series of short steep westerly trending canyons which head high up on the western slops of White Pine Mountain and drain into Newark Valley on the west.

The sides of the canyons are generally sttep and in places are characterized by the presence of small bluff-like outcroppings which are surrounded by talus covered slopes which generally culminate in rocky bluffs forming the narrow crests of the ridges lying between the canyons. The canyons range from 500 to over 1600 feet in depth and their slopes will often exceed 45°. Their floors have, in some instances, grades in excess of 600 feet to the mile.

WATER:

No water flows in any of the canyons excepting during a period of heavy rains. Two perennial springs occur in the immediate vicinity of the deposit. One of these, lying above and about one quarter mile east of the deposit in Hoppe Canyon at an elevation of 9100 feet is reported to have a flow of 15 gallons per minute. The other spring, known as the Monte Cristo Spring, lies at the base of White Pine Mountain about one quarter mile west of the deposit at an elevation of 7300 feet. It is reported to have an average flow of over 300 gallons per minute.

Other possible sources of water supply exist at Green's Ranch and in Newark Valley. At Green's Ranch, which is about six miles south of the deposit, there are several large springs, the water from one of which is reported to exceed in volume that of Monte Cristo Spring. The deposit lies near the southern end of Newark Valley which covers several hundred square miles and is the natural drainage basin of several mountain ranges. Its water table lies to the surface and there is every reason to believe that Newark Valley can be expected to be an unfailing source of water supply, when needed, for mining and milling operations of any magnitude.

HISTORY:

The western or Monte Cristo section of the White Pine Mining district, although less than six miles southwest of Hamilton section, has heretofore received little attention from geologists and mining men who have covered the Hamilton and adjoining areas. These areas were noted for their rich silver and silver-lead mines during the period 1867-1887 with a reported production of over $20,000,000.00 and during this period the prospecting of these areas must have been intense. But for some reason, possibly because of a difference in the rock formations, the Monte Cristo section was overlooked. Apparently the only exception to this was the mining operations carried on near the head of a gulch near Monte Cristo and which operations are reported to have produced $80,000.00 in gold from comparatively shallow workings in a quartz vein. The gulch referred to is now known as [illegible]000.00 Gulch.

In 1875-1876 a small matte - smelter was erected near Monte Cristo Spring to treat the ores of the Shermantown section which lies about six miles to the southeast of Monte Cristo. This smelter apparently never operated as is indicated by the condition of the flues and the complete absence of slag in the vicinity.

There is a dearth of published geological data on the Monte Cristo section. As far as is known to the writer none of the geologic papers listed in the bibliography of the Hamilton district have mentioned the Monte Cristo section. A brief mention of a contact-metamorphic zone at Monte Cristo is made by Francis Church Lincoln in "Mining Districts and Mineral Resources of Nevada", page 258.

The Monte Cristo Tungsten Deposit was discovered in June, 1939, and by the end of 1939, 34 lode mining claims covering all visible portions of the deposit had been located. Shortly after its discovery the writer made several visits to the deposit with a view of determining its economic possibilities. Later through the efforts of the writer the Goldfield Consolidated Mining Company entered the district and made, under the direction of Mr. Herbert N. Witt, their chief geologist, a partial examination of the deposit. This consisted of aerial surveying and mapping followed by the extensive use of fluorescent lights of surface outcroppings and this in turn followed by the cutting of numerous samples which were later tested for their economic minerals. In addition to the scheelite which was sought for mineral the tests revealed the presence of considerable powellite in the ore. The presence of this mineral in the deposit had hitherto been unsuspected, and although the tests apparently revealed the presence of scheelite in satisfactory quantities, Mr. Witt, due to the presence of the powellite, became fearful of an involved metallurgical problem in the treatment of the ore and abandoned all further investigation of the deposit.

At that time no process that would successfully separate powellite from scheelite existed, but since then a process has been developed and is now in successful use in the treatment of a similar ore being mined near Bishop, Calif.

GEOLOGY:

The country rock of the White Pine Mining District consists of Paleozic sediments which have been intruded by quartz-monzonite and granodiorite in late Cretaceous or early Tertiary time. According to Larsh a geologic section of the White Pine Mining District comprises over 15,000 feet of Paleozic rocks made up as follows:- Over 1,000 feet of Cambrian limestones and slates; 7,000 feet of Ordovician sediments, including Upper and Lower Pogonip limestones; Eureka Quartzite and Lone Mountain limestones; 2,000 feet of limestone of Devonian age; and 5,400 feet of Carboniferous sediments, including shale, sandstone and limestone.

Large areas of the White Pine Range are underlined by a batholithic mass of quartz-monzonite or its differentiates. In the Monte Cristo section the batholith is represented by a small stock of cupola composed of a quartzose granitoid rock which is undoubtedly a differentiate of the monzonite and which occurs as a small nearly conical peak, several hundred feet high, at the western base of White Pine Mountain. The peak borders a large contact metamorphic zone on the west and its position suggests that it is the termination of a spur or finger from the main batholith which lies at some distance to the southeast.

Although unexposed in other portions of the section the finger appears to trend and possibly dip to the southeast as is indicated by the degree of metamorphism of the overlying rocks and the tilted position of their strata which in some places appear as a low anticline dipping about 15° to the southeast.

The intrusion of the monzonite in the Monte Cristo area uplifted and metamorphosed the overlying sediments and those at the contact with the small stock forming a contact metamorphic zone of considerable extent which, owing to limited marginal exposures, makes the defining of its surficial area somewhat difficult. But the zone is roughly pear-shape in plan with its small end to the north. It has a visible strike length of over 10,000 feet with its long axis striking NW-SE. At its smaller or northern end it is approximately 125 feet wide. From this point its width progressively increases towards the south until at a point about 2,500 feet from its southern end it reaches a width of over 2,600 feet. From this point to its southern end it narrows and is finally obscured by the overlay limestone.

In but few places is the border or margin of the metamorphic zone clearly defined. Much of it is obscured by vegetation or by a mantle of talus. Where exposed, excepting in a few places, there is no sharp division between the metamorphic and sedimentary rocks, but rather a gradual transition from one to the other. But at its northern end the zone appears to split into pointed fingers that pass into or under the limestone.

Still on the west side of White Pine Mountain, to the east and northeast of the contact metamorphic zone, but separated from it by a wide belt of Pogonip limestone, is a large intrusion of granodiorite. With the exception of the stock on its western border there are no visible intrusive rocks within close proximity to the contact metamorphic zone. But on its eastern border considerable quartz-monzonite porphyry float occurs, indicating the nearby presence of dikes or sills of this rock.

PETROLOGY:

The surface of the contact zone can roughly be divided into areas according to the color of its rocks. Beginning near its northern end and coinciding with its long axis a strong belt of garnetized rock of irregular width extends almost to its southern end. This belt ranges in width from a few feet to over 500 feet and in color from a light rusty color to a rich dark brown, according to the degree of garnetization. On either side of the garnet belt but still within the borders of the contact zone the rocks range in color from a light gray to a deep greenish gray.

As a rule the garnet belt stands above the surrounding areas inbold relief, usually as blocky bluff-like masses with talus covered bases. The rocks are strongly jointed by two systems of joint planes which strike at near right angles to each other. And in the best developed of these systems the joint planes coincide with the long axis of the contact zone and have nearly vertical dip.

Excepting where completely garnetized the rocks of this belt consist chiefly of garnet, quartz, calcite and greenish mineral resembling chlorite with scheelite apparently the only ore mineral.

FAULTING:

Several faults in the contact zone were observed. None of these were given a close study by the writer as they have apparently had little influence on the formation of the ore deposit within the contact zone. The principal faults are pre-mineral and their fissures are generally occupied by quartz veins of little economic value. Minor folding or contorting with some slight overtrusting of the limestone strata occurs on a portion of the eastern border of the contact zone.

ORE DEPOSIT:

EXTENT: There is a strong possibility that the entire visible contact metamorphic zone may be an ore deposit. This belief is based on the results obtained from sampling and other investigations of various portions of the zone. These investigations, though far from covering in detail all portions of the zone, revealed the presence of scheelite and powellite over large areas. Probably a thoroughly systematic sampling would reveal other areas that were subcommercial or barren. A systematic sampling of the entire zone is beyond the means of property owners. Over 200 samples cut by the claim owners and possibly that many more cut by the Goldfield Consolidated Mining Company together with the widespread use of fluorescent lights have failed to reveal any large portion of the contact zone that was baren of scheelite and/or powellite.

ORE MINERALS: The ore mineralization or enrichment, as in most contact-metamorphic deposits where little or no secondary concentration has taken place, is erratic, and while dissemination of the ore minerals in general, local concentrations appear to be the rule. This was indicated by the use of fluorescent light rather than by sampling. Through this method the enrichment was frequently shown to occur in strong zones of varying width and strike length.

Within these zones there is generally considerable uniformity in the distribution of the ore minerals, but occasionally the enrichment also appears as highly concentrated parallel streaks or narrow belts within the zones. Some of these belts are up to four feet in width.

Towards the northern end of the deposit in an area of good exposures an enrichment zone over 100 feet in width occurs. Sampling of this zone has revealed a WO_3 content of over 1% for the zone with one belt near the middle of the zone running from 3% to 8% WO_3.

It is noticeable that in these zones of enrichment quartz is the predominant mineral and occurs chiefly as granular quartz; in seams or veinlets or, in irregular masses. The scheelite appears to be associated with the quartz and the higher the quartz content in the ore the greater the scheelite content.

Scheelite (calcium tungstate), contains 80.6% tungsten trioxide and 19.4% lime. It occurs in the ore as individual crystals, crystalline aggregates, and in small granular masses. Its color is a pale, grayish white to nearly transparent, closely resembling the quartz in this respect. The scheelite crystals are generally quite small in size ranging from less than 1/16 inch to slightly over 1/8 inch in diameter. Their size and color make them practically indistinguishable, without the aid of fluorescent light, from the granular quartz crystals.

Powellite (calcium molybdate) contains when pure, according to its formula $Ca\ Mo\ O_4$, 47.9% molybdenum and 52.1% lime. But powellite from many sources has been found to carry from 10% to 12% tungsten trioxide which is believed by

many authorities to be present as scheelite and in a mechanical mixture rather than a chemical compound.

The powellite appears to be an oxidation product of the primary sulphide molybdenite and it occurs in the ore of the deposit as a grayish white powdery mineral occupying minute seams or as a coating of the scheelite. This mineral cannot be distinguished in the ore by the unaided eye but can easily be detected in the ore concentrates through the use of fluorescent light or by analysis.

The Monte Cristo contact metamorphic zone consists chiefly of limestones altered to tactite by solutions accompanying the intrusion of a granitic rock. The scheelite-powellite deposits within the zone are of the replacement type, yet, are apparently singularly free of the undesirable mineral elements ordinarily present in minerals of the contact-metamorphic deposits. The ore, in consequence, does not contain serious amounts of copper or iron pyrites. No phosphorous mineral is known to be present, and molybdenum occurs in the powellite only. Some manganese oxides are found in association with the few quartz veins occuring within the zone.

SAMPLING: The deposit has not been systematically sampled. This task is beyond the means of the present owners who have to date cut about 200 samples in various parts of the deposit, chiefly with a view to determining the extent of the ore mineralization. And, as before mentioned, the Goldfield Consolidated Mining Company cut a considerable number of samples over a large portion of the deposit. As far as is known to the writer, few if any of these samples were barren of scheelite or powellite.

To date the tests of the samples taken have revealed their WO_3 content to be from .2% to over 6%, with an average of .6% for all of the samples. These figures do not include the WO_3 content of the powellite. This mineral occurs in varying amounts and generally exceeds the scheelite in the ore in the ratio of at least 2 to 1.

The sampling, although of a reconnaissance nature only, has indicated a wide spread, though erratic, distribution of the scheelite throughout the contact metamorphic zone and leads to the belief in the possibility of the existence of a huge low grade commercial ore deposit embracing most if not all of the zone. But the writer is more inclined to the belief that a thorough investigation of the deposit would result in the discovery of certain large areas bearing ores of a grade much higher than the average indicated for the whole contact zone. In mining these areas, selective mining would, in a sense, be employed.

MASS OR VOLUME OF THE ORE DEPOSIT: Until it is definitely determined by a thorough sampling and by other investigations such as core drilling or exploratory mining operations the mass or volume of the commercial ore body or bodies lying within the contact metamorphic zone cannot even be estimated, but on the assumption that the entire zone constitutes a workable low grade ore deposit its mass or volume is indicated by the following calculations:- A base line established at the lowest point in the deepest canyon dissecting the contact metamorphic zone and coinciding with the long axis of the zone has a length of over 10,000 feet. The average width of the zone exceeds 1,000 feet and the average vertical depth from the surface to the base line exceeds 600 feet. This presents a deeply serrated figure from which is deducted two-thirds of the mass of a regular solid of similar dimensions, giving a rock mass over 166,000,000 tons above the base line. The ore mineralization extends to an unknown depth below the base line but until this horizon is investigated no estimate of volume can be made.

In the above tonnage estimates only the rock mass within the tactitic area of the contact metamorphic zone was considered. The enclosing zone which at best is poorly defined and is thought to be barren was not included. The dimensions given for the above tonnage estimates were based on the sampling elsewhere mentioned in this report and which indicates a general though erratic scheelite enrichment within the area. Whether or not the entire rock mass is similarly enriched remains to be seen. In this connection one interesting fact is offered. Sampling the rocks exposed in the bottoms of the canyons has revealed no apparent change in the grade of enrichment between them and the rocks of the tops of the highest ridges.

Although as yet unproven, there is a bare possibility that the entire rock mass referred to constitutes an ore deposit of commercial grade, and, that, although possible, the writer believes this to be unlikely and holds to the belief previously expressed that a thorough investigation of the deposit is more likely to reveal it as consisting of a number of unconnected and erratically distributed deposits, some of which may be of large volume, surrounded by areas carrying ore of sub-commercial grade.

PLANS AND COSTS OF INVESTIGATION: It is advisory to divide this work into two stages with the execution of the second stage contingent on the results obtained from the first stage of the investigation. The preliminary or first stage to consist of the usual checking of claim lines, titles, physical conditions, etc., followed by a careful examination of the surface with fluorescent lights to determine the character, extent and grade of the scheelite mineralization; the richer zones to be indicated for later sampling. This to be followed by the sampling and assaying of the ore of these zones and the results obtained plotted on a sample map or chart. If the results obtained from this sampling were satisfactory then stage No. Two would naturally follow. The cost of the first stage of the investigation would range between $3,000.00 and $5,000.00 and would consume a period of about ninety days time.

The Second Stage of the investigation would cover the sampling of other portions of the deposit as indicated by the fluorescent light. Areas showing satisfactory results would then be subjected to sub-surface exploration by core drilling, tunneling, corscutting of shaft sinking as deemed expedient, followed by a thorough sampling of all exposed faces.

The cost of this stage of the investigation would approximate $100,000.00 and would consume approximately one year's time. Not all of the contact metamorphic zone could be investigated as outlined for the above amount. The subsurface investigation would naturally be confined to the most favorable areas and areas with unfavorable surface showings would largely be eliminated from this class of investigation. The writer believes that well within the cost and time limits as set forth several commercial ore bodies large enough to warrant the initiation of plans for extensive mining and milling operations would be delineated.

WORKING METHODS AND COSTS: A large portion of the deposit is ideally situated for cheap, large scale mining operations, using open pit or quarrying mining methods. If necessary, mining operations could be carried on simultaneously in all of the five canyons that that dissect the contact metamorphic zone. Short down grade hauls from these canyons to a mill centrally located at Monte Cristo Spring are of considerable importance in any plan of economic operations.

On the basis of a production of 500 tons daily the mining, milling and hauling costs should not exceed $3.00 per ton. With a larger daily production the costs would necessarily be lower. The costs are segregated as follows:

Mining $0.50; Hauling to be done by trucks, $0.25 per ton; Milling and marketing, $2.25 per ton.

FINANCIAL ASPECTS: The ore bodies within the tactitic area are probably large and may be expected to sustain long term mining and milling operations. It is believed that some of these ore bodies will average as much as 1% WO_3 per ton, while other smaller bodies will run as high as 3% WO_3 per ton. But using .5% WO_3 as the minimum grade of ore that can be worked at a profit (on the basis of 500 tons per day), with reasonably efficient concentrating methods, the recovery should not be less than 80%, or 8 lbs., of WO_3 per ton of ore treated.

At the present market price of $22.00 per unit of 20 lbs. the recovered WO_3 would have a value of $8.80. From this amount is deducted the operating costs of $3.00 per ton, leaving a net of $5.80 per ton. Further deductions in the form of overhead, taxes, etc. are to be made. But in view of the rapidly changing tax structure the writer has not attempted to fix these charges.

CONCLUSION: While the extent and quality of the Monte Cristo tungsten deposit are not as yet unknown it has the possibility of becoming the largest commercial deposit of its kind in the U. S. In size compares favorably with any of the porphyry copper deposits or the Climax Molydenite deposit. In the event an investigation shows it to be commercial the capital putting it over would be in a leading position in the tungsten markets of the U. S. The deposit is undoubtedly worth of at least a good preliminary investigation.

In fixing the minimum tungsten trioxide content of the ore at .5% only the mineral scheelite was considered as the source of this. Its associated mineral, powellite, through the contained tungsten trioxide and molybednum, would add considerably to the net value of the ore.

Respectfully submitted,

/s/ JOS. G. O'BRIEN
Mining Engineer
Box 968
Ely, Nevada

Sept. 15, 1941.

REPORT OF PRELIMINARY INSPECTION TRIP AND
PRELIMINARY LABORATORY TESTS

MONTE CRISTO TUNGSTEN DEPOSIT

January 24, 1951

On January 10, 1951, H. B. Chessher, Glenn Gentry, J. R. Murphy; and H. L. Hazen arrived on the Monte Cristo Tungsten property about 3:30 in the afternoon. We walked over the outcrop of the tungsten bearing rock that I considered a lime schist. The name of Tactite has been given by Larsh to this type of formation. The original locator, J. R. Murphy, showed us the outcrop area that he said was all mineralized with scheelite.

The formation was on edge and the strata were exposed across the strike of the formation. It has been partially eroded and the hillside had almost the slope of rest. The gulley at the bottom of the slope is most probably on a fault plane. We went over the mineralized area first during daylight, and could see scheelite fluoresce only when the rock inspected was covered with a blanket to exclude the light.

Only two small adits have been started into this formation, each going into the hill about 10 feet. At the top of the formation Murphy sank a shaft down a short distance that I guessed was also about 10 feet. The lower adit is only a short distance above the bottom of the gulley. The upper adit was near the shaft at the top of the mineralized area and I guessed about 600 feet up the hill side.

During the daylight, and without use of the mineralight, H. B. Chessher and I cut two samples from the face of the lower adit across a distance of about 6 feet. The rock here was obviously low grade when inspected under a blanket with a mineralight. Then Glenn Gentry and I cut two samples across the face of the upper adit across 70 inches. Under the blanket this appeared to be good ores.

ANALYSIS Of samples by Union Assay Office, Inc.

No. MC 1 Across 6 ft. of the face of lower adit near floor.....0.140% WO_3
No. MC 2 Across 6 ft. of the face of lower adit about 5 ft. above floor ....0.075% WO_3
No. MC 3 Across 70 inches of the face of upper adit near floor ....0.625% WO_3
No. MC 4 Across 70 inches of the face of upper adit five feet above floor.....0.555% WO_3

After darkness fell (the wind was blowing and it was snowing a little) we spent two hours walking slowly back and forth across the mineralized area inspecting all of the rock with mineral lamps. Some of the strata was much higher grade than the average, but the entire area was mineralized. Murphy told us that the measured exposure that we were inspecting was 400 feet wide and 600 feet high. I could well believe it.

After returning to the laboratory in Virginia City we made sink-float tests on portions of sample No. 4. These tests showed, under a mineralight, that it would be impossible to obtain a concentration of the tungsten at any size that could be treated by the sink-float system. The rock is well garnetized. It is very heavy, and half of the ore sank in pure acetylene tetra-bromide with a specific gravity of 2.988. But the mineralight showed that the float contained just as much scheelite as was contained in the sink.

We next made sink-float tests on a portion of sample No. 2. I though it possible that such a low grade material might float on a liquid in which ore as

good as sample No. 4 would sink. The tests on sample No. 2 in pure acetylene tetra-bromide also gave an even split of the sample at a specific gravity of 2.968 and the sink contained just as much scheelite as did the float.

The above tests proved to my satisfaction that sink-float would be of no value in the treatment of this ore.

We then started panning tests on portions of Sample No. 4. We found that the scheelite crystals did not crush free from the gangue until the ore was ground to pass a 40 mesh screen. We then carefully ground a portion of sample No. 4 to passa 40 mesh screen and panned it very roughly, trying to produce a low tail rather than a good concentrate. After the first panning was completed we panned the first tailing again, producing a second pan concentrate. During this work we slopped over a "slime" product which was quite coarse and which settled and filtered very rapidly.

The results of this panning were assayed by Union Assay Office, Inc., with the following results:

Product	Weight %	% WO_3	% Content WO_3
1st Concentrate	16.01	2.27	70.48
2nd concentrate	8.25	0.67	10.67
Sand Tail	46.92	0.19	17.28
Slime Tail	28.82	0.03	1.56

Head - Sample #4
Assay Head

I feel that the following probabilities are indicated by the preliminary tests:

1. This ore must be ground to pass 40 mesh before it can be concentrated.

2. This ore should be first concentrated over tables at 40 mesh. The slime tail would be very low grade and should be discarded. The sand tail should be re-ground and concentrated.

But if an ore deposit is established in the area and the Government will purchase tungsten ore as during the last War, I would judge that shipping ore could be mined directly from this deposit and a large profit obtained with a minimum capital investment.

Respectfully submitted

H. L. Hazen, Mining Engineer
P. O. Box 128
Carson City, Nevada

May 1, 1951

Mr. H. B. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg., P. O. Box 889
Reno, Nevada

Dear Sir:

On April 25, 1951, I spent the afternoon and evening with you and J. R. Murphy at the Monte Cristo tungsten mine situated on the westerly side of White Pine Mountain in the White Pine Mining District, White Pine County, Nevada. My job was to assist you in the sampling and to carefully observe and study the character of the rock and to form my opinion of the difficulties that might be encountered in the driving of a horizontal tunnel 8' wide by 10' high for 300 feet into the hillside by following the richest scheelite band now exposed in the central part of the main scheelite deposit on the north side of Cabin Gulch.

We cut nine (9) samples during daylight with moils and single jack and during said operations I studied carefully the character of the rock and its amenability to standard drilling methods. It is my opinion that five good miners will be able to drill, shoot and muck out two rounds per eight hour day, each round to be six feet long by eight feet wide by ten feet high, and that unless loose fault zones or loose fractured zones are encountered as the tunnel work progresses, no timbering will be necessary except perhaps at the portal.

The opinion above expressed is conditional upon the property being supplied with the following machinery, equipment, tools, supplies, etc., to-wit:

1 - Eimco Finlay loader (mucking machine), Model 12-B.
1 - Joy Hydro Drill Jib (2 drill Jumbo)
3 - I-R DA 35 Automatic Drifters
12 - Timken tungsten carbide bits (1-3/4" & 1-5/8")
1200 - feet of 35 lb. rail with fishplates, cross ties and spikes for laying two tracks into said 300' tunnel
6 - Ore cars - side dump, each 20 cu. ft. capacity
1 - 500 cubic foot compressor driven by diesel or gasoline engine
1 - air fan with engine to drive same and 400 ft. of 12" air vent pipe for sucking out air
1 - air receiver of large dimensions
1 - water pressure tank
1 - fuel tank

and an adequate supply of water, drilling steel, powder, fuse, caps, carbide, air hose, fuel, timbers, lube oils, greases, wrenches, shovel, picks, double and single jacks, and such other tools, supplies, machinery and equipment as are customarily and necessarily used and needed on a tunnel job of this size.

The five miners using the equipment above described should be able to drive the 300 feet in thirty (30) days of actual working time providing they average a minimum of ten feet in length each 8 hour day. I estimate the total ore to be mined and the gross value thereof to be as follow, to-wit:

The tunnel 300' by 8' wide by 10' high equals 24,000 cubic feet and when divided by 12 cubic feet for each ton of ore in place equals 2000 tons of ore, and if the ore will average 0.50% WO_3 such will equal 1000 units of WO_3, and if the Government will pay $63.00 per unit less 15% for loss in tails while being milled and if the Government will charge $10.00 per ton for handling, transporting and milling the crude ore, the gross value of the ore mined from said tunnel should be:

2000 tons x 0.50% WO_3 equals 1000 units x $63 per unit x 85% less $20,000.00 (2000 x $10 for Government charge) equals...$33,550.00

and it is my belief that the total operating costs can be kept within the following estimates, to-wit:

Mining costs---2000 tons at $4.00 per ton	$ 8,000.00
Royalty charge --2000 tons at $1.00 per ton	$ 2,000.00
Overhead charge--2000 tons at $1.00 per ton.....	$ 2,000.00
Trucking charge--2000 tons at $4.00 per ton.....	$ 8,000.00
TOTAL OPERATING COSTS.....	$20,000.00

The operating profit (before rental costs for such equipment as may be rented for the first 500' of tunnel, and before taxes, depreciation and depletion) during said thirty days of operating time is estimated to be ($33,550.00 minus $20,000.00) $13,550.00. If the first 300' of tunnel project works out as above outlined, or reasonably close to the estimates made, then it is my belief that additional tunnel projects should be spotted and driven at strategic places in the mineralized scheelite ore zone for the purpose of systematically blocking out ore reserves that will be measureable with a greater degree of safety than if diamond drill holes are used for such purposes. Furthermore, the tunnels will provide your engineers with a better picture of the formations and geological conditions than will be the case if you develop the property by use of diamond drill holes.

I believe that my costs hereinabove are conservatively made, and that $4.00 per ton will cover the costs of all labor and supplies used in the mining operation. For instance, five men working on a labor contract at $1.50 per ton or at $10.00 per foot in length will earn $24.00 per day if they drive 12' in length in a tunnel 8' wide by 10' high. This amounts to $120.00 for labor and leaves ($320 minus $120) $200.00 per day for supplies during each day that 12 feet of tunnel is driven and from which 80 tons of ore should be removed. You assure me that $1.00 royalty charge is sufficient under your agreement with the owners. The trucking rate of $4.00 is adequate, in my opinion, because the trucking distance from mine to Ely, Nevada, is 60 miles, being 15 miles over dirt road and 45 miles over Highway 50, equal to 6-2/3¢ per ton mile.

Yours very truly,

Glenn Eastham
Foreman, Chesco Mine at Aurora
P. O. Box BB-7, Hawthorne, Nevada

Mr. George W. Snyder, Jr.
United Minerals Corp.
518 Felt Building
Salt Lake City, Utah

Subject: DMEA-2645
Re: Exploration Assistance
Monte Cristo Tungsten Mine
August 12, 1952

My dear Mr. Snyder:

The receipt of your application dated July 31, 1952, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-2645 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2645 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Chief, Operation's Control
and Statistics Division

25451

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. DMEA-1645

Date received 8-11-52

Participation

UNITED MINERALS CORP.
518 FELT BUILDING
SALT LAKE CITY, UTAH

Name and address of applicant

Date JULY 31, 1952

FILL IN THIS BLOCK

Date of application JULY 31, 1952

Estimated cost 34,500.00

Mineral or metal TUNGSTEN

Percentage of Government participation 75%

Location of mine HAMILTON MINING DISTRICT, WHITE PINE COUNTY, NEVADA

Date of filing MF-100 In process

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)?

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 11 1952

*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.

UNITED MINERALS CORPORATION
(Name of company)

By George W. Snyder Jr.
(Signature of authorized official)

JULY 31, 1952
(Date)

PRESIDENT
(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

June 13, 1952

Mr. O. C. Mittendorf, Administrator
U. S. Department of the Interior
Defense Minerals Exploration Admin.
18th and C Streets
Washington, D. C.

Dear Mr. Mittendorf:

We submit herewith application for exploration project contract on the Monte Cristo Tungsten Mine, White Pine County, Nevada, in accordance with the Defense Production Act of 1950. Attached hereto, please find executed copy of Form MF-103. In conformance with the numbering system on Form MF-103, which form bears the date of April 1951, we submit the following information:

1. Applicant is a corporation validly existing under the laws of the State of Nevada.

2. Does not apply.

3.

President and Director	- George W. Snyder, Jr.,	518 Felt Building Salt Lake City 1, Utah
V. Pres. & Dir.	- Harold A. Covey,	" " " "
V. Pres. & Dir.	- Mason W. Rankin,	708 Harrison Avenue Helena, Montana
V. Pres. & Dir.	- George W. Snyder,	218 Felt Building Salt Lake City 1, Utah
V. Pres. & Dir.	- N. C. Orton,	231 So. LaSalle St. Chicago 4, Illinois
Secretary-Treasurer	- Guy Snyder	218 Felt Building Salt Lake City, Utah

The above, with the exception of Mr. Guy Snyder, are the largest stockholders of the corporation.

4. Historical Background of Principal Officers and Directors:

Mr. George W. Snyder, Jr., Director and President of the Corporation, has been active in mining, oil, and airline enterprises in the Intermountain Region for the past fourteen years. He served as President and Chairman of the Board of Challenger Airlines Company and its predecessor from 1945 until 1948 and was one of the organizers of this concern. He has operated numerous mining and oil properties since this period.

Mr. Harold A. Covey, Director and Vice President of the Corporation, is an experienced Mining Engineer having been employed for six years with the Triumph Mining Company, located in Big Wood River region of Blaine County, Idaho, one of Idaho's leading lead-zinc-silver producers. He resigned from his position as Chief Engineer with them in 1945. Prior to that time, Mr. Covey served as Engineer for Snyder Mines, Inc., in Salt Lake City and at Mercer, Utah. He has

actively engaged in mining since 1937, when he operated a lease in the Alta Mining District, Utah. His other interests are as a principal stockholder and partner in the Covey Investment Company and the Covey Gas and Oil Company, respectively.

Mr. Mason W. Rankin, Director and Vice President of the Corporation, is an experienced Mining Geologist. He has actively engaged in supervising geological examinations and mine operations in Western United States since 1936, having served as Chief Geologist for the Triumph Mining Company from 1939 to 1942, when he entered the employment of the American Smelting and Refining Company as a Geologist and Engineer. He served in this capacity until February, 1949, at which time he resigned to devote closer personal attention to the active direction of affairs of this Corporation.

Mr. George W. Snyder, Director and Vice President of the Corporation, has been engaged in the Mining Industry in the Intermountain Territory for a period of thirty five years, and has successfully developed numerous major mining operations. He is an Officer and/or Director of fourteen mining companies, several of which are large-scale producers of gold-silver-lead-zinc and copper ores. His services are available to the Corporation as Consultant and Advisor.

Mr. Harvey C. Orton, Director and Vice President of the Corporation, is an experienced corporation executive. He was actively engaged in an executive capacity in the acquisition and management of public utilities, electric, gas and transportation for many years until January, 1935. Since that time he has been interested in a major way as an owner, consultant or foreign fields. His capacity with the Corporation will be chiefly in financial matters.

5. The property was acquired by assignment under lease and option from the lease and option holder, Mr. H. B. Chessher of Reno, Nevada. The property is owned by J. R. Murphy et al of Ely, Nevada, who leased the property to Mr. Chessher who in turn assigned the lease as above.

6. The property owners advise that there are no liens or encumbrances against same.

7. A copy of the basic lease and option and assignment of said lease and option are attached hereto as exhibit A. Also attached hereto as exhibit A, please find executed copy of the Landlord's Subordination Agreement.

8. A copy of the last financial statement of the company is attached hereto as exhibit B.

9. Applicant submits that they are willing and prepared to furnish 25% of the funds needed for the project.

10. a. Property consists of 12 contiguous unpatented lode mining claims, situated in Cabin Gulch in the White Pine Mining District, White Pine County, Nevada, and which property is generally known locally as the Monte Cristo Tungsten Mine.

b. The principal site of operations will be on the Cabin Gulch, Cabin Gulch No. 1, Cabin Gulch No. 2, Cabin Gulch No. 3 and Cabin Gulch No. 4 claims. Development responses may indicate the desirability of extending the exploration operation on to the other claims. A claim map of the property is attached hereto as exhibit C.

11. The property was initially located in the name of J. R. Murphy, D. B. Murphy and Patrick Murphy, herein referred to as J. R. Murphy et al. Initial location was made about 1939. Annual assessment as required has been accomplished each year to date. The property has been locally known as Monte Cristo Tungsten Mine property for a period of several years.

12. The property is located approximately 60 miles south and west of Ely, Nevada and is reached by traveling the surfaced highway between Ely and Eureka to a point 45 miles west of Ely where a turn off is made onto an unimproved county road leading to Duckwater, Nevada. This road is followed to the south a distance of 13 miles whereafter a turn is made to the east up Cabin Gulch. The access road is plainly marked by signs. The nearest railroad is located at Ely, Nevada. Company believes that haulage will presently be by truck from the mine to any of three milling points, depending upon grade and character of ore encountered. These milling points are namely Cherry Creek, Nevada, Pioche, Nevada and Bishop, California, a distance respectively of 110 miles, 190 miles and 260 miles. All surfaced roads are passable year around. Severe mud conditions, however, prevail on the county roads during the early spring months, and stockpiling of ore will probably be necessary.

13. Adequate water for mining operations and camp supply is available the year around from the Monte Cristo spring situated approximately 2 miles to the south. The owner of the water rights on this spring has indicated his willingness to permit the use of this water for mining operations at nominal cost. In the event development responses indicate that a milling operation is advisable on the property, a supply of water estimated at from 2 to 3 hundred gallons a minute from this spring would be available to the company. Detailed questioning of local residents reveals that this water supply is permanent at all seasons. Applicant believes that the supply is adequate for all purposes herein considered. All power will be furnished by stationary diesel units. Present diesel oil cost in the vicinity is approximately 21¢ per gallon.

14. There are three small housing structures on the property which are adequate during preliminary stages of development work. There are no other usable structures, facilities or equipment on the property.

15. As indicated in paragraph 12, the ore would be shipped by truck with the following estimated total haulage cost: a. To Cherry Creek, Nevada, $5.75 per ton. b. To Pioche, Nevada, $8.25 per ton. c. To Bishop, California, $12.50 per ton.

Milling facilities at each installation vary. Detailed metallurgical tests are now being conducted to establish recovery rates and impurity content. Applicant believes that ore presently being mined and stockpiled can be shipped to any of the above milling plants, providing a grade of .6% WO_3 can be maintained. Detailed sampling of area exposed by new road construction and of all potential work faces indicate that this grade can be maintained.

Milling procedures in general at the Cherry Creek plant consists of jigging, tabling and flotation. The presently contemplated facilities at Pioche, Nevada, will consist of the same as the Cherry Creek Mill with the addition of a leaching unit. Applicant has no definite advise on the status of announced plans for the operation of the Pioche unit. Complete tungsten treatment facilities are available at the Bishop, California plant of the United States Vanadium Corporation and applicant has used their schedule throughout the economic studies.

16. A total previous development on the property has consisted of very limited pit and bulldozer cuts and applicant has only recently completed construction of a road to the site of projected mining operations. This road has exposed the ore zone in at least four places. Applicant has no knowledge of actual production from the property, but has been advised that a very small shipment of high grade ore was made during the last war.

The general area in Nevada presently includes at least three small tungsten producers and numerous properties are now undergoing exploration and development.

Attached hereto as exhibit D are the reports on the property furnished by the previous owners.

17. Preparatory work is now near completion and applicant believes that by June 15, 1962, approximately 30 tons per day of ore averaging a .6% WO_3 will be produced. Mining operations are on a contract basis at a total cost of $6.00 per ton. Net values depend upon final milling arrangements consummated. The present knowledge of the company indicated the net value of this grade of ore before mining costs or truck haul to be approximately $22.00.

18. The ore deposit occurs in a garnetized-tactite zone in the general region of a limestone-granite contact. The material is very highly silicified and occurs in a bedding dipping approximately 10 degrees to the west and with considerable folding present. Small amounts of chalcopyrite occuring in the zone are not considered to be of economic importance. The principal zone varies from eight to 40 feet in width and present exposures indicate its continuity for more than 300 feet along the strike of the mineralized bedding. Vertical exposures are not well established because of variation in width and grade. A minimum of 100 feet in depth is indicated with no apparent material change in values.

B. Attached hereto as exhibit C are all available maps and assay data.

C. Applicant presently believes that at least ten thousand tons of material expected to average approximately .6% WO_3 is now in sight.

19. The very limited amount of development thus far accomplished on the property does not reveal sufficient data to properly establish its merits. Applicant proposes the performance of the development work outlined in this application to ascertain the presence of additional reserves, to explore fully the longitudinal and vertical extensions of the ore zones and to evaluate grade and character of the ore.

20. Exploration will be conducted toward the development of substantial tungsten production. The known values occur as fine grained Sheelite crystals disseminated throughout the mineralized zone. The Scheelite contained is the only known material of economic value on the property.

21. Applicant proposes to explore the property with ten diamond drill holes aggregating three thousand feet at various locations established to delineate the vertical and lateral extensions of the principal ore body, as well as to explore the paralleling beddings exposed by the recent road work. Applicant further proposes to perform an additional four hundred feet of trenching along the lateral extensions of the ore exposures recently established. Applicant

proposes finally to drift horizontally 200 feet in the ore zone toward the north from the site of the lowest pit on the north side of Cabin Gulch. Applicant agrees that the above outlined work can be concluded within twelve months of starting date.

22. The amount of ore exposed by the limited amount of development work thus far accomplished, along with the favorable geologic conditions prevailing and the uniformity of opinions furnished by the company's and independent engineers makes it desirable for the company to undertake the herein described development project.

23. a. All work proposed will be performed on a contract basis as follows:

Three thousand feet of diamond drilling @ $6.50/ft.	$19,500.00
Four hundred hours of bulldozer trenching & road building @ $12.00/hr (Includes all compressor & roadwork costs)	4,800.00
Two hundred feet of drifting and cross cutting @ $30.00/ft. (Includes all labor & supplies)	6,000.00
Supervision (7 mo. active @ $500/mo.)	3,500.00
Accounting (7 mos. @ $100/mo.)	700.00
	$34,500.00

b. Supervision (see above)
c. None
d. None
e. None
f. All operations will be on contract basis as specified under para. (a) above
g. None
h. None
i. Included in contract costs.

24. Performance schedule will vary according to starting date. Assuming a start in July, the following schedule can be met.

	Total Cost	Diamond Drilling	Bulldozer Work	Drift & Crosscutting
July, 1952	4,400.00	400'	100 hours	--
Aug. 1952	6,550.00	500'	100 hours	50'
Sept. 1952	6,550.00	500'	100 hours	50'
Oct. 1952	6,550.00	500'	100 hours	50'
Nov. 1952	5,350.00	500'	--	50'
Dec. 1952	---	--	--	
Jan. 1953	---	--	--	
Feb. 1953	---	--	--	
Mar. 1953	---	--	--	
Apr. 1953	---	--	--	
May 1953	2,550.00	300'	--	
June 1953	2,550.00	300'	--	
TOTALS *	$34,500.00	3,000 ft.	400 hours	200 feet

* Supervision, engineering, geology and accounting included.

Respectfully submitted,

UNITED MINERALS CORPORATION

George W. Snyder Jr.

George W. Snyder, Jr., President

EXHIBIT "A"

COPY

LEASE AND OPTION AGREEMENT

THIS AGREEMENT, made this the 4th day of June, 1951, by and between JAMES R. MURPHY, a single man, and D. B. MURPHY, sometimes known as BERT MURPHY, and his wife, SYLVIA E. MURPHY, the business address of each being P. O. Box 524, Ely, Nevada, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and H. B. CHESSHER and JANE E. CHESSHER, respectively husband and wife, residents of the State of Nevada, the business address of each being 422 Gazette Bldg., P. O. Box 889, Reno, Nevada, parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: That SELLERS, in consideration of the sum of Ten Dollars ($10.00) lawful money of the United States of America, to them in hand paid by BUYERS, the receipt whereof SELLERS hereby acknowledge, and in further consideration of the covenants and agreements hereinafter contained, upon the part of BUYERS to be kept and performed, do by these presents contract, covenant and agree to grant, bargain, sell, remise, release and forever quitclaim unto the BUYERS, and to their heirs, successors and assigns, for the purchase price sum of Fifty Thousand Dollars ($50,000.00), payable in manner and way hereinafter designated, all of those certain twelve (12) unpatented lode mining claims, commonly known and referred to as the Monte Cristo tungsten mine, situated on the westerly side of White Pine Mountain in Township 16 North, Range 57 East, M.D.B.M., in the White Pine Mining District, in the Westerly part of White Pine County, State of Nevada, named, located and described as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE)	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128 1	355
CABIN GULCH SIDELINE NO. 2 (Also called SIDELINE NO. 2)	128	356

and all of aforesaid twelve (12) unpatented lode mining claims are owned by SELLERS and are held by right of good and valid locations, and are free and clear of liens and/or incumbrances, except title is held subject to the paramount title of the United States of America.

SELLERS covenant and agree that the aforesaid twelve (12) unpatented lode mining claims are free and clear of any liens and incumbrances and adverse claims of any kind and character, and that SELLERS will promptly warrant and defend title to the said twelve (12) unpatented lode mining claims to the BUYERS against all claims and demands of any and all persons, firms and/or corporation, subject to the paramount title to said claims being held by the United States of America.

SELLERS agree that if the payments, hereinafter designated, are paid by BUYERS to SELLERS within the time or times and in the manner and way herein this agreement provides, then BUYERS, their heirs, successors or assigns are to have and to hold, all and singular, the said twelve (12) unpatented lode mining claims, together with the appurtenances and privileges incident thereto, FOREVER.

SELLERS agree that the said purchase price sum of Fifty Thousand Dollars ($50,000.00), named in the second (2nd) paragraph on Page One (1) of this agreement, shall be payable to SELLERS at the time or times, and in the manner and way as follows, to-wit:

$ 200.00 previously has been paid to SELLERS on January 1, 1951;
$2300.00 shall be paid on or before June 15, 1951; AND
$2500.00 shall be paid on or before January 1, 1953; AND
$2500.00 shall be paid on or before January 1, 1954; AND
$2500.00 shall be paid on or before January 1, 1955; AND
$ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 80 consecutive calendar months until the total purchase price sum of $50,000.00 shall have been paid to SELLERS: it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

SELLERS agree tha simultaneously with the receipt from BUYERS of the said payment of $2,300.00 due hereunder on or before June 15, 1951, SELLERS immediately will execute and deliver in escrow in the First National Bank, of Ely, Nevada, a good and sufficient mining deed conveying to BUYERS, or to their order, good and merchantable title to said twelve (12) unpatented lode mining claims; the signatures of SELLERS to said deed to be properly acknowledged before, and attested by, a Notary Public, and said deed is to embrace all of the warranties and covenants herein this agreement contained, and said Bank is to promptly deliver said deed to BUYERS, or their order, upon its receipt of the final payment due SELLERS hereunder upon said Fifty Thousand Dollar ($50,000.00) purchase price.

SELLERS agree that all royalties paid SELLERS under this agreement shall be applied as, and credited upon, the next monthly or annual payment orpayments to become due hereunder upon, and as a part of, the said Fifty Thousand Dollar ($50,000.00) purchase price. Payment of any sum due hereunder to said Bank for the account of SELLERS is the same as if said payment had been paid or made by BUYERS directly to SELLERS.

SELLERS AGREE, notwithstanding anything in this agreement to the contrary, that this agreement embraces and options to BUYERS, as a part of said Fifty Thousand Dollar ($50,000.00) purchase price, all of the right, title and interest of SELLERS in and to any real and/or personal property of any kind or description situated within a radius of one thousand feet (1000') of any of said twelve (12) unpatented lode mining claims, even though the same is not fully described herein.

IN CONSIDERATION of the terms and conditions of this agreement upon the part of SELLERS to be faithfully kep and performed, BUYERS covenant and agree as follows, to-wit:

1st. To keep said premises and every part thereof at all times free and clear of mechanics' and miners' liens or other liens, incumbrances or liabilities arising from any act of BUYERS or their agents; to settle, pay and discharge, when due, on or before the 30th of each calendar month, all indebtedness and liabilities incurred by said BUYERS prior to the expiration of the preceding calendar month for work done, services rendered or material furnished in respect of and for said premises, which could in any manner become a lien on same, and BUYERS are to permit SELLERS to post in some conspicuous place upon the said premises a notice that the interest of the SELLERS in and to said twelve (12) unpatented lode mining claims shall not be subject to any lien for services, labor material furnished upon or used in connection with said premises, said notice to be on behalf of and in the name of SELLERS, with the signatures of BUYERS also to be attached thereto if SELLERS make request therefor.

2nd. To permit SELLERS to have access at all reasonable times to any part of said twelve (12) unpatented mining claims, and to any and all workings thereupon, for the purpose of sampling, inspecting and surveying said workings and premises, until the said total purchase price shall have been paid to SELLERS; to keep and maintain at BUYERS' office in Room 422 Gazette Bldg., Reno, Nevada, full and complete records and books of account showing all ore produced and the proceeds from production, which books shall be open to inspection of SELLERS at all reasonable times between the hours of 9 A.M. to 4 P.M. o'clock of each business day until the said total purchase price has been paid to SELLERS.

3rd. To pay to SELLERS, until said Fifty Thousand Dollar ($50,000.00) purchase price is paid in full, a schedule of royalties, as hereinafter described upon all ores, concentrates and/or bullion shipped, milled and/or sold from said premises by virtue of this agreement; said royalties, when paid, to be credited upon and applied against and shall be an offset to, the next minimum monthly or annual payment or payments then to become due hereunder, and all royalty payments and minimum monthly payments and annual payments are to be a part of said Fifty Thousand Dollar ($50,000.00) purchase price, and that the rate of royalties to be paid shall be as follows, to-wit:

(a) The total of all dry tons of all ores milled, shipped and/or sold by BUYERS from said premises for each calendar month is to be established and a record in writing made thereof. The total of all monies received by BUYERS (after deducting trucking, railroad and smelter charges) for each calendar month is to be kept and a record in writing made thereof. The ratio of total tons of dry ore milled, shipped and/or sold from said premises during any particular month, to the total of all monies received, after deduction of trucking, railroad, treatment and smelter charges, for the sale of all ores concentrates and bullion from said premises during the said calendar month, shall be established as the net amount received per dry ton, and the rate of royalties to be paid by BUYERS to SELLERS shall be paid upon the net amount received, as follows, to-wit:

A royalty of 5% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average 0.5% WO_3 or less per dry ton; AND

A royalty of 6% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.5% WO_3 and not over 0.6% WO_3 per dry ton; AND

A royalty of 7% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.6% WO_3 and not over 0.7% WO_3 per dry ton; AND

A royalty of 8% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.7% WO_3 and not over 0.8% WO_3 per dry ton; AND

A royalty of 9% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.8% WO_3 and not over 0.9% WO_3 per dry ton; AND

A royalty of 10% of the net amount received by BUYERS from all ores sold, shipped or milled during any calendar month that average over 0.9% WO_3 per dry ton.

All royalty and minimum monthly and annual payments due hereunder to SELLERS, after making the said $2,300.00 payment due on or before June 15, 1951, are to be paid to said First National Bank, of Ely, Nevada, for the account of SELLERS, and all of such payments shall be immediately paid to SELLERS by said Bank and credited by said Bank upon said Fifty Thousand Dollar ($50,000.00) purchase price, and thereupon deducted from the balance then due thereon.

4th. To instruct, upon demand of SELLERS, the mill, smelter, sampler or reduction works or mint purchasing ore, concentrates or bullion, from said premises, to pay directly to said First National Bank, of Ely, Nevada, for the account of SELLERS, all royalties herein this agreement in the preceding paragraph reserved, and the same are to be paid to SELLERS through said Bank as a part of said purchase price.

5th. To accept the benefits of the Nevada Industrial Insurance Act and pay the required monthly premiums to the proper Commission covering all employees working on said premises, or in lieu thereof to purchase similar Industrial Insurance in a recognized company acceptable under the laws of the State of Nevada.

6th. To pay all installments of personal property and real estate taxes which may at any time become finally due and payable upon the said twelve (12) unpatented lode mining claims, or upon any personal property situated thereon, as long as this agreement remains in full force and effect.

IT IS HEREBY MUTUALLY AGREED by and between SELLERS and BUYERS as follows, to-wit:

A. That SELLERS will lend every reasonable assistance to BUYERS with a view to carrying on a harmonious and mutually advantageous and profitable mining enterprise, and Buyers agree to reciprocate fully in this respect.

B. That BUYERS may, in the event this agreement becomes terminated, remove all of BUYERS' equipment, machinery, accessories, supplies or property of any kind which may have been placed by the BUYERS upon or in the said twelve (12) unpatented lode mining claims; such removal to be accomplished within six (6) months after the termination of this agreement from any cause, but if not so removed within the said six (6) months, then the same shall become and remain the property of SELLERS; however, BUYERS shall not remove wooden sets, wooden supports and/or timbers or supports of any kind from any of the workings, adits, tunnels, crosscuts, stopes, shafts, drifts, raises and/or winzes.

C. That in the event the BUYERS shall fail to make any payment on said purchase price as and when due hereunder, this agreement, at the option of SELLERS after ten (10) days from date that notice in writing in duplicate is served upon BUYERS by Registered U. S. Mail, shall become terminated and cancelled unless BUYERS within said ten days time correct the default in payment, which default is to be fully described in said notice. SELLERS must mail one copy of said notice to BUYERS at 422 Gazette Bldg., Reno, Nevada, and one copy to BUYERS at P. O. Box 889, Reno, Nevada, via Registered U. S. Mail. Should BUYERS fail to perform any of the other terms, conditions, covenants or agreements of this agreement upon BUYERS' part to be performed, SELLERS shall have the right to give BUYERS written notice in duplicate to be sent via Registered U. S. Mail, one copy to be addressed to BUYERS at 422 Gazette Bldg., Reno, Nevada, and the other copy to be addressed to BUYERS at P. O. Box 889, Reno, Nevada, or at any address hereafter designated and substituted by BUYERS in written notice served upon SELLERS at P. O. Box 524, Ely, Nevada, said notice to specifically describe wherein BUYERS are in default, and in the event BUYERS should fail to remedy or rectify such default within thirty (30) days after said notice has been served upon BUYERS by Registered U. S. Mail, BUYERS shall thereupon be in default hereunder, and the SELLERS may, at their option, immediately cancel and forfeit this agreement without further notice to or consent from BUYERS, and in the event of a cancellation and forfeiture of this agreement, all payments previously made by BUYERS to SELLERS hereunder shall be retained by SELLERS as their property and as liquidated damages, and BUYERS shall have no right, title and/or interest therein or thereto any of said previous payments.

D. That BUYERS shall do the annual assessment work for the said twelve (12) unpatented lode mining claims for each year as required by the Mining Laws

of the United States of America and the State of Nevada, except BUYERS shall not be obligated to do said work in any year in the event BUYERS should surrender this agreement on or before thirty days prior to the end (July 1st) of any year in which said work is due, and further providing said work has not been suspended by an Act of the United States Congress; that in the event said Congress does now or hereafter permit suspension of said annual assessment work by mining claim owners who file claim for exemption, SELLERS must execute and deliver to BUYERS, for the purpose of recording prior to the end (July 1st) of said year, a claim for exemption for all of said twelve (12) lode mining claims, and all of SELLERS' statutory rights to claim exemption from assessment work for each year must be applied against and for said twelve (12) lode mining claims.

E. That, notwithstanding anything in this agreement to the contrary, BUYERS may at any time, when not in default hereunder, release and quitclaim this agreement to SELLERS upon payment or tender of the consideration of Ten Dollars ($10.00), and upon tender of such release and quitclaim, and upon the payment or tender of said Ten Dollars ($10.00) consideration, this agreement shall thereupon become cancelled, inoperative, null and void and BUYERS shall thereupon be released and relieved from any and all obligations hereunder, and all previous payments received hereunder by SELLERS shall forever remain as the sole property of SELLERS and BUYERS shall have no right, title and/or interest therein or thereto.

F. That it is expressly understood and agreed by and between SELLERS and BUYERS that this agreement does amend, modify and change, as expressly stated herein, that certain agreement dated January 1, 1951, executed by J. R. Murphy and D. B. Murphy (being members of the parties of the first part herein) and H. B. Chessher (being a member of parties of the second part herein), which agreement is recorded at Pages 94 to 98 inclusive of Book 163 in the Miscellaneous Records of White Pine County, Nevada, in the office of the County Recorder of said County, and by reference the said agreement is made a part hereof with the express understanding and agreement that it is amended, modified and changed as herein this agreement expressly stated and described; otherwise, the said agreement of January 1, 1951, remains in full force and effect, and an undivided one-half interest in and to said agreement of January 1, 1951, has been duly assigned and transferred to Jane E. Chessher by H. B. Chessher.

G. That this agreement and each and every clause and covenant herein contained shall be binding upon and enforceable by the respective successor, heirs, executors, administrators and assigns of the parties hereto, and the right of assignment by either party hereto is hereby permitted and authorized. This agreement has been executed in quintuplicate and each party hereto has received a duly signed copy hereof, and the First National Bank, of Ely, Nevada, is to receive a signed copy hereof when said deed is deposited in said Bank simultaneously with the payment of said $2,500.00 due on or before June 15, 1951, in order that said Bank may fully interpret its escrow instructions, any of which may be contained and embodies in this agreement. All erasures and interlineations were made before signing.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ D. B. MURPHY /s/ JAMES R. MURPHY

/s/ SYLVIA E. MURPHY

Bert Murphy

Parties of the First Part - SELLERS

/s/ H. B. CHESSHER /s/ JANE E. CHESSHER

Parties of the Second Part - BUYERS

C O P Y

STATE OF NEVADA)
) ss
County of White Pine)

On this 7th day of June, A. D. 1951, personally appeared before me, /s/ Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES R. MURPHY, D. B. MURPHY who is also known as BERT MURPHY, and SLYVIA E. MURPHY, the wife of D. B. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.
My commission expires Aug. 5, 1951

STATE OF NEVADA)
) ss
County of Washoe)

On this 4th day of June, A. D. 1951, personally appeared before me, W. E. Sirbeck, a Notary Public in and for said County of Washoe, H. B. CHESSHER and JANE CHESSHER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. SIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada. My Commission expires December 28, 1953

COPY

Reno, Nevada
January 30, 1952

The First National Bank of Ely
Ely, Nevada

Attention of Mr. Jay E. Brinton,
President.

Gentlemen:

Please accept these amended escrow instructions as a modification of, and an amendment to, the original escrow instructions dated June 5, 1951, signed by each of the undersigned, and deposited with you.

You are hereby authorized and instructed to change said original escrow instructions, dated June 5, 1951, in manner and way and to the extent as expressly described in that amended agreement, dated January 30th, 1952, which amends the Lease and Option Agreement of June 4th, 1951, and an executed copy of sa id amended agreement of January 30th, 1952, is attached hereto and made a part hereof.

EXECUTED this the 30th day of January, 1952.

/s/ D. B. MURPHY

/s/ JAMES R. MURPHY

/s/ SLVIA E. MURPHY

/s/ H. B. CHESSHER

/s/ JANE E. CHESSHER

COPY

AMENDED AGREEMENT

THIS AMENDED AGREEMENT, made and entered into this the 30th day of January, 1952, by and between JAMES R. MURPHY, a single man, and D. B. MURPHY, sometimes known as BERT MURPHY, and his wife, SYLVIA E. MURPHY, all being residents of the State of Nevada, the parties of the first part, hereinafter known and referred to as SELLERS, and H. B. CHESSHER and JANE E. CHESSHER, respectively husband and wife, residents of the State of Nevada, the parties of the second part, hereinafter known and referred to as BUYERS,

WITNESSETH: THAT

WHEREAS, under date of June 4th, 1951, the respective parties to this amended agreement made and entered into a lease and option agreement, a typed copy of which is attached hereto and made a part hereof; AND

WHEREAS, the respective parties to this amended agreement now desire and elect to modify and amend said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto, in manner and way and to the extent as hereinafter described;

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars ($10.00), and for other good and valuable consideration paid to SELLERS by BUYERS, receipt of all of which SELLERS hereby acknowledge, SELLERS do hereby covenant and agree as follows, to-wit:

1st. That the 10th to 17th (inclusive) lines on Page Two of said original lease and option agreement of June 4th, 1951, which now read as follow, to-wit:

> $ 500.00 per month, as the minimum monthly payment, shall be paid during each calendar month beginning with the month of January, 1952, and continuing during each calendar month for 80 consecutive calendar months until the total purchase price sum of $60,000.00 shall have been paid to SELLERS; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment then to become due hereunder on said purchase price.

be and the same are hereby modified and amended to read and be as follows, to-wit:

$200.00 per month, as the minimum monthly payment, shall be paid during each calendar month for the first five (5) calendar months of the year 1952, and $500.00 per month, as the minimum monthly payment, shall be paid during each succeeding calendar month, beginning with the month of June, 1952, and continuing during each successive calendar month until the said total purchase price sum of $50,000.00 shall have been paid hereunder to SELLERS from all royalty payments, monthly payments and annual payments; it being expressly understood and agreed that all royalty payments made under this agreement shall be applied as payments and credits upon the next annual or monthly payment or payments then to become due hereunder on said purchase price.

AND SELLERS do hereby acknowledge receipt of full payment by BUYERS of $600.00 for payment in full for the months of January, February and March, 1952, as being the only payments due for said three months under the preceding amendment; AND

2nd. That a duly executed copy of this amended agreement shall be delivered forthwith by BUYERS to the First National Bank of Ely, Ely, Nevada, in order that said bank may change its escrow instructions to conform to the intentions and text contained in this amended agreement, and said bank is hereby authorized and instructed to make said changes in said escrow instructions.

IT IS EXPRESSLY UNDERSTOOD AND AGREED by and between SELLERS and BUYERS that no other term, condition or text of said original lease and option agreement of June 4th, 1951, a typed copy of which is attached hereto and made a part hereof, is in any manner or way, or to any extent, modified or amended except as hereinabove expressly described, and said original lease and option agreement of June 4th, 1951, is now, and shall remain, in full force and effect subject to the amendments hereinabove contained.

IN WITNESS WHEREOF the SELLERS and BUYERS have hereunto set their hands and seals, and have executed this agreement, as of the day and year hereinabove first written.

/s/ D. B. MURPHY /s/ JAMES R. MURPHY

/s/ SYLVIA B. MURPHY

Parties of the First Part - SELLERS

/s/ H. B. CHESSHER /s/ JANE L. CHESSHER

Parties of the Second Part - BUYERS

STATE OF NEVADA)
) ss
County of White Pine)

On this 15th day of March, A. D. 1952, personally appeared before me, Albert C. Gianoli, a Notary Public in and for said County of White Pine, JAMES R. MURPHY, D. B. MURPHY who is also known as BERT MURPHY, and SYLVIA E. MURPHY, the wife of D. B. Murphy, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of White Pine, the day and year in this Certificate first above written.

/s/ ALBERT C. GIANOLI
Notary Public in and for the County of White Pine, State of Nevada, Residing at Ely, Nevada.

(SEAL)

STATE OF NEVADA)
) ss
County of Washoe)

On this 30th day of January, A. D. 1952, personally appeared before me, W. E. Sirbeck, a Notary Public in and for said County of Washoe, H. B. CHESSHER and JANE E. CHESSHER, husband and wife, known to me to be the persons described in and who executed the foregoing instrument, who acknowledged to me that they executed the same, freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County of Washoe, State of Nevada, the day and year in this Certificate first above written.

/s/ W. E. SIRBECK
Notary Public in and for the County of Washoe, State of Nevada, Residing at Reno, Nevada
My Commission expires December 28, 1954.

(SEAL)

C O P Y

BAKER AND COMPANY
2402 East Fourth St.
Reno, Nevada

March 24, 1952

Mr. George W. Snyder, Jr.
518 Felt Building
Salt Lake City 1, Utah

Dear Mr. Snyder:

Attached hereto please find two copies of "Offer To Convey" and accompanying documents on the so-called Monte Cristo mine property, properly executed by H. B. and Jane Chessher.

Pursuant to our verbal agreement and arrangements, and for and in consideration of the sum ten ($10.00) dollars, receipt of which is hereby acknowledged and, a further consideration of the issuing and delivering to me of twenty five thousand (25,000) shares of the fully paid and non-assessable common Capital Stock of the new Company that you are organizing for the purpose of developing this property and other tungsten and manganese interests in this area. Said shares are to be delivered to me on or before April 15, 1952.

Upon your acceptance of this assignment as indicated below, you are to promptly pay to me the four hundred ($400.00) dollars which I have paid to Mr. Chessher and which is acknowledged in said "Offer to Convey" and, that you hereto assume all and such obligations as setout in this "Offer to Convey" assumed by me and included in the agreement in the appendage thereto on page 4 thereof.

I understand and approve your further assignment of these instruments.

/s/ S. GEORGE BAKER

S. George Baker, a single man.

/s/ George W. Snyder, Jr.

ACCEPTED: George W. Snyder, Jr.

/s/ CHARLES WM. SMITH

Chas. Wm Smith, Witness to
S. George Baker

/s/ HAROLD A. COVEY

Witness to George W. Snyder

COPY

BOOK 163 PAGE 497

Reno, Nevada
March 24, 1952
File 3-22558

OFFER TO CONVEY

Mr. S. G. Baker
P. O. Box 2044
Reno, Nevada

Dear Mr. Baker.

We, the undersigned H. B. Chessher and Jane E. Chessher, husband and wife of Reno, Nevada, for ourselves and as all of the general partners of Monte Cristo Tungsten Company, a partnership, for and in consideration of the sum of ten dollars ($10.00), receipt of which is hereby acknowledged, hereby offer, for the consideration hereinafter named, to convey to you or your assignee expressly subject to the conditions recited hereinafter, all of our right, title and interest in and to the so-called Monte Cristo Tungsten Mine consisting of twelve (12) unpatented mining claims described, located and named as follows, to-wit:

Name of Lode Mining Claim	Certificate of Location is recorded in Mining Location Records of White Pine County Nevada - Book No.	Page No.
CABIN GULCH	128	346
CABIN GULCH NO. 1	128	346-347
CABIN GULCH NO. 2	128	347-348
CABIN GULCH NO. 3	128	348-349
CABIN GULCH NO. 4	128	349-350
CABIN GULCH NO. 5	128	350
CABIN GULCH NO. 6	128	351
CABIN GULCH NO. 7	128	351-352
CABIN GULCH NO. 8	128	352-353
CABIN GULCH SIDELINE (Also called SIDELINE	128	354-355
CABIN GULCH SIDELINE NO. 1 (Also called SIDELINE NO. 1)	128	355
CABIN GULCH SIDELINE NO. 2 (Also Called SIDELINE NO. 2)	128	356

all situated in the westerly side of Pine Mountain in Township 16 North Range 57 East M.D.B.M. in the White Pine Mining District, White Pine County, Nevada, and more fully described in two documents titled respectively Lease and Option agreement dated June 4, 1951, by and between the undersigned and James R. Murphy, D. B. Murphy and Sylvia E. Murphy, and Abstract of Title certified by D. S. Shaver on May 3, 1951, both of which documents are by this reference thereto made a part hereof, subject to the following terms and conditions, to-wit:

1. You or your assignee shall agree to keep and perform all conditions of the Lease and Option Agreement referred to as amended January 30, 1952.

2. Concurrent with the execution hereof you are to pay to us the sum of four hundred ($400.00) dollars which amount shall be paid to James R. Murphy et al to meet all payments, falling due under said Lease and Option Agreement, for the months of April and May, 1952.

3. You or your assignee shall made or cause to be made the following additional payments, totalling $50,000.00, to us, to-wit:

Mr. S. G. Baker
March 24, 1952
File 3-22538 - Page 2

A. The sum of $8,100.00 on or before August 1, 1952.
B. The sum of $1,900.00 on or before December 31, 1952.
C. The sum of $5,000.00 on or before December 31, 1953.
D. The sum of $5,000.00 on or before December 31, 1954.
E. The sum of $5,000.00 on or before December 31, 1955.
F. The sum of $5,000.00 on or before December 31, 1956.
G. The sum of $5,000.00 on or before December 31, 1957.
H. The sum of $5,000.00 on or before December 31, 1958.
I. The sum of $5,000.00 on or before December 31, 1959.
J. The sum of $5,000.00 on or before December 31, 1960.

and it is understood and agreed that an over-riding royalty shall be paid to us by you, or your assignee, equal to 5% of the net smelter, mint or ore buyer returns which shall be defined to be the gross amount received, at current market prices, from all ore sales after deducting standard transportation and standard treatment charges, and all of said royalties so received by us shall be credited as payments upon the next annual payment to become due upon said $50,000.00 option price. It is understood and agreed that the said option price of $50,000.00 to be paid to us is an additional sum to the $50,000.00 to be paid to James R. Murphy et al under the terms and conditions of said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952. If S. George Baker, or his assignee, pays to us the said $8,100.00 due hereunder on or before August 1, 1952, then we will execute and deliver to S. George Baker, or to his assignee an assignment in writing of all of our right, title and interest in and to said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, subject to the terms and conditions herein contained.

In the event of the failure of you or your assignee to make any payment due under this "Offer to Convey" agreement, or to perform any term or condition hereof, or to make any payment or to perform any covenant, term or condition contained in the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, then at any time after ten days have expired from date we post and pay for a registered letter in the United States Post Office, at Reno, Nevada, addressed to S. George Baker, P. O. Box 2044, Reno, Nevada, notifying S.George Baker of any default or delinquency in his obligations as described in said letter, then this "Offer to Convey" agreement shall be terminated and cancelled without further notice to S. George Baker or his assignee UNLESS the said S. George Baker fully and completely corrects the default or delinquency described in said registered letter within the said ten days from date the said registered letter is delivered to, and posted in, said post office. If this "Offer to Convey" agreement is terminated and cancelled in manner and way aforesaid then neither S. George Baker nor his assignee shall have any right, title or interest in, or claim against, said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952; the said twelve (12) mining claims or any interest or equity held by the undersigned in and to said Lease and Option Agreement and Twelve (12) mining claims, and in such event all previous payments made to the undersigned by S. George Baker and all expenditures made by S. George Baker upon and for said twelve (12) mining claims shall be forfeited to the undersigned as liquidated damages and for rental of said property, and neither S. George Baker nor his assignee shall have any right, title or interest therein or claim therefor.

Mr. S. George Baker
March 24, 1952
File 3-22538 - Page 3

5. You agree to perform all of the annual assessment work required for the year to end July 1, 1952, for the twelve mining claims described in the said Lease and Option Agreement; this to be a firm commitment and notwithstanding any other term or condition of this option.

6. You or your assignee may be payment of all amounts due us to the date of notice of termination, cancel this agreement upon ten days written notice to us and upon that condition be relieved of all further liability or obligation either under this agreement or under the aforementioned Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, and thereafter neither you nor your assignee shall have any further right, title or interest therein.

7. We agree that we will promptly execute any subordination agreement or other document required on a standard form by any agency or agencies of the United States Government in connection with exploration loans or ore purchase contracts. This only applies to our interest and does not commit us to agree that James R. Murphy et al, under said Lease and Option Agreement will execute said agreements.

8. That the standard form of written assignment to be issued hereunder by the undersigned to you if and when you promptly pay to us the said $8100.00 payment due on or before August 1, 1952, shall contain the usual clauses protecting the assignors and also it shall contain a reversion clause providing for the said Lease and Option Agreement of June 4, 1951, as amended January 30, 1952, to revert to our sole ownership if for any reason whatsoever the said assignment agreement from the undersigned to you is surrendered, cancelled or terminated.

Executed by us, the persons properly qualified so to do, this 24th day of March, 1952, at Reno, Nevada.

MONTE CRISTO TUNGSTEN COMPANY
(a partnership)

By /s/ H. B. CHESSHER
General Partner

By /s/ JANE E. CHESSHER
General Partner

/s/ H. B. CHESSHER
H. B. Chessher

/s/ W. E. SIRBECK
Witness

/s/ W. E. SIRBECK
Witness

/s/ JANE E. CHESSHER
Jane E. Chessher

To MONTE CRISTO TUNGSTEN COMPANY, a partnership, H. B. CHESSHER and JANE E. CHESSHER, 422 Gazette Building, Reno, Nevada

Please be informed that I hereby accept, approve, confirm and ratify all of the terms and conditions of the foregoing "Offer to Convey" agreement, and in consideration of the foregoing "Offer to Convey" as

Mr. S. George Baker
March 24, 1952
File 3-22538 - Page 4

executed by you in my favor, dated March 24th, 1952, I hereby personally agree with you, and am firmly bound and obligated to you, as follows, to-wit:

(a) To perform and do, before July 1, 1952, all of the annual assessment work and labor as required by law to be performed upon and for said twelve mining claims as described in the foregoing option; said work and labor to be promtly paid for by me personally; AND

(b) To fully and promptly comply with the mining laws of the United States of America and of the State of Nevada in the performance and doing of said annual assessment work and labor upon and for said twelve mining claims; AND

(c) To promptly execute in duplicate an affidavit of having performed and done a total of $1200.00, or more, of annual assessment work and labor upon and for said twelve mining claims when said work is completed prior to July 1, 1952; said affidavit to be prepared by you, however, I will pay for recording said affidavit in the office of the County Recorder of White Pine County, Nevada; AND

(d) To promptly pay on June 1, 1952, the $600.00 monthly payment due to James R. Murphy et al under said lease and option agreement of June 4, 1951, as amended January 30, 1952; AND

(e) To personally assume and undertake all obligations set forth hereinabove and the assignment of all or part of said option to any assignee, or the surrender of aforesaid agreement by me or my assignee, will not in any way or manner relieve or release me personally of any or all of the obligations hereinabove in this instrument undertaken and agreed to by me in the preceding four paragraphs (a), (b), (c) and (d); AND

I hereby bind myself to promptly and fully perform and keep all of aforesaid covenants and agreements before July 1, 1952.

EXECUTED this the 24th day of March, 1952, at Reno, Nevada.

/s/ S. GEORGE BAKER
(S. George Baker)
P. O. Box 2044
Reno, Nevada

Witnessed by

/s/ W. E. SIRBECK
(Witness)

HBC/JR
C&CO.

PROOF OF LABOR

STATE OF NEVADA)
:
COUNTY OF WHITE PINE)

Before me the subscribed personally appeared, who being sworn, says: that at least One Hundred ($100.00) Dollars each or a total of Twelve Hundred ($1,200.00) Dollars worth of labor or improvements were performed or made upon 12 mining claims named as follows:

Cabin Gulch
Cabin Gulch No. 1
Cabin Gulch No. 2
Cabin Gulch No. 3
Cabin Gulch No. 4
Cabin Gulch No. 5
Cabin Gulch No. 6
Cabin Gulch No. 7
Cabin Gulch No. 8
Cabin Gulch Side Line
Cabin Gulch Side Line No. 1
Cabin Gulch Side Line No. 2

situated in the White Pine Mining District, White Pine County, State of Nevada, during the year ending June 30, 1952.

SUCH EXPENDITURE was made by or at the expense of George W. Snyder, Jr., operator, for and on behalf of the owners of the claims, James R. Murphy et. al. for thepurpose of holding said claims.

George W. Snyder Jr.
George W. Snyder, Jr.

Subscribed and sworn to before me this 20th day of May, 1952.

Notary Public

EXHIBIT "B"

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

LIABILITIES AND NET WORTH

Current Liabilities		
Accounts Payable - Trade		$ 10,698.44
Ore Advances		15,219.75
Officers Advances		2,193.26
Wages Payable		1,946.75
Employees Withholding Tax		996.60
Payroll Taxes Payable		146.28
Accrued Interest Payable		1,158.09
Loan Payable - Santa Cruz Copper		1,500.00
Total Current Liabilities		$ 33,859.17
Non-Current Liabilities		
Production Notes Payable	$ 53,902.31	
Officers Notes Payable	19,317.67	
Total Non-Current Liabilities		73,219.98
Net Worth		
Capital Stock, Common, Authorized 3,000,000 Shares, par value 10 cents. Issued and outstanding 2,373,227 shares	237,322.70	
Paid In Surplus	172,082.33	
Total Net Worth		409,405.03
Total Liabilities and Net Worth		$516,484.18

N/B: Statement prepared from original records without audit.

Glen A. Gardner, Certified Public Accountant,
Provo, Utah

UNITED MINERALS CORPORATION

BALANCE SHEET

FEBRUARY 29, 1952

ASSETS

Current Assets			
Petty Cash			$ 1,055.62
Cash in Bank - First Security			10,158.62
Cash in Bank - Walker			27,684.22
Cash in Bank - Commercial Trust Co. - New Jersey			90,862.95
Accounts Receivable			3,548.24
Employee Advances			291.00
Total Current Assets			$ 133,600.65
Investments and Other Assets			
Securities		$ 18,000.00	
Insurance Deposits		406.10	
Total Investments and Other Assets			18,406.10
Fixed Assets - at Cost			
Property Deeds, Leases, and Options		116,785.00	
Mine Development and Promotion - Idaho		28,204.17	
Equipment - Lake Creek	$ 6,324.97		
- Rip Van Winkle	5,101.30		
- Lucky Strike	16,018.84		
- Office	1,009.54	28,454.65	
Improvements and Buildings			
Lucky Strike	12,549.93		
Lake Creek	5,391.06	17,940.99	
Total Fixed Assets			191,384.81
Deferred Expenses			
Mine Development and Exploration - Idaho		25,813.07	
- Rip Van Winkle		24,452.93	
- Lucky Strike		38,376.60	88,642.60
Intangible Assets			
Organization Expense			84,450.02
			$ 516,484.18

N/B: Statement prepared from original records without audit.

REPORT OF PRELIMINARY INSPECTION TRIP AND
PRELIMINARY LABORATORY TESTS

MONTE CRISTO TUNGSTEN DEPOSIT

January 24, 1951

On January 10, 1951, H. B. Chessher, Glenn Gentry, J. R. Murphy; and N. L. Hazen arrived on the Monte Cristo Tungsten property about 3:30 in the afternoon. We walked over the outcrop of the tungsten bearing rock that I considered a lime schist. The name of Tactite has been given by Larsh to this type of formation. The original locator, J. R. Murphy, showed us the outcrop area that he said was all mineralized with scheelite.

The formation was on edge and the strata were exposed across the strike of the formation. It has been partially eroded and the hillside had almost the slope of rest. The gulley at the bottom of the slope is most probably on a fault plane. We went over the mineralized area first during daylight, and could see scheelite fluorescence only when the rock inspected was covered with a blanket to exclude the light.

Only two small adits have been started into this formation, each going into the hill about 10 feet. At the tops of the formation Murphy sank a shaft down a short distance that I guessed was about 10 feet. The lower adit is only a short distance above the bottom of the gulley. The upper adit was near the shaft at the top of the mineralized area and I guessed about 600 feet up the hill side.

During the daylight, and without use of the mineralight, H. B. Chessher and I cut two samples from the face of the lower adit across a distance of about 6 feet. The rock here was obviously low grade when inspected under a blanket with a mineralight. Then Glenn Gentry and I cut two samples across the face of the upper adit across 70 inches. Under the blanket this appeared to be good ores.

Analysis of samples by Union Assay Office, Inc.

No. MC 1	Across 6 ft. of the face of lower adit near floor . . .	0.140 % WO_3
No. MC 2	Across 6 ft. of the face of lower adit about 5 ft. above floor	0.075 % WO_3
No. MC 3	Across 70 inches of the face of upper adit near floor .	0.825 % WO_3
No. MC 4	Across 70 inches of the face of upper adit five feet above floor	0.555 % WO_3

After darkness fell (the wind was blowing and it was snowing a little) we spent two hours walking slowly back and forth across the mineralized area inspecting all of the rock with mineral lamps. Some of the strata was much higher grade than the average, but the entire area was mineralized. Murphy told us that the measured exposure that we were inspecting was 400 feet wide and 600 feet high. I could well believe it.

After returning to the laboratory in Virginia City we made sink-float tests on portions of Sample No. 4. These tests showed, under a mineralight, that it would be impossible to obtain a concentration of the tungsten at any size that could be treated by the sink-float system. The rock is well garnetized. It is

very heavy, and half of the ore sank in pure acetylene tetra-bromide with a specific gravity of 2.968. But the mineralight showed that the float contained just as much scheelite as was contained in the sink.

We made sink-float tests on a portion of sample No. 2. I thought it possible that such a low grade material might float on a liquid in which ore as good as sample No. 4 would sink. The tests on sample No. 2 in pure acetylene tetra-bromide also gave an even split of the sample at a specific gravity of 2.968 and the sink contained just as much scheelite as did the float.

The above tests proved to my satisfaction that sink-float would be of no value in the treatment of this ore.

We then started panning tests on portions of Sample No. 4. We found that the scheelite crystals did not crush free from the gangue until the ore was ground to pass a 40 mesh screen. We then carefully ground a portion of Sample No. 4 to pass a 40 mesh screen and panned it very roughly, trying to produce a low tail rather than a good concentrate. After the first panning was completed we panned the first tailing again, producing a second pan concentrate. During this work we slopped over a "slime" product which was quite coarse and which settled and filtered very rapidly.

The results of this panning were assayed by Union Assay Office, Inc., with the following results:

Product	Weight %	% WO_3	% Content WO_3
1st Concentrate	16.01	2.27	70.48
2nd Concentrate	8.25	0.67	10.67
Sand Tail	46.92	0.19	17.28
Slime Tail	28.82	0.03	1.56
Head - Sample #4 Assay Head	100.00	0.515	99.99

I feel that the following probabilities are indicated by the preliminary tests:

1. This ore must be ground to pass 40 mesh before it can be concentrated.

2. This ore would be first concentrated over tables at 40 mesh. The slime tail would be very low grade and should be discarded. The sand tail should be re-ground and concentrated.

But if an ore deposit is established in the area and the Government will purchase tungsten ore as during the last War, I would judge that shipping ore could be mined directly from this deposit and a large profit obtained with a minimum capital investment.

Respectfully submitted

H. L. Hasen, Mining Engineer
P. O. Box 128
Carson City, Nevada

May 1, 1951

Mr. H. B. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg., P. O. Box 889
Reno, Nevada

Dear Sir:

On April 25, 1951, I spent the afternoon and evening with you and J. R. Murphy at the Monte Cristo tungsten mine situated on the westerly side of White Pine Mountain in the White Pine Mining District, White Pine County, Nevada. My job was to assist you in the sampling and to carefully observe and study the character of the rock and to form my opinion of the difficulties that might be encountered in the driving of a horizontal tunnel 8' wide by 10' high for 300 feet into the hillside by following the richest scheelite band now exposed in the central part of the main scheelite deposit on the north side of Cabin Gulch.

We cut nine (9) samples during daylight with mails and single jack and during said operations I studied carefully the character of the rock and its amenability to standard drilling methods. It is my opinion that five good miners will be able to drill, shoot and muck out out two rounds per eight hour day, each round to be six feet long by eight feet wide by ten feet high, and that unless loose fault zones or loose fractured zones are encountered as the tunnel work progresses, no timbering will be necessary except perhaps at the portal.

The opinion above expressed is conditional upon the property being supplied with the following machinery, equipment, tools, supplies, etc., to-wit:

1 - Kimco Finlay loader (mucking machine), Model 12-B
1 - Joy Hydro Drill Jib (2 drill Jumbo
3.- I-R RA 35 Automatic Drifters
12 - Timken tungsten carbide bits (1-3/4" & 1-5/8")
1200 - feet of 35 lb. rail with fishplates, across ties and spikes for laying two tracks into said 300' tunnel
6 - Ore cars - side dump, each 20 cu. ft. capacity
1 - 500 cubic foot compressor driven by diesel or gasoline engine
1 - air fan with engine to drive same and 400 feet of 12" air vent pipe for sucking out air.
1 - Air Receiver of large dimensions
1 - Water Pressure tank
1 - fuel tank

And an adequate supply of water, drilling, steel, powder, fuse, caps, carbide, air hose, fuel, timbers, lube oils, greases, wrenches, shovel, picks, double and single jacks, and such other tools, supplies, machinery and equipment as are customarily and necessarily used and needed on a tunnel job of this size.

The five miners using the equipment above described should be able to drive the 300 feet in thirty (30) days of actual working time providing they average a minimum of ten feet in length each 8 hour day. I estimate the total ore to be mined and the gross value thereof to be as follows, to-wit:

The tunnel 300' by 8' wide by 10' high equals 24,000 cubic feet and when divided by 12 cubic feet for each ton of ore in place equals 2000 tons of ore, and if the ore will average 0.50% WO_3 such will equal 1000 units of WO_3, and if the Government will pay $63.00 per unit less 15% for loss in tails while being milled and if the Government will charge $10.00 per ton for handling, transporting and milling the crude ore, the gross value of the ore mined from said tunnel should be:

2000 tons x 0.50% WO_3 equals 1000 units x $63 per unit x 85%
less $20,000.00 (2000 x $10 for Government charge) equals . . $33,550.00

and it is my belief that the total operating costs can be kept within the following estimates, to-wit:

Mining costs—2000 tons at $4.00 per ton	$ 8,000.00
Royalty charge—2000 tons at $1.00 per ton . . .	$ 2,000.00
Overhead charge—2000 tons at $1.00 per ton. . .	$ 2,000.00
Trucking charge—2000 tons at $4.00 per ton. . .	$ 8,000.00
TOTAL OPERATING COSTS	$20,000.00

The operating profit (before rental costs for such equipment as may be rented for the first 300' of tunnel, and before taxes, depreciation and depletion) during said thirty days of operating time is estimated to be ($33,550.00 minus $20,000.00) $13,550.00. If the first 300' of tunnel project works out as above outlined, or reasonably close to the estimates made, then it is my belief that additional tunnel projects should be spotted and driven at strategic places in the mineralized scheelite ore zone for the purpose of systematically blocking out ore reserves that will be measureable with a greater degree of safety than if diamond drill holes are used for such purposes. Furthermore, the tunnels will provide your engineers with a better picture of the formations and geological conditions than will be the case if you develop the property by use of diamond drill holes.

I believe that my costs hereinabove are conservatively made, and that $4.00 per ton will cover the costs of all labor and supplies used in the mining operation. For instance, five men working on a labor contract at $1.50 per ton or at $10.00 per foot in length will earn $24.00 per day if they drive 12' in length in a tunnel 8' wide by 10' high. This amounts to $120.00 for labor and leaves ($320 minus $120) $200.00 per day for supplies during each day that 12 feet of tunnel is driven and from which 80 tons of ore should be removed. You assure me that $1.00 royalty charge is sufficient under your agreement with the owners. The trucking rate of $4.00 is adequate, in my opinion, because the trucking distance from mine to Ely, Nevada, is 60 miles, being 15 miles over dirt road and 45 miles over Highway 50, equal to 6-2/3¢ per ton mile.

Yours very truly

Glenn Eastham
Foreman, Chesco Mine at Aurora
P. O. Box BB-7, Hawthorne, Nevada

EXHIBIT "C"

R. R. CASTO
PRESIDENT

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY-TREASURER

PHONE 3-7417

CRISMON & NICHOLS

229-231 SO. WEST TEMPLE ST.

P. O. BOX 1708

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH May 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR six SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZS. GOLD PER TON	OZS. SILVER PER TON	PER CENT LEAD	PER CENT ~~COPPER~~ Molybdenum Tri-Oxide (MoO_3)	PER CENT ~~ZINC~~	PER CENT INSOL.	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	VALUE OF ~~WO3~~ PER TON
Monte Cristo										
6½ Ft. Cut Upper Tunnel		Trace	Trace		Trace				0.68	25.70
4 ft. Cut Above Shaft									0.46	15.[illegible]
4 ft. Cut East Outcrop									0.32	[illegible]
18 Inches East Outcrop									0.66	24.[illegible]
M. P. Upper Tunnel									0.61	22.60
No Tag									0.28	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 22.00

BY [illegible]

R. R. CASTO
PRESIDENT

P. M. CRISMON
VICE-PRESIDENT

ORRIN FISHER
SECRETARY-TREASURER

CRISMON & NICHOLS

229-231 SO. WEST TEMPLE ST.

PHONE 3-7417

P. O. BOX 1708

REPORT OF ASSAY

SALT LAKE CITY 10, UTAH July 2, 1952

United Minerals Corp.

WE HAVE ASSAYED YOUR eight SAMPLES AND FIND them TO CONTAIN AS FOLLOWS:

DESCRIPTION	NO.	OZ. GOLD PER TON	OZ. SILVER PER TON	PER CENT LEAD	PER CENT COPPER	PER CENT ZINC	PER CENT [illegible]	PER CENT IRON	PER CENT Tungsten Tri-Oxide (WO_3)	DOLLARS PER TON
Monte Cristo	1								0.53	
Slusher	2								0.60	
Higrade Top Bench	4								7.22	
Special	3								0.70	
Lower Bench Right Side	5								1.57	
Lower Bench Left Side	6								0.99	
Stockpile Grab	7								0.37	
Un-marked	8								0.29	

REMARKS:

CRISMON & NICHOLS

CHARGES $ 24.00

BY

EXHIBIT "D"

DAVID D. BAKER
Consulting Mining and Metallurgical
Engineer

Mine Management
Examination & Reports
Plant Design

Reno, Nevada
1380 Sierra Street

April 16, 1951

Mr. H. B. Chessher
Gazette Building
Reno, Nevada

Dear Sir:

Pursuant to your instructions, I visited the Monte Cristo Tungsten Deposit and spent one afternoon and evening making a reconnaissance of the surface exposures and going over the outcrops with a fluorescent lamp. No samples were taken and no attempt was made to survey or measure the orebodies. In the time available, it was possible to cover only the portion of the deposit that occurs on the North side of the canyon known as Cabin Gulch. Although my inspection was brief, I can say without hesitation that the deposit is the largest occurrence of undeveloped low-grade tungsten ore that I have seen or known of in the Western United States.

The North side of Cabin Gulch is quite steep and although a great deal of the lower slope is covered with talus the upper portion is uncovered and the tactite bodies outcrop boldly. The scheelite bearing tactite occurs in this area as three bands--a central band standing almost vertically, on each side of which is another band dipping at a steep angle. The three ore bands apex at a point near the crest of the ridge and spread out toward the bottom of the canyon. The central band is roughly 25 feet in thickness and both the eastward and westward bands range from 30 to 50 feet in thickness. All of these tactite bodies can be traced for about 250 feet down the mountainside before they are obscured by the mantle of talus.

The general impression that I gained from lamping the deposit with a fluorescent lamp is that the average grade of the mineralized tactite is about 0.3% WO_3.

Assuming a total length of 750 feet for the 3 bands, an average thickness of 30 feet, and a depth of 100 feet, the possible tonnage of ore in this section of the deposit would be 225,000 tons. Since no intrusive rocks were observed in the vicinity of the tactite bodies it is possible that many hundreds of feet of metamorphosed limestone may be found lying above the batholith of quartz monzonite that uplifted the sedimentary rocks. Thus, the geologic possibilities for greatly increasing the estimated tonnage are very good, and a program of diamond drilling to explore the formations at depth should be undertaken.

At one point in the central band where it has been opened up by an open cut and a shallow pit, I would judge the grade to be 1% over a width of from 6 to 8 feet. This section should be explored since it might be of sufficient importance to support a small scale mining and milling deposit. Such a mill could serve as a pilot testing plant for working out the metallurgy of the lower grade ore.

Very truly yours,

/s/ DAVID D. BAKER

David D. Baker

DDB:jm

Reno, Nevada
February 15, 1951

Mr. H. B. Chessher, Manager
Monte Cristo Tungsten Company
422 Gazette Bldg.
P. O. Box 389
Reno, Nevada

Dear Sir:

Pursuant to your request, I have examined the surface outcroppings, two short tunnels and one shallow shaft located on the Monte Cristo scheelite tungsten mining property situated in White Pine Mining District, White Pine County, State of Nevada. The property consists of a group of 12 unpatented lode mining claims, and said group, so I am informed, has been owned by the same two owners since scheelite was first discovered thereon in 1939. The scheelite ore deposit covers a large area within the boundaries of said group of claims.

An initial examination was made by me on the afternoon and evening of January 10, 1951, for the purpose of determining the extent of the scheelite ore deposit in the area considered by the owners to be the part of the entire deposit that is the most amenable to economical mining with a power shovel. A snowstorm beginning in the evening of January 10, 1951, prevented my return to the property the following day for a further detailed study. On February 11th and 12th, 1951, I again visited the property and spent a large part of the time in lamping the scheelite exposures and in studying the geology and making measurements of the scheelite ore exposures on the surface. My report follows:

GEOLOGY

A report previously made by Jos. G. L'Brien, E.M., dated September 15th, 1941, covers the aforesaid group of 12 claims and also other claims in the district. It is a lengthy report and in part states as follows, to-wit:

> "The country rock of the White Pine mining district consists of Paleozoic sediments which have been intruded by quartz monzonite and granodiorite in the late Cretaceous or early Tertiary time."

and I agree with that statement. My examination indicates that the metamorphosed zone in which the scheelite ore deposits occur covers a very large area.

ORE DEPOSIT

The scheelite deposit on this group of claims occurs in a contact metamorphosed zone consisting principally of limestones altered to tactite by solutions accompanying the intrusion of granitic rock. There are three recognized scheelite ore zones, being the central zone, the westerly zone and the easterly zone. The central zone is approximately 140 feet in width at its most prominent exposure, and the westerly zone is over 80 feet in width at its most prominent exposure. The easterly zone is badly covered with slide rock, and the extreme easterly part forming the easterly wall of the entire mineralized zone is the only part that is exposed to view at this time.

SAMPLING

A total of 13 tungsten trioxide determinations were made on samples taken from the deposit, and all of the determinations were made by Union Assay Office, Inc., Salt Lake City, Utah, with the following results, to-wit:

No. 1	0.140 %
No. 2	0.075 %
No. 3	0.825 %
No. 4	0.555 %
No. 5	0.160 %
No. 6	0.090 %
No. 7	0.500 %
No. 8	0.450 %
No. 9	2.270 %
No.10	0.670 %
No.11	0.190 %
No.12	0.030 %
No. 13	3.900 %

The aforesaid samples were used as patterns to make preliminary estimates of the tungsten trioxide content in the remaining parts of the mineralized zone from which no samples were taken. An ultra-violet fluorescent lamp, a very large Mineralight, was used extensively in traversing the length and width of the deposit, and the Mineralight showed that the deposit contained a uniform distribution of scheelite mineralization over a large area, the like of which I have never examined during my extensive experience in the examination and sampling of scheelite properties. By the use of the Mineralight and the aforesaid assay results, I believe I was able to arrive at a fairly accurate estimate, as hereinabove stated, of the possible gross tonnage of ore averaging 0.25% to 0.50% WO_3. in this deposit.

MINERALIZATION

In my examination of this deposit, it was observed that a very small amount of powellite and iron pyrite were contained in the scheelite ore. The scheelite crystals appear to range in size from 1/32" to 1/4" and were well disseminated throughout the tactite rock. The scheelite crystals appear to be firm and I do not anticipate too much difficulty in making a high grade concentrate by gravity concentration when a mill is made available for processing the scheelite ore from this property. There is a small amount of garnet in the ore, and the molybdenum content does not appear excessive. A representative sample of high grade ore from this property was selected and sent to Union Assay Office, Inc., Salt Lake City, Utah, for tungsten trioxide and molybdenum assays, and the determinations were as follows, to-wit:

3.900 % WO_3
0.062 % Mo

From the said determinations it is observed that the ratio of tungsten trioxide (WO_3) to molybdenum (Mo) is around 62 to 1. This indicates that a ton of 60% WO_3 concentrates should contain not more than 1% Mo if said ratio is maintained throughout the deposit, and I have no reason to believe that such ratio will not occur.

TONNAGE AND VALUES

My examinations revealed that a very definite mineralized zone extends for a length of approximately 500 feet by 400 feet in width with a depth of at least 150 feet. It is my belief that this particular zone will produce by power shovel operation in open pit between 500,000 and 1,000,000 tons of scheelite ore containing between 0.25% and 0.50% WO_3 per ton. In making said tonnage estimate I have not given consideration to, or included the vein, the probable tonnage of commercial scheelite ore in the areas of extension, both north and south, of this deposit. I have not stressed in this report the importance of the enriched lenses of scheelite ore, assaying 0.75% WO_3 of more, which occur at several places in the deposit which are amenable to underground mining methods. It is my belief that the deposit is topographically suited for power shovel operation in open pit and if the minimum grade of ore to be mined by power shovel in open pit is to be kept above 0.25% WO_3 then the enriched lenses will be needed to maintain a mill head assaying in excess of said minimum. Therefore, I do not recommend the exclusive mining of the high grade ores averaging 0.75% WO_3 or better and thereby spoiling such an excellent open pit operation.

DEVELOPMENT

It is my opinion that before any large scale development campaign is undertaken, that the deposit should be carefully surveyed and mapped. The mapping should indicate the large zones that are mill ore. The zones too low in value for milling should be properly marked in order that the pit operator will be able to mine selectively with power shovel, sending to waste dump the rock broken which will be below the minimum grade established for milling.

I agree with your proposed plan to construct a road with an upgrade of not more than 12½% to the bottom of the deposit as exposed on surface and thence a switch-back road of same grade from bottom to top of the deposit. The open cuts representing the roadway will expose at several horizons appreciable widths of the various zones of enrichment in the deposit as exposed on the surface but now covered with slide rock. In addition, the roadway will make almost any part of the deposit accessible. The slope of the hillside is approximately 30 degrees. Adits into the deposit, and diamond drill holes, will be easily driven from the roadway. Obviously, a deposit of the magnitude evidenced by the surface exposures of this deposit will require several thousand feet of adits, crosscuts and diamond drill holes in order to fully explore and prove or disprove the tonnage and grade of ore estimated in this report.

CONCLUSION

I believe that this deposit is worthy of the amount of development work recommended in this report and that such development work will prepare the deposit for subsequent large scale operations in open pit by power shovel methods. All recommendations made in this report are based upon the present price of tungsten trioxide created by the National need for this strategic mineral for defense purposes. My estimate of 500,000 to 1,000,000 tons of ore averaging 0.25% to 0.50% WO_3 is a very conservative one, and there is an excellent chance of developing several times this amount of ore when northerly and southerly extensions of this deposit are explored.

During World War II I was employed by the Reconstruction Finance Corporation and Metals Reserve Company as Supervising Engineer, and during said time, I purchased approximately 160,000 tons of tungsten ore and examined and visited many tungsten properties. I am convinced that the Monte Cristo tungsten deposit, as above described, is one of the largest known potential open pit tungsten mines in the State of Nevada.

Respectfully submitted

/s/ Glenn G. Gentry

Glenn G. Gentry
Mining Engineer
P. O. Box 2516
Reno, Nevada

RECONNAISSANCE REPORT

ON THE

MONTE CRISTO TUNGSTEN DEPOSIT

C
O
P
Y

LOCATION:

The Monte Cristo Tungsten Deposit lies on the west slope of White Pine Mountain (formerly designated by the G.L.O., Pegcuip Ridge), in the White Pine Range, White Pine Mining District, White Pine County, in east central Nevada, and with respect to the G.L.O. survey occurs chiefly in Sections 16, 21 and 28, Township 16 North, Range 57 East, M.D.B. & M.

It is approximately 32 miles by airline and 62 miles by road, west of Ely, the county seat and the center of an important mineral bearing area which, among other things, contains Nevada's most important copper mining activities. The area is served by U. S. Highways 6, 50 and 93 and by the Nevada Northern Railway, a feeder line which leaves the S.P.R.R. at Cobre, 140 miles to the north. To reach the Monte Cristo Tungsten Deposit from Ely, U. S. Highway 50 is travelled for 45 miles in a westerly direction, and from this point fair desert roads of generally easy grades extend into the Monte Cristo section which lies about 15 miles south of U. S. Highway 50. From the main desert road short roads extend into the canyons which dissect the deposit thus making large portions of it fairly accessible to motor vehicles.

PROPERTY:

The known portions of the deposit are covered by 34 contiguous unpatented lode mining claims of approximately 20 acres each which are owned and held as two contiguous groups of 16 and 18 claims respectively. Both of these properties, singly or collectively, are now available to prospective operators.

CLIMATE:

The climate is typical of the high altitudes of eastern Nevada, short pleasant summers followed by a brief fall season with the winder snow storms sometimes arriving as early as the middle of November. The winters are generally severe and the ground is covered with snow for at least four months of each year. The annual precipitation, chiefly snow, seldom exceeds 15 inches. The heaviest rain fall occurs during mid-summer and early fall. Sub-freezing temperature is the rule during the winter months. Occasional heavy snows during these months may be expected to interfere to some extent with mining operations.

VEGETATION:

Nearly fifty percent of the surface of the deposit consists of bare rock outcroppings and talus covered slopes and is barren of any vegetation. But in other parts of the deposit and in adjacent areas there is a considerable growth of stunted pinon pine, juniper and mountain mahogony trees with here and there small open grassy areas and occasionally small thickets of brush. On the lower slopes and at the base of White Pine Mountain desert sage and scattered juniper trees are the principal vegetable growths. The timber growth is chiefly valuable for domestic uses but some of it is also suitable for light mining operations.

ELEVATIONS:

The elevations at the deposit range from a minimum of around 72000 feet near the north end to nearly 8000 feet at the south end. The maximum elevation of 9015 is at a point on the ridge which divides Hoppe and Little fair canyons. The mean or average elevation of the deposit is approximately 8000 feet.

TOPOGRAPHY:

The surface of the deposit and its immediate vicinity is extremely rugged in character and consists chiefly of a series of short steep westerly trending canyons which head high up on the western slope of White Pint Mountain and drain into Newark Valley on the west.

The sides of the canyons are generally steep and in places are characterized by the presence of small bluff-like outcroppings which are surrounded by talus covered slopes which generally culminate in rocky bluffs forming the narrow crests of the ridges lying between the canyons. The canyons range from 500 to over 1600 feet in depth and their slopes will often exceed 45°. Their floors have, in some instances, grades in excess of 600 feet to the mile.

WATER:

No water flows in any of the canyons excepting during a period of heavy rains. Two perennial springs occur in the immediate vicinity of the deposit. One of these, lying above and about one quarter mile east of the deposit in Hoppe Canyon at an elevation of 9100 feet is reported to have a flow of 15 gallons per minute. The other spring, known as the Monte Cristo Spring, lies at the base of White Pine Mountain about one quarter mile west of the deposit at an elevation of 7300 feet. It is reported to have an average flow of over 300 gallons per minute.

Other possible sources of water supply exist at Green's Ranch and in Newark Valley. At Green's Ranch, which is about six miles south of the deposit, there are several large springs, the water from one of which is reported to exceed in volume that of Monte Cristo Spring. The deposit lies near the southern end of Newark Valley which covers several hundred square miles and is the natural drainage basin of several mountain ranges. Its water table lies to the surface and there is every reason to believe that Newark Valley can be expected to be an unfailing source of water supply, when needed, for mining and milling operations of any magnitude.

HISTORY:

The western or Monte Cristo section of the White Pine Mining district, although less than six miles southwest of Hamilton section, has heretofore received little attention from geologists and mining men who have covered the Hamilton and adjoining areas. These areas were noted for their rich silver and silver-lead mines during the period 1867-1887 with a reported production of over $20,000,000.00 and during this period the prospecting of these areas must have been intense. But for some reason, possibly because of a difference in the rock formations, the Monte Cristo sections was overlooked. Apparently the only exception to this was the mining operations carried on near the head of a gulch near Monte Cristo and which operations are reported to have produced $80,000.00 in gold from comparatively shallow workings in a quartz vein. The gulch referred to is now known as $80,000.00 Gulch.

In 1875-1876 a small matte - smelter was erected near Monte Cristo Spring to treat the ores of the Shermantown section which lies about six miles to the southeast of Monte Cristo. This smelter apparently never operated as is indicated by the condition of the flues and the complete absence of slag in the vicinity.

There is a dearth of published geological data on the Monte Cristo section. As far as is known to the writer none of the geologic papers listed in the bibliography of the Hamilton district have mentioned the Monte Cristo section. A brief mention of a contact-metamorphic zone at Monte Cristo is made by Francis Church Lincoln in "Mining Districts and Mineral Resources of Nevada", page 258.

The Monte Cristo Tungsten Deposit was discovered in June, 1939, and by the end of 1939, 34 lode mining claims covering all visible portions of the deposit had been located. Shortly after its discovery the writer made several visits to the deposit with a view of determining its economic possibilities. Later through the efforts of the writer the Goldfield Consolidated Mining Company entered the district and made, under the direction of Mr. Herbert N. Witt, their chief geologist, a partial examination of the deposit. This consisted of aerial surveying and mapping followed by the extensive use of fluorescent lights of surface outcroppings and this in turn followed by the cutting of numerous samples which were later tested for their economic minerals. In addition to the scheelite which was sought for mineral the tests revealed the presence of considerable powellite in the ore. The presence of this mineral in the deposit had hitherto been unsuspected, and althought the tests apparently revealed the presence of scheelite in satisfactory quantities, Mr. Witt, due to the presence of the powellite, became fearful of an involved metallurgical problem in the treatment of the ore and abandoned all further investigation of the deposit.

At the time no process that would successfully separate powellite from scheelite existed, but since then a process has been developed and is now in successful use in the treatment of a similar ore being mined near Bishop, Calif.

GEOLOGY:

The country rock of the White Pine Mining District consists of Paleozoic sediments which have been intruded by quartz-monzonite and granodiorite in late Cretaceous or early Tertiary time. According to Larsh a geologic section of the White Pine Mining District comprises over 15,000 feet of Paleozoic rocks made up as follows: - Over 1,000 feet of Cambrian limestones and slates; 7,000 feet of Ordovician sediments, including Upper and Lower Pogonip limestones; Eureka Quartzite and Lone Mountain limestones; 2,000 feet of limestone of Devonian age; and 5,400 feet of Carboniferous sediments, including shale, sandstone and limestone.

Large areas of the White Pine Range are underlined by a batholithic mass of quartz-monzonite or its differentiates. In the Monte Cristo section the batholith is represented by a small stock of cupola composed of a quartzose granitoid rock which is undoubtedly a differentiate of the monzonite and which occurs as a small nearly conical peak, several hundred feet high, at the western base of White Pine Mountain. The peak borders a large contact metamorphic zone on the west and its position suggests that it is the termination of a spur or finger from the main batholith which lies at some distance to the southeast.

Although unexposed in other portions of the section the finger appears to trend and possibly dip to the southeast as is indicated by the degree of metamorphism of the overlying rocks and the tilted position of their strata which in some places appear as a low anticline dipping about 15° to the southeast.

The intrusion of the monzonite in the Monte Cristo area uplifted and metamorphosed the overlying sediments and those at the contact with the small stock forming a contact metamorphic zone of considerable extent which, owing to limited marginal exposures, makes the defining of its surficial area somewhat difficult. But the zone is roughly pear-shape in plan with its small end to the north. It has a visible strike length of over 10,000 feet with its long axis striking NW-SE. At its smaller or northern end it is approximately 125 feet wide. From this point its width progressively increases towards the south until at a point about 2,500 feet from it southern end it reaches a width of over 2,600 feet. From this point to its southern end it narrows and is finally obscured by the overlay limestone.

In but few places is the border or margin of the metamorphic zone clearly defined. Much of it is obscured by vegetation or by a mantle of talus. Where exposed, excepting in a few places, there is no sharp division between the metamorphic and sedimentary rocks, but rather a gradual transition from one to the other. But at its northern end the zone appears to split into pointed fingers that pass into or under the limestone.

Still on the west side of White Pine Mountain, to the east and northeast of the contact metamorphic zone, but separated from it by a wide belt of Pogonip limestone, is a large intrusion of granodiorite. With the exception of the stock on its western border there are no visible intrusive rocks within close proximity to the contact metamorphic zone. But on its eastern border considerable quartz-monzonite porphyry float occurs, indicating the nearby presence of dikes or sills of this rock.

PETROLOGY:

The surface of the contact zone can roughly be divided into areas according to the color of its rocks. Beginning near its northern end and coinciding with its long axis a strong belt of garnetized rock of irregular width extends almost to its southern end. This belt ranges in width from a few feet to over 500 feet and in color from a light rusty color to a rich dark brown, according to the degree of garnetization. On either side of the garnet belt but still within the borders of the contact zone the rocks range in color from a light gray to a deep greenish gray.

As a rule the garnet belt stands above the surrounding areas in bold relief, usually as blocky bluff-like masses with talus covered bases. The rocks are strongly jointed by two systems of joint planes which strike at near right angles to each other. And in the best developed of these systems the joint planes coincide with the long axis of the contact zone and have nearly vertical dip.

Excepting where completely garnetized the rocks of this belt consist chiefly of garnet, quartz, calcite and greenish mineral resembling chlorite with scheelite apparently the only ore mineral.

The mineral constituents of the rocks in the gray areas are similar to those of the rocks of the garnet belt with the exception that although general garnetization of these areas occurs to only a slight degree. The garnets appearing chiefly as narrow bands in the rock or in the planes of fissility where the rock has a schistose structure. The rocks have a medium to fine grain texture and in places are largely composed of quartz which occurs in granular form or as thin seams or as narrow veinlets.

The ore minerals of these areas are scheelite and powellite which apparently are the only minerals occuring in the deposit in sufficient quantities to be of economic value. At the northern end of the zone some gold is found, and in various parts of the zone small amounts of malachite are seen. Iron pyrite occurs sparingly and in a few small areas.

FAULTING:

Several faults in the contact zone were observed. None of these were given a close study by the writer as they have apparently had little influence on the formation of the ore deposit within the contact zone. The principal faults are pre-mineral and their fissures are generally occupied by quartz veins of little economic value. Minor folding or contorting with some slight overthrusting of the limestone strata occurs on a portion of the eastern border of the contact zone.

ORE DEPOSIT:

EXTENT: There is a strong possibility that the entire visible contact metamorphic zone may be an ore deposit. This belief is based on the results obtained from sampling and other investigations of various portions of the zone. These investigations, though far from covering in detail all portions of the zone, revealed the presence of scheelite and powellite over large areas. Probably a thoroughly systematic sampling would reveal other areas that were subcommercial or barren. A systematic sampling of the entire zone is beyond the means of property owners. Over 200 samples cut by the claim owners and possibly that many more cut by the Goldfield Consolidated Mining Company together with the widespread use of fluorescent lights have failed to reveal any large portion of the contact zone that was barren of scheelite and/or powellite.

ORE MINERALS: The ore mineralization or enrichment, as in most contact-metamorphic deposits where little or no secondary concentration has taken place, is erratic, and while dissemination of the ore minerals is general, local concentrations appear to be the rule. This was indicated by the use of fluorescent light rather than by sampling. Through this method the enrichment was frequently shown to occur in strong zones of varying width and strike length.

Within these zones there is generally considerable uniformity in the distribution of the ore minerals, but occasionally the enrichment also appears as highly concentrated parallel streaks or narrow belts within the zones. Some of these belts are up to four feet in width.

Towards the northern end of the deposit in an area of good exposures an enrichment zone over 100 feet in width occurs. Sampling of this zone has revealed a WO_3 content of over 1% for the zone with one belt near the middle of the zone running from 3% to 8% WO_3.

It is noticeable that in those zones of enrichment quartz is the predominant mineral and occurs chiefly as granular quartz; in seams or veinlets or, in irregular masses. The scheelite appears to be associated with the quartz and the higher the quartz content in the ore the greater the scheelite content.

Scheelite (calcium tungstate), contains 80.6% tungsten trioxide and 19.4% lime. It occurs in the ore as individual crystals, crystalline aggregates, and in small granular masses. Its color is a pale, grayish white to nearly transparent, closely resembling the quartz in this respect. The scheelite crystals are generally quite small in size ranging from less than 1/16 inch to slightly over 1/8 inch in diameter. Their size and color make them practically indistinguishable, without the aid of fluorescent light, from the granular quartz crystals.

Powellite (calcium molybdate) contains when pure, according to its formula, $CaMoO_4$, 47.9% molybdenum and 52.1% lime. But powellite from many sources has been found to carry from 10% to 12% tungsten trioxide which is believed b

many authorities to be present as scheelite and in a mechanical mixture rather than a chemical compound.

The powellite appears to be an oxidation product of the primary sulphide molybdenite and it occurs in the ore of the deposit as a grayish white powdery mineral occupying minute seams or as a coating of the scheelite. This mineral cannot be distinguished in the ore by the unaided eye but can easily be detected in the ore concentrates through the use of fluorescent light or by analysis.

The Monte Cristo contact metamorphic zone consists chiefly of limestones altered to tactite by solutions accompanying the intrusion of a granitic rock. The scheelite-powellite deposits within the zone are of the replacement type, yet, are apparently singularly free of the undesirable mineral elements ordinarily present in minerals of the contact-metamorphic deposits. The ore, in consequence, does not contain serious amounts of copper or iron pyrites. No phosphorous mineral is known to be present, and molybdenum occurs in the powellite only. Some manganese oxides are found in association with the few quartz veins occuring within the zone.

SAMPLING: The deposit has not been systematically sampled. This task is beyond the means of the present owners who have to date cut about 200 samples in various parts of the deposit, chiefly with a view to determining the extent of the ore mineralization. And, as before mentioned, the Goldfield Consolidated Mining Company cut a considerable number of samples over a large portion of the deposit. As far as is known to the writer, few if any of these samples were barren of scheelite or powellite.

To date the tests of the samples taken have revealed their WO_3 content to be from .2% to over 6%, with an average of .6% for all of the samples. These figures to not include the WO_3 content of the powellite. This mineral occurs in varying amounts and generally exceeds the scheelite in the ore in the ratio of at least 2 to 1.

The sampling, although of a reconnaissance nature only, has indicated a wide spread, though erratic, distribution of the scheelite throughout the contact metamorphic zone and leads to the belief in the possibility of the existence of a huge low grade commercial ore deposit embracing most if not all of the zone. But the writer is more inclined to the belief that a thorough investigation of the deposit would result in the discovery of certain large areas bearing ores of a grade much higher than the average indicated for the whole contact zone. In mining these areas, selective mining would, in a sense, be employed.

MASS OR VOLUME OF THE ORE DEPOSIT: Until it is definitely determined by a thorough sampling and by other investigations such as core drilling or exploratory mining operations the mass or volume of the commercial ore body or bodies lying within the contact metamorphic zone cannot even be estimated, but on the assumption that the entire zone constitutes a workable low grade ore deposit its mass or volume is indicated b the following calculations: - A base line established at the lowest point in the deepest canyon dissecting the contact metamorphic zone and coinciding with the long axis of the zone has a length of over 10,000 feet. The average width of the zone exceeds 1,000 feet and the average vertical depth from the surface to the base line exceeds 600 feet. This presents a deeply serrated figure from which is deducted two-thirds of the mass of a regular solid of similar dimensions, giving a rock mass over 166,000,000 tons above the base line. The ore mineralization extends to an unknown depth below the base line but until this horizon is investigated no estimate of volume can be made.

In the above tonnage estimates only the rock mass within the tactitic area of the contact metamorphic zone was considered. The enclosing zone which at best is poorly defined and is thought to be barren was not included. The dimensions given for the above tonnage estimates were based on the sampling elsewhere mentioned in this report and which indicated a general though erratic scheelite enrichment within the area. Whether or not the entire rock mass is similarly enriched remains to be seen. In this connection one interesting fact is offered. Sampling the rocks exposed in the bottoms of the canyons has revealed no apparent change in the grade of enrichment between them and the rocks of the tops of the highest ridges.

Although as yet unproven, there is a bare possibility that the entire rock mass referred to constitutes an ore deposit of commercial grade, and, that, although possible, the writer believes this to be unlikely and holds to the belief previously expressed that thorough investigation of the deposit is more likely to reveal it as consisting of a number of unconnected and erratically distributed deposits, some of which may be of large volume, surrounded by areas carrying ore of sub-commercial grade.

PLANS AND COSTS OF INVESTIGATION: It is advisory to divide this work into two stages with the execution of the second stage contingent on the results obtained from the first stage of the investigation. The preliminary or first stage to consist of the usual checking of claim lines, titles, physical conditions, etc., followed by a careful examination of the surface with fluorescent lights to determine the character, extent and grade of the scheelite mineralization; the richer zones to be indicated for later sampling. This is to be followed by the sampling and assaying of theere of these zones and the results obtained plotted on a sample map or chart. If the results obtained from this sampling were satisfactory then stage No. Two would naturally follow. The cost of the first stage of the investigation would range between $3,000.00 and $5,000.00 and would consume a period of about ninety days time.

The Second Stage of the investigation would cover the sampling of other portions of the deposit as indicated by the fluorescent light. Areas showing satisfactory results would then be subjected to sub-surface exploration by core drilling, tunneling, crosscutting or shaft sinking as deemed expedient, followed by a thorough sampling of all exposed faces.

The cost of this stage of the investigation woudl approximate $100,000.00 and would consume approximately one year's time. Not all of the contact metamorphic zone could be investigated as outlined for the above amount. The sub-surface investigation would naturally be confined to the most favorable areas and areas with unfavorable surface showings whould likely be eliminated from this class of investigation. The writer believes that well within the cost and time limits as set forth several commercial ore bodies large enough to warrant the initiation of plans for extensive mining and milling operations would be delineated.

WORKING METHODS AND COSTS: A large portion of the deposit is ideally situated for cheap, large scale mining operations, using open pit or quarrying mining methods. If necessary, mining operations could be carried on simultaneously in all of the five canyons that dissect the contact metamorphic zone. Short down grade hauls from these canyons to a mill centrally located at Monte Cristo Springs are of considerable importance in any plan of economic operations.

On the basis of a production of 500 tons daily the mining, milling and hauling costs should not exceed $3.00 per ton. With a larger daily production

the costs would necessarily be lower. The costs are segregated as follows:

Mining $0.50; Hauling to be done by trucks, $0.25 per ton; Milling and marketing, $2.25 per ton.

FINANCIAL ASPECTS: The ore bodies within the tastitic area are probably large and may be expected to sustain long term mining and milling operations. It is believed that some of these ore bodies will average as much as 1% WO_3 per ton, while other smaller bodies will run as high as 3% WO_3 per ton. But using .5% WO_3 as the minimum grade of ore that can be worked at a profit (on the basis of 500 tons per day), with reasonably efficient concentrating methods, the recovery should not be less than 80%, or 8 lbs., of WO_3 per ton of ore treated.

At the present market price of $22.00 per unit of 20 lbs. the recovered WO_3 would have a value of $8.80. From this amount is deducted the operating costs of $3.00 per ton, leaving a net of $5.80 per ton. Further deductions in the form of overhead, taxes, etc. are to be made. But in view of the rapidly changing tax structure the writer has not attempted to fix these charges.

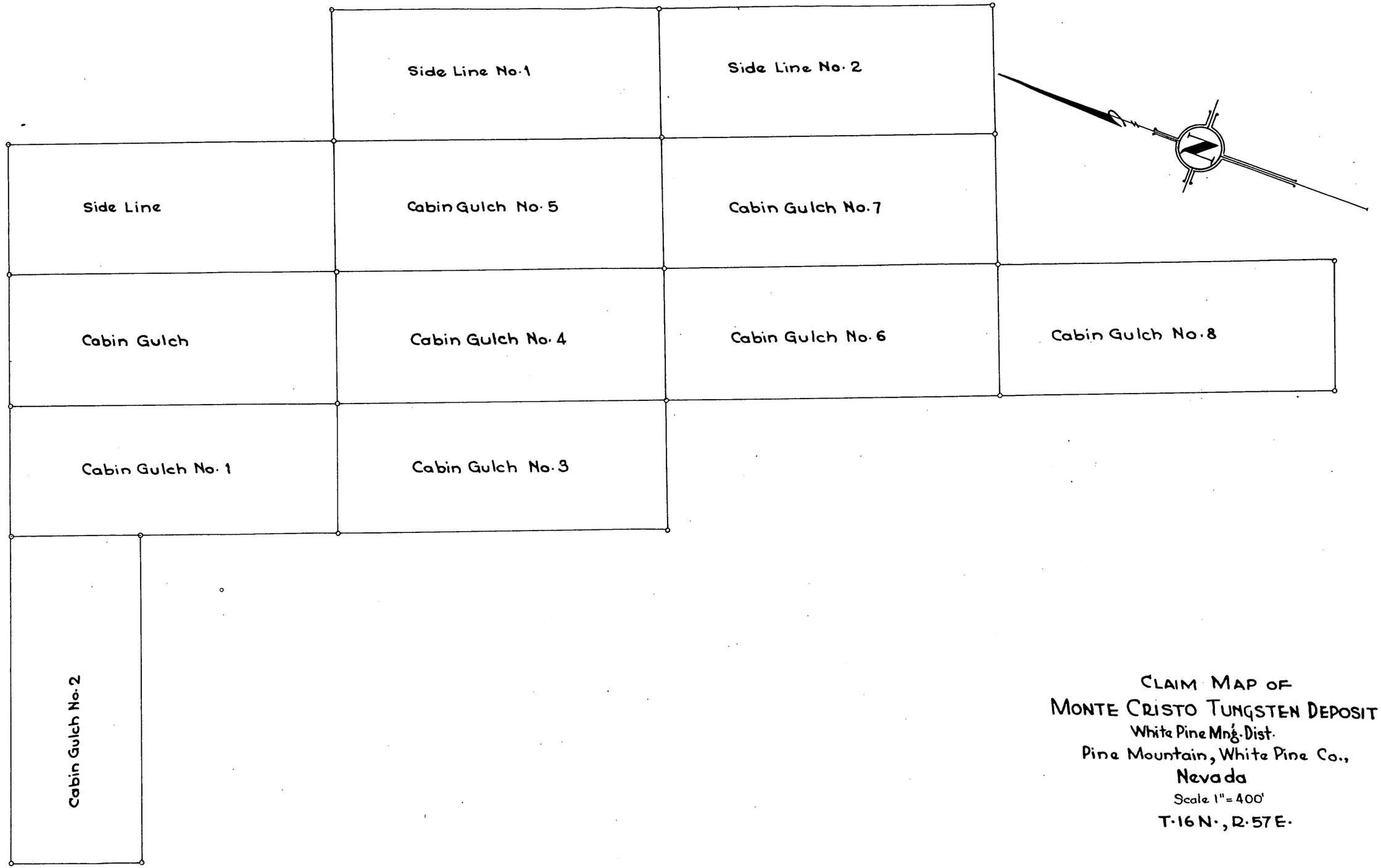
CONCLUSION: While the extent and quality of the Monte Cristo tungsten deposit are not as yet unknown, it has the possibility of becoming the largest commercial deposit of its kind in the U. S. In sizes compares favorably with any of the porphyry copper deposits or the Climax Molydenite deposit. In the event an investigation shows it to be commercial the capital putting it over would be in a leading position to the tungsten markets of the U. S. Deposit is undoubtedly worthy of at least a good preliminary investigation.

In fixing the minimum tungsten trioxide content of the ore at .5% only the mineral scheelite was considered as the source of this. Its associated mineral, powellite, through the contained tungsten trioxide and molybednum, would add considerably to the net value of the ore.

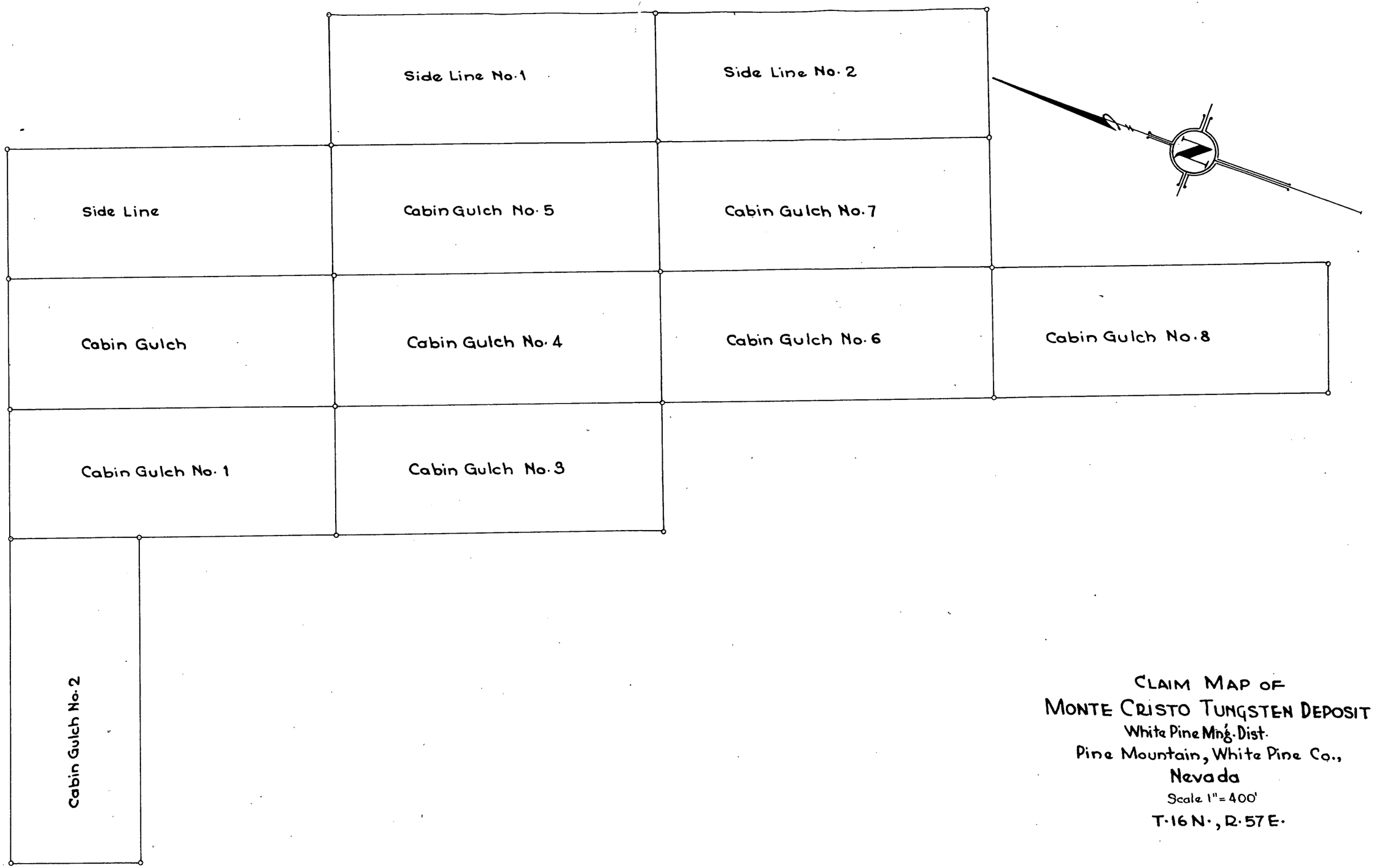
Respectfully submitted

/s/ JOS. G. O'BRIEN
Mining Engineer
Box 968
Ely, Nevada

Sept. 15, 1941.



CLAIM MAP OF
MONTE CRISTO TUNGSTEN DEPOSIT
White Pine Mng. Dist.
Pine Mountain, White Pine Co.,
Nevada
Scale 1" = 400'
T. 16 N., R. 57 E.



CLAIM MAP OF
MONTE CRISTO TUNGSTEN DEPOSIT
White Pine Min'g. Dist.
Pine Mountain, White Pine Co.,
Nevada
Scale 1" = 400'
T. 16 N., R. 57 E.

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

[illegible] Building
[illegible] Market Street
San Francisco 2, Calif.

~~1012 Flood Building~~
~~870 Market Street~~
~~San Francisco 2, Calif.~~

OFFICIAL BUSINESS

PAYMENT OF POSTAGE, $300
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Interior Building
Washington 25, D. C.

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