DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Idm-E NO._____

DMEA NO. 4908

Application
- [X] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [X] Application and attachments

Right Side

- [ ] Project summary (final)
- [ ] Work Comoleted analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [X] On-site Exam Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No._____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

Folders No. II : Maps (Use pocket folder or envelope) + Photographs

Folders No._____: Settlement Sheets

Folders No._____: Drill Logs

Folders No._____: Royalty material

17963

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

December 30, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 2 1958

DATE	INITIALS	CODE

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid (Copper, Gold, Silver)
Tulsa Minerals Corp. (Bobtail and Extension Mine)
Gila County, Arizona

Enclosed are the original and two copies of the subject application. One copy of the application is being retained in our file.

The Applicant proposes to explore the property by non-core and core drilling at a total estimated cost of $27,427.67.

Copies of bids from Boyles Brothers, R. S. McClintock, and Minerals Engineering Company are attached to each copy of the application.

W. H. King

Encls.

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

I N D E X

ITEM 1 . . . . . Applicant's Property Rights

ITEM 2 . . . . . Physical Description

ITEM 3 . . . . . Accessibility of Project

ITEM 4 . . . . . The Exploration Project

ITEM 5 . . . . . Experience

ITEM 6 . . . . . Estimate of Costs

ITEM 7 . . . . . Financing

TULSA MINERALS CORP.

J. S. BURDEN
PRESIDENT
P. T. THIBODAUX
VICE PRESIDENT
W. G. EASTMAN
SECY-TREAS.

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 2 1958

DATE	INITIALS	CODE

TE 8-0545
BOX 5216
TULSA, OKLAHOMA

DMEA
DEPARTMENT OF THE INTERIOR
DEC 30 1957
REGION III
DENVER, COLORADO

December 28, 1957

Mr. W. H. King, Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. King:

We are enclosing four copies of our Application For Aid In an Exploration Project, along with the necessary supporting papers. This Application covers the Bobtail and the Extension, adjacent properties, located 14 miles south of Globe, Gila County, Arizona.

It will be noted that we have done extensive prospecting, surveying and mapping and have reopened old diggings, taken extensive samples on the properties and run several amenability tests during the last four months at a cost to Tulsa Minerals in excess of $10,000 ($10,041.94 as of November 30, 1957). It is the results of these findings that is the basis of our request for aid in the further exploration of these properties.

We trust that you will find our Application in order. However, should any question arise, please contact the writer at the address given above.

Yours very truly,

TULSA MINERALS CORP.

J. S. Burden

J. S. Burden
President

JSB:hl
Enclosures

Form MF-103
Revised Feb. 1957

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1035.3
Approval expires June 30, 1958

APPLICATION FOR AID IN AN EXPLORATION PROJECT

PURSUANT TO DMEA ORDER I, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

NAME OF APPLICANT (Full legal name and mailing address as it should appear on contract if one is executed)

TULSA MINERALS CORP.
P. O. BOX 5216
TULSA, OKLAHOMA

DMEA
DEPARTMENT OF THE INTERIOR
DEC 30 1957
REGION III
DENVER, COLORADO

APPLICANT NOT TO USE THIS BLOCK

Docket Number: DMEA-4908
Date Received: 1-2-58
Government Participation %:
Region: III
Division Code: 500

BUSINESS ORGANIZATION (Check one)

- Individual [ ]
- Corporation [X]
- Partnership [ ]
- Other (Specify) [ ]

State in which firm is organized: Oklahoma

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

Name	Address	Title
J. S. Burden	P.O. Box 5216, Tulsa, Okla.	President
P. T. Thibodaux	P.O. Box 5216, Tulsa, Okla.	Vice President
William G. Eastman	P.O. Box 5216, Tulsa, Okla.	Secretary-Treasurer

Mineral(s) for which you wish to explore: Copper, Gold and Silver

Estimated Cost of Project: $ 27,427.67

LOCATION OF PROPERTY

Name	County	State
Bobtail and Extension	Gila	Arizona

GENERAL INSTRUCTIONS

Before filling out this application, please read DMEA Order-I, Amended, "Government Aid in Defense Exploration Projects." To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit four copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 1, existing mine workings and geology in item 2, and the proposed exploration project in item 4. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 2(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest DMEA Field Office.*

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

December 28, 1957
Dated

J. S. Burden
BY (*Signature*)

President
Title

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. *Applicant's Property Rights:*

(a) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all land adjacent to the proposed project area which you own or control. Describe any part of the project land or workings which should not be subject to Government lien for royalty payments. If the land consists of unpatented claims, state the book and page number for each recorded location notice, including amended locations, and the place where recorded (courthouse, recorder's office, county, and state).

(b) State all the names by which you know the property.

(c) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise. If you are not the owner, submit with this application one exact copy of the lease, contract, or other document (with address of owner) under which you control the property.

(d) Describe all liens, mortgages, or other encumbrances on the property.

2. *Physical Description:*

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the lands, including existing mine workings. Describe all production facilities.

(b) State your interest, if any, in operations stated in 2*(a)*.

(c) State, as far as you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves on the property giving quantities and grades and sampling methods used, supporting your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you may have, indicating on each whether you require its return to you.

3. *Accessibility of Project:*

(a) To aid DMEA representatives who may be required to examine the property, state the name and address of the person who will meet the DMEA representative; give directions for reaching the property; and describe accessibility of the property including the mine workings.

(b) Name the shipping and supply points and places where employees reside and state the distances between them and the property.

4. *The Exploration Project:*

(a) Describe fully the proposed exploration project giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and longitudinal and cross sections as necessary. Show the location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *property boundaries* or to the closest identifiable corner.

(b) If an access road to the project must be built, show the location on the property map and state the length, type, and construction methods proposed.

(c) In the event that an exploration contract with DMEA is executed, how soon will the work start and how many months will be required to complete it? State your anticipated average daily or monthly rate of progress for each type of work.

5. *Experience:*

State your operating experience and background with relation to your ability to carry out this exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of Costs:*

Furnish detailed estimates of the costs *for each item of the work proposed in 4(a)* under the headings listed below with a total for each heading and the estimated total cost of the project. Costs for any work to be performed by an independent contractor should be shown separately under category *(a)* below. Costs for any work that is not to be performed by an independent contractor should be given in detail under categories *(b)* through *(g)*.

(a) Independent contracts. State the cost of any proposed independent contract for the performance of all or any part of the work, expressed in units of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. *(Note* – If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. For necessary supervision, engineering and geological services, and labor, include an itemized schedule of numbers, classes, rates of wages, salaries or fees, and periods of employment. State whether these technicians and employees are available.

(c) Operating materials and supplies. List items of material and supplies with their cost. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of operating equipment to be used giving specifications and indicating how each item is to be acquired – i.e., rented, purchased, or provided by the applicant. If it is rented or purchased, state the estimated rental or purchase price. If it is to be furnished by the applicant, give its present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of necessary *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant, which will be used on the exploration project.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration project stating specifications and cost including labor, materials and supervision.

(g) Miscellaneous. For the operating equipment listed in 6*(d)*, describe the type and estimate the cost of repairs and maintenance expected during project operations. Do not repeat initial repairs listed in 6*(e)*. Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories.

Note – No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. *(a)* State whether you are prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation stated in Sec. 7 of DMEA Order–I, Amended.

(b) Explain to what extent you propose to furnish your share of the costs by providing money, by use of equipment owned by you, or otherwise.

* * * * *

INT.-DUP. SEC., WASH., D.C. 15539

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 2 1958

Diamond Core Drilling
Mining
Quarries
Shaft Sinking
Tunnel Driving

Boyles Bros. DRILLING COMPANY

CONTRACTORS - ENGINEERS - GEOLOGISTS
General Offices
1321 South Main Street Phone HUnter 4-4401
SALT LAKE CITY 15, UTAH

57 NOV 21 AM 9:20

November 18/57

Reply to:
1016 East Minnesota
Phoenix, Arizona

Mr. Everett Costle
Tulsa Minerals Corporation
Box 1662
Globe, Arizona

Dear Mr. Costle :-

After inspecting the property to be drilled, approximately fourteen miles south of Globe, Arizona we submit the following alternate proposals.

Non-Coring with air 2.30 per foot (You supply the air)

Non-Coring with water 3.30 per foot

Coring where requested 5.40 per foot

Cementing if necessary 9.60 per hour plus cost of cement including drill mud.

Due to the softness of the vein material we would drill the non-coring hole large enough so as to put in BX casing and drill through the vein BX size. BX core is 1-5/8" in diameter. Any size smaller than this would not give you maximum core recovery and I do not think you would be satisfied with the results.

It was indeed a pleasure meeting you and if any questions arise concerning the bid do not hesitate to call us. Thanks again for extending us this invitation to bid on yuer work.

Very Truly Yours
J.E. Roberts
J.E.Roberts
District Mgr. Arizona Division

R. S. McClintock DIAMOND DRILL COMPANY
CONTRACTING • DIAMOND DRILLS AND SUPPLIES • DIAMOND BITS

PHONE RI. 4197
W. 418 2ND AVE.
SPOKANE, WASH.

Globe, Arizona
Nov. 23, 1957

Mr. E. L. Costle
Tulsa Minerals Corporation
P. O. Box 1662
Globe, Arizona

Dear Mr. Costle:

Since talking to you by telephone last nite, we wish to submit an alternative quotation relative too and a part of our Quotation dated Nov. 19, 1957. This will be with the understanding that you will build and maintain adequate roads to the drill setups for the transportation of the drill, supplies and drill crew and that when necessary, you will furnish a Cat to aid us in moving from location to location. We further understand that full core recovery will not be expected until reaching proximity of the Vein, at which point we are to exercise utmost care and will use 5' core barrels most favorable to core recovery. We will attempt to cut the vein with BX size hole giving a 1 5/8" core.

We propose to furnish the diamond drill rig, circulating pump, rods, casing, core barrels, diamond bits, cement, drill crew labor and all diamond drill accessories for the following prices per foot:

3 9/16" size and Collarpipe:	0' to 20'	@ $7.90 per foot
NX	0' to 250'	@ $7.25
BX	0' to 200'	@ $6.50
BX	200' to 400'	@ $6.90
AX	0' to 400'	@ $6.25 per foot

In the event of loose or caving ground or water courses which makes drilling impractical without the use of cement or casing, we will furnish, place and redrill the cemented portion of the hole, or pull, ream, place and seat casing for the following prices per foot:

Drill Cement:	NX	0' to 400'	@ $3.75 per foot
	BX or AX	0' to 400'	@ $3.25
Ream Casing:	NX	0' to 400'	@ $3.50 per foot
	BX or AX	0' to 400'	@ $3.00

R. S. McClintock DIAMOND DRILL COMPANY
CONTRACTING • DIAMOND DRILLS AND SUPPLIES • DIAMOND BITS

PHONE RI. 4197
W. 418 2ND AVE.
SPOKANE, WASH.

Nov. 23, 1957

In case of delay time for your convenience, and not due to fault of Contractor or breakdown of Contractor's equipment, such as waiting to spot holes, surveying, building road, laying pipe line or waiting for water if you choose to haul the water for us, we will expect to receive the sum of $8.00 per hour during such time as the drill crew remain on shift.

A charge of $200.00 will be made for Mobilization of crew, equipment and supplies payable on the first months Invoice and a charge of $100.00 will be made for Demobilization payable upon completion of the work.

If you choose the above footage quotation alternate bid, please sign one copy and return to us with a notation as to which alternative quote you choose for the water haul.

Very truly yours,

R. S. McClintock Company

by: M B Weaver
M. B. Weaver Vice-Pres.

Tulsa Minerals Corporation

By: _____

cc: Mr. Philip H. Irwin - Pres.
Spokane, Wn.

MINERALS ENGINEERING COMPANY
P. O. BOX 1951
GRAND JUNCTION, COLORADO

November 21, 1957

'57 NOV 23 AM 8:47

Tulsa Minerals Corporation
P. O. Box 5216
Tulsa, Oklahoma

Gentlemen:

Pursuant to the writers visit to your mining properties south of Globe, Arizona, we are hereby submitting our bid for approximately 2,000 feet of drilling consisting of nine holes having the following descriptions:

Location	Estimated Depths	Angle
1B	70 ft.	50°
	120	Verticle
2B	310	78
3B	390	75
4B	200	78
1T	180	Verticle
2T	270	"
3T	200	"
4T	150	"

We propose to diamond drill one shift for 24-hours under the following schedule of prices and specifications:

	Sizes & Prices per Foot		
Depth	NX	BX	AX
0-100 feet	$ 6.15	$ 4.90	$ 4.15
100-200 feet		6.15	5.05
200/300 feet		7.65	6.80
300-400 feet		8.90	7.80

Standby time will be $15 per hour; cementing and drilling out $18 per hour; cementing cost $1.45 per sack; reaming $18 per hour plus bit costs or at the rate of $4 per foot (whichever is less expensive). We will stand all mobilization and demobilization charges.

If the contract is for 2,000 feet and should the customer desire additional footage, a revision of the prices downward will be made to give credit for the above costs. This revision would also take into consideration the costs of drilling for the first 2,000 feet.

It is understood that you will provide all access and drill roads and will have a cat bulldozer available to repair and make new roads as required. If for any reason you desire not to provide drill sites and roads, we will remove the equipment from our truck-mounted drill and set it up over the hole location charging the standby rate.

Our complete drill equipment is located in Phoenix. The drillers are stationed in Grand Junction. We have had many years experience in performing this type of work. Many of our previous jobs have been in the Globe vicinity. We could move on the job within ten days to two weeks after notice.

Thank you for your kind consideration.

Very truly yours,

MINERALS ENGINEERING COMPANY

R G Sullivan

R. G. Sullivan
Vice President

RGS/k

cc - Mr. H. F. Beasley
Box 86
Casper, Wyoming

Mr. Everett Castle
Box 1662
Globe, Arizona

Mr. P. H. Bennett
Mr. Edson Foster

ITEM 1

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 1: Applicant's Property Rights

(a) Legal Description

The subject properties are those certain unpatented lode mining claims situated in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Doak Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Seven (7), Township Two (2) South, Range Fifteen (15) East, and Section Twelve (12), Township Two (2) South, Range Fourteen (14) East, of which the names, together with the numbers of Dockets of Official Record and the pages thereof where their respective location notices are recorded in the Office of the County Recorder of Gila County, Arizona, are as follows:

NAME		BOOK	DOCKET	PAGE
Extension			61	455
Extension No. 2			77	171
Extension No. 3			77	172
Extension No. 4			77	173
Burro No. 1		39		190
	Amended		74	101
Burro No. 2		39		191
	Amended		74	102
Burro No. 3		39		192
	Amended		74	103
Burro No. 4		48		227
	Amended		74	104
Bobtail No. 1		37		532
	Amended		74	108
Bobtail No. 2		37		533
	Amended		74	109
Bobtail No. 3		37		534
	Amended		74	110
Bobtail No. 4		37		535
	Amended		74	111
Bobtail No. 5		37		536
	Amended		74	112
Bobtail No. 6		37		537
	Amended		74	113
Bobtail No. 7		37		538
	Amended		74	114
Bobtail No. 8			64	239
	Amended		74	115
Bobaway		31		240
	Amended		74	106
Protection		38		434
	Amended		74	105
The Stolen Transit		38		570
	Amended		74	107

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 1 continued:

(b) Names by which property is known

Bobtail Property
Bobtail Mine
Mariana Mine

(c) Interest in land

Tulsa Minerals Corp. entered into a series of mining agreements in August and September, 1957, on two adjacent groups of properties; namely, the Bobtail and the Extension.

1. Bobtail Properties

We acquired the lease and option (Exhibit 1(c)-1) held by Don C. Adams, as lessee, and T. S. Armstrong et al, as lessors, by executing two instruments: Assignment Agreement (Exhibit 1(c)-2) and Assignment of Lease and Option (Exhibit 1(c)-3).

2. Extension Properties

We entered directly into a Lease and Option Agreement (Exhibit 1(c)-4) as lessee and Don C. Adams as lessor. In addition to this instrument, we prepared Memorandum of Agreement (Exhibit 1(c)-5) for recording purposes.

(d) Liens, mortgages or other encumbrances

None

LEASE AND OPTION

THIS AGREEMENT, made and entered into as of the 15th day of August, 1957, by and between THOMAS S. ARMSTRONG and _____ _____ ARMSTRONG, husband and wife, of 64 South Pitt Street, Carlisle, Pennsylvania, MRS. MARION ARMSTRONG of Mohawk Drive, McKeesport, Pennsylvania, MRS. MARION MOON of Mohawk Drive, McKeesport, Pennsylvania, and MRS. GRACE FINLEY of Globe, Arizona, hereinafter referred to as Lessors, and DON C. ADAMS of 905 North Sixth Street, Phoenix, Arizona, hereinafter referred to as Lessee,

W I T N E S S E T H:

WHEREAS, the said Lessors are the owners of certain unpatented lode mining claims located in Gila County, Arizona, more particularly described herein; and

WHEREAS, Lessee desires to secure a lease and option on said property for the term and on the conditions hereinafter particularly set forth,

NOW, THEREFORE, in consideration of Ten Dollars ($10.00), lawful money of the United States, paid by Lessee to Lessors, receipt whereof is hereby acknowledged, and in consideration of the mutual agreements hereinafter contained, the parties hereto do hereby agree as follows:

1. PROPERTY: The property covered by this agreement is:

Those certain unpatented lode mining claims situated in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Doak Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Seven (7), Township Two (2) South, Range Fifteen (15) East, and Section Twelve (12), Township Two (2) South, Range Fourteen (14) East, G. & S. R. B. & M., of which the names, together with the numbers of books and pages of Records of Mines or

numbers and pages of Dockets (an Official Record) where their respective location notices and amended location notices are recorded in the office of the County Recorder of Gila County, Arizona, are as follows:

NAME		BOOK	DOCKET	PAGE
Burro No. 1		39		190
	Amended		74	101
Burro No. 2		39		191
	Amended		74	102
Burro No. 3		39		192
	Amended		74	103
Burro No. 4		48		227
	Amended		74	104
Bobtail #1 (One)		37		532
	Amended		74	108
Bobtail No. 2		37		533
	Amended		74	109
Bobtail No. 3		37		534
	Amended		74	110
Bobtail No. 4		37		535
	Amended		74	111
Bobtail No. 5		37		536
	Amended		74	112
Bobtail No. 6		37		537
	Amended		74	113
Bobtail No. 7		37		538
	Amended		74	114
Bobtail No. 8			64	239
	Amended		74	115
Bobaway		31		240
	Amended		74	106
Protection		38		434
	Amended		74	105
The Stolen Transit		38		570
	Amended		74	107

together with all personal property and improvements thereon (a list of which with the values of the several items, marked Exhibit "A," is attached hereto and made a part hereof), water and water rights appurtenant thereto, and all other rights and privileges appurtenant thereto.

Lessors represent, covenant and warrant to Lessee that they are the owners of said unpatented lode mining claims and have a good and sufficient merchantable title thereto which is subject only to the paramount title of the United States of America; that said claims and each of them are properly and legally monumented; that the location and assessment work has been performed on each of said claims according to law for the period ending July 1, 1957; that said claims and each of them are valid, existing locations,

free from liens and encumbrances, and that Lessors have the right and power to convey the same, and that Lessors will warrant and defend Lessee in the undisturbed use and enjoyment of the demised premises, subject to compliance by Lessee with the terms and conditions of this agreement.

Lessors further agree to furnish Lessee an abstract of title to said claims, prepared by a duly licensed abstract company, on or before thirty (30) days from the date hereof.

2. FIRST PERIOD - POSSESSION: Lessors hereby give and grant to Lessee the exclusive right until midnight March 4, 1958, to enter upon, explore, sample and prospect the property, conduct mining operations thereon, and extract and ship ores therefrom subject to the conditions hereinafter set forth. During said period, herein sometimes referred to as "First Period," Lessee shall not be obligated to pay a minimum royalty.

3. POSSESSION AND OPERATION: At any time prior to the termination of the First Period, Lessee may give notice to Lessors that he has elected to continue his possession of the property with the right to conduct mining operations thereon, and to extract and ship ores therefrom subject to the conditions herein set forth. Such notice shall be accompanied by a payment of One Thousand Dollars ($1,000.00).

In the event that the notice and payment as herein in this Article provided shall not be given, then and in such event this agreement shall terminate on March 4, 1958 at midnight, and the Lessee shall have no further rights in or to the property (except the right to remove his machinery and equipment as hereinafter provided) and shall be under no further obligation of any type, nature or description with respect thereto.

Upon the giving of said notice and making the payment as provided herein, the Lessee shall be entitled to retain the exclusive possession of said property, and to explore, sample and operate the same, conduct mining operations thereon, and extract and ship ores therefrom, subject to the conditions herein set forth.

(a) All work done upon said property by Lessee shall be done in a good and workmanlike manner and after the manner of good mining. There shall be no high grading of the property. All workings where necessary, or where directed by the State Mine Inspector or his deputy, shall be timbered properly and substantially, and with the view of developing said property into a workable mine. All mine openings shall be kept clear of obstructions and in a condition so that they can be entered, except such openings as are not necessary for future operations of Lessee. The laws of the State of Arizona and all requirements of the State Mine Inspector shall be complied with promptly.

(b) Assessment work: Lessee shall perform, at his own expense, the annual assessment work on the unpatented mining claims hereinabove described, for each year during the life of this agreement, if assessment work is required by law, except for the year ending July 1, 1957, and shall complete such work on or before the 1st day of May of each year and furnish Lessors proper proof thereof in a form sufficient to be recorded; provided, however, that if this agreement is terminated and notice of such termination is given to Lessors prior to the 30th day of April of any calendar year, Lessee shall not be required to perform the assessment work for the assessment year ending on the succeeding July 1.

(c) Improvements: Lessee agrees to care for and maintain the property and improvements located on the demised premises, and more particularly described in Exhibit "A," subject to reasonable wear and tear if the same are used by Lessee, except where prevented by force majeure. If not used by Lessee, Lessee shall use reasonable care to protect the same, but shall not be obligated to replace, repair or restore the same. The term "force majeure" as herein employed shall include acts of God, fire, climatic conditions, shortage of water, strikes, failure of transportation facilities, rules, regulations or orders of the State,

federal or other governmental bodies, litigation, or unavoidable breakdowns, provided reasonable diligence in curing such breakdowns is exercised.

4. ROYALTY:

(a) Throughout the term of this agreement, Lessors reserve and Lessee agrees to pay royalties as a rental for the use and possession of the property as follows:

> A royalty of five percent (5%) of the net smelter returns or sale price received for ores extracted from said mining property by Lessee and shipped, smelted or otherwise disposed of, either in the form of direct smelting ores or concentrates.

(b) "Net Smelter Returns" and "Sale Price" defined:

"Net Smelter Returns," within the meaning of this agreement, shall be the correct returns as shown by the liquidation sheets furnished by the smelter treating such ores and concentrates after such smelter shall have made its deduction for freight and switching charges, treatment, and usual smelting deductions.

"Sale Price," within the meaning of this agreement, shall be the purchase price paid for such ores and concentrates f.o.b. mine bins. No sales may be made except to a smelter unless the "Sale Price" fairly reflects the value of the mineral contents of the ores or concentrates sold.

In arriving at the net smelter returns or sale price, no deduction shall be made for hauling or any other charge of whatsoever character, except as herein expressly provided.

The deduction and payment of royalties shall be governed by smelter values or sale price per dry ton of ores.

(c) Settlement: In the event that ores or concentrates shall be disposed of to a smelter, the smelter treating such ores shall be instructed to remit to the First National Bank of Arizona at Globe, Arizona, the royalties hereinabove provided, based on net smelter returns as above defined due from it on account of ores and concentrates smelted and purchased by said smelter; and such remittance, accompanied by three liquidation sheets for each lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days

apart, as may be agreed upon by the parties hereto and said smelter.

In the event said ores or concentrates shall be disposed of to a purchaser other than a smelter, said purchaser shall be instructed to remit to the said First National Bank of Arizona, at Globe, Arizona, the royalties hereinabove provided, based on the purchase price as above defined due on account of ores or concentrates purchased, and such remittance, accompanied by three liquidation sheets containing full and complete information regarding such sale and purchase, including the price, quantities of ores and concentrates, and lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days apart, as may be agreed upon by the parties hereto, and said purchaser and purchasers.

The remainder of the "net smelter returns" or "sale price" shall be paid direct to the order of Lessee.

The bank named shall be instructed to hold one copy of said liquidation sheets or statements, to deliver one copy to a representative of Lessors to be named by Lessors, and to deliver one copy to Lessee, or a representative to be named by him.

(d) Distribution of Royalties: Said First National Bank of Arizona shall be and hereby is instructed to divide and credit said royalties as follows:

Unto Thomas S. Armstrong	3/8
Unto Mrs. Marion Armstrong	1/8
Unto Mrs. Marion Moon	2/8
Unto Mrs. Grace Finley	2/8

Notwithstanding the foregoing, twenty percent (20%) of the share of each of the foregoing shall be distributed to Don C. Adams, 905 North 31st Street, Phoenix, Arizona, until the said Don C. Adams shall have received Thirty Thousand Dollars ($30,000.00).

(e) It is stipulated and agreed that the said sum of One Thousand Dollars ($1,000.00), if paid to Lessors pursuant to Article 3 hereof, shall be considered as an advance on minimum

royalties provided hereafter. Said sum of One Thousand Dollars ($1,000.00) if paid shall be paid to the First National Bank of Arizona at Globe, Arizona as and when hereinabove provided, and shall be distributed as provided in Subparagraph (d) hereof.

(f) Minimum Royalty: Lessee shall pay to Lessors a minimum royalty of Two Thousand Eight Hundred Forty Dollars ($2,840.00) per annum, beginning with the period March 5, 1958 through March 4, 1959, as follows:

Royalties shall be paid on ore shipments as hereinabove provided, and in the event that the royalties so earned during any royalty year, that is, the period from March 5 of any year through March 4 of the next succeeding year, shall not amount to the sum of Two Thousand Eight Hundred Forty Dollars ($2,840.00), Lessee shall pay to Lessors the difference between the sum of Two Thousand Eight Hundred Forty Dollars ($2,840.00) and the amount of earned royalties paid during such royalty year. Should this agreement be terminated during any royalty year, the minimum royalty shall be Two Hundred Thirty-three and 66/100 Dollars ($233.66) for each of the months during said royalty year that this agreement remained in effect; provided, however, that no part of the One Thousand Dollar ($1,000.00) payment provided for in Article 3 hereof shall be returned or returnable to Lessee.

5. TAXES: Lessee, so long as this agreement is in force and effect, shall pay all taxes levied or assessed on any machinery, equipment or improvements placed upon the property by Lessee, and shall pay all taxes levied or assessed against said property. Taxes on the property shall be prorated for periods of less than a calendar year. Lessee agrees to pay all so-called "sales taxes," "ad valorem" and "production taxes," now or hereafter levied by the State of Arizona, or by the United States of America, on ores and concentrates shipped from the property by Lessee under the terms of this agreement.

6. MACHINERY - REMOVAL:

(a) All machinery, equipment and personal property, together with all improvements (excepting ladders, timbers or ties in place underground) which may be placed on the property by and at the expense of Lessee, may be removed by him at any time within one hundred twenty (120) days after the termination of this agreement; provided, however, that no such property shall be removed at any time while the Lessee may be in default under any of the terms or provisions of this agreement, and the removal shall be effected in such manner as to avoid material injury or damage to the mine and improvements that are to remain thereon. If not so removed by the Lessee, the Lessors may, at their option, retain the said machinery, equipment and personal property, together with all improvements not removed, as and for their own, free of any claim of any kind on the part of the Lessee.

(b) All ores mined and placed on the dumps of the property by the Lessee during the life of this agreement may be removed and shipped by Lessee in the event of a termination of this agreement, but such ores shall be removed within sixty (60) days after such termination and shall be subject to royalty payments as herein provided. In the event such ores are not removed within said period as herein provided, title to ores not removed shall thereupon vest in the Lessors, free of any claim or charge of the Lessee.

7. NOTICE OF NON-LIABILITY: The Lessee shall not incur any debts or liens against said property or against any part thereof during the life of this agreement, and shall indemnify and save harmless the Lessors and said property from any and all liens. The Lessee further agrees to record and to post on the premises prior to commencing any operations thereon under this lease, and to use reasonable care to keep posted at its own cost and expense, a notice, as provided by law, that the said Lessee is responsible for all claims and demands in connection with the

operation of said property, and that the Lessors and said property are not liable for any claims or liens resulting from any such operations. All miners, laborers, and other persons who may labor or furnish any labor or materials in, for or upon said premises during the life of this agreement, and to whom any sum may be due from the Lessee for such labor or materials, shall be promptly paid by the Lessee. It is stipulated and agreed that should Lessee fail to fully complete and perform the condition hereinabove set forth with respect to the posting and recording of the notices of non-liability, such failure shall terminate and end any right, interest, claim or title that Lessee may have in or to said premises, or any part thereof, and shall terminate this lease forthwith. The form of such required notice of non-liability shall be furnished to Lessee by Lessors.

8. LIABILITY FOR INJURIES: Lessee hereby assumes any and all liability or liabilities arising or to arise from accidents or injuries to his agents or employees or any other person in or about the property while the same is in the possession of Lessee, and shall defend and hold Lessors harmless against any liability or responsibility for or on account of any such injuries, it being understood that the hazard of all such liability or liabilities is taken into consideration by the parties hereto in fixing the consideration under this agreement.

9. INSURANCE: Lessee shall, at all times during the life of this agreement, carry and maintain liability insurance under the Workman's Compensation Law and under the Occupational Disease Liability Law of the State of Arizona, satisfactory to the Industrial Commission of the State of Arizona.

Lessee shall also, at his own cost and expense, comply strictly with all the terms of the Arizona Workman's Compensation Law and the Arizona Occupational Disease Liability Law.

Lessee shall comply with all provisions of the Federal Wage and Hour Law, and shall make all payments due or to become due under

the Federal and State Social Security Law, Unemployment Compensation Law, tax laws, or any other laws now in effect or that may hereafter be enacted affecting the employees of Lessee, wages paid the employees of Lessee, and the products removed from the property by Lessee, and defend and hold Lessors and the property harmless from liability by reason of his possession of or operation of the property.

10. INSPECTION: Lessors, individually or through any duly authorized representative, shall have the right to enter upon said property or any part thereof and to inspect the same at any reasonable time during the life of this agreement, at their risk.

Lessors shall also have the right to inspect records of Lessee insofar as the same cover shipments of ores and concentrates from the premises above described, or other data bearing upon the computation of payments required hereunder, at any reasonable time, but without unreasonable inconvenience to the Lessee.

11. DEFAULT: In the event Lessee shall make default in any of the terms or provisions hereinabove contained, then the Lessors, subject to the provisions of this Article, may terminate this agreement upon thirty (30) days' notice to the Lessee, specifying such defaults and stating their intention to declare this agreement at an end if the same are not corrected in said period. If the Lessee shall fail within said thirty (30) days to correct and make good any violations of the terms and provisions of this agreement specified in such notice of default, then and thereupon this agreement shall terminate, but if such defaults or violations have been corrected or remedied in such period, this agreement shall continue in full force and effect.

12. TERMINATION - TERM: Lessee may cease operations at any time and may terminate all further liability hereunder by fifteen (15) days' written notice to the Lessors of his election to terminate said agreement.

In the event of a termination of said agreement, except by the exercise of the option hereinafter set forth, the Lessee shall

forthwith deliver to the Lessors the peaceable possession of the property and shall be relieved of any further liability hereunder; but in the event of the termination of this agreement by either of said parties, the Lessee shall not be discharged from any obligation in favor of the Lessors that may theretofore have accrued under the terms hereof.

Unless sooner terminated as hereinabove provided, or by the exercise of the option to purchase hereinafter set forth, the term of this agreement shall be fifteen (15) years from the effective date of this agreement; provided, however, that if Lessee is operating the property as a going commercial enterprise, Lessee, on giving written notice to Lessors at least thirty (30) days prior to September 4, 1972, if this agreement is still in effect on such date, shall have the option of extending this agreement for a further term of fifteen (15) years, subject to the conditions hereof, but without further right of extension.

12. OPTION: In consideration of the sum of One Dollar ($1.00), and other good and valuable consideration, the receipt whereof is hereby acknowledged, Lessors have given and granted, and by these presents do hereby give and grant unto Lessee, or to his assigns, the exclusive right, privilege and option to purchase said property particularly described in Article 1 of this agreement.

14. TERM OF OPTION: This option to purchase may be exercised at any time while the preceding lease is in effect; provided, however, that in the event the preceding lease is terminated prior to the exercise of this option, it is understood and agreed that this option shall terminate with like force and effect as if this option had never existed.

15. PURCHASE PRICE: The purchase price to be paid to Lessors for said property described in Article 1 of this agreement under this option is the sum of Two Hundred Eighty Thousand Dollars ($280,000.00), subject to the provisions of Article 16 hereof.

16. EXERCISE OF OPTION: If and when Lessee elects to exercise this option, he shall give written notice of his election

to purchase to Lessors and tender the purchase price of Two Hundred Eighty Thousand Dollars ($280,000.00) less the sum of all payments theretofore made to Lessors, including the initial payment of One Thousand Dollars ($1,000.00) paid on or before March 4, 1958, and all royalty payments, and Lessors shall accept such amount as payment in full under this option.

Anything herein contained to the contrary notwithstanding, this option shall be deemed to have been exercised by Lessee without further notice at such time as all payments theretofore made by Lessee to Lessors, including the initial payment of One Thousand Dollars ($1,000.00) paid on or before March 4, 1958, and all royalty payments, shall aggregate the sum of Two Hundred Eighty Thousand Dollars ($280,000.00).

MISCELLANEOUS

17. ESCROW DEED: Lessors agree, within ten (10) days from demand therefor, to execute a good and sufficient mining deed with the warranties provided in Article 1 hereof, conveying said above described property to Lessee, or his assignee, and to place said deed in escrow with the First National Bank of Arizona at Globe, Arizona under suitable instructions for delivery thereof to Lessee or his assigns on payment of the purchase price payable to Lessors under the option hereinabove set forth, as and when therein provided. The parties hereto shall each pay one-half of the initial escrow filing charges. In the event the escrow instructions required by the bank vary from the provisions of this agreement, the execution of such instructions by the parties hereto shall not be deemed to vary or change any of the terms hereof.

18. RELEASE: In the event of the termination of this agreement, except by the exercise of the option hereinabove set forth, Lessee or his assigns shall execute and deliver to Lessors a good and sufficient release of this agreement, or if requested by Lessors, a quitclaim deed, and shall deliver to Lessors upon written demand, a copy of all logs, assay results of any drilling

or other development work performed, and of all maps, records or blue prints which may relate to said mining property made by or for Lessee; provided, however, that this provision shall not be deemed to include confidential reports made from or based upon the above described items.

19. ADDITIONAL CLAIMS: Lessors expressly represent that the unpatented mining claims described hereinabove are all of the unpatented mining claims in said vicinity in which they or either of them have any interest, and further agree that so long as this option is in force and effect they will not either directly or indirectly locate any other or additional unpatented mining claims within a radius of one (1) mile from the exterior boundaries of the premises hereinabove described, and that in the event the foregoing option is exercised, any such claim or claims so owned or located within a radius of one (1) mile shall be conveyed without charge to Lessee, and shall be subject to the terms of this agreement as though expressly described herein.

20. PLACE OF PAYMENTS: All payments and tenders to be made to Lessors hereunder shall be delivered to the First National Bank of Arizona at Globe, Arizona, which is authorized and instructed to divide and credit the same to the parties and in the amounts provided in Article 4(d) hereof.

21. MEMORANDUM AGREEMENT: Lessors and Lessee shall execute and acknowledge a Memorandum Agreement for purposes of recordation which will refer to, and incorporate therein by reference, this agreement, stating therein generally that the Lessors have leased the property herein described to Lessee and granted to Lessee an option to purchase said property, all as more particularly set forth in this agreement.

22. NOTICES: All notices provided for herein may be given in writing by personal delivery of said notice, or may be given by registered mail addressed to: [illegible] at 187 East [illegible] St, Globe, Arizona [illegible], as representative of Lessors, and to Lessee at 905 North Sixth Street, Phoenix, Arizona, and the

time of said notices shall run from the date of mailing said notices or from the date of personal delivery thereof. The names of representatives or persons to whom notices shall be given may be changed by written request.

23. RECORDS: Lessee agrees to keep full and accurate books of account showing all production from said property.

24. NATURE AND FORM OF CONTRACT: This is an option coupled with a lease giving the right to operate, sample and mine, and is not a sale.

25. ASSIGNMENT: Lessee may assign this agreement or any interest therein to an assignee which shall assume the obligations of the lessee hereunder, and this lease and option shall extend to and be binding upon the heirs, administrators, executors and assigns of the parties hereto.

26. The effective date of this agreement shall be the actual date of the execution of this agreement by the parties hereto, and if the parties shall execute the same on different dates, the effective date of this agreement shall be the actual date of the signing of this agreement by the party hereto last executing this agreement.

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

Thomas M. Gunnerson
THOMAS M. GUNNERSON

MRS. THOMAS M. GUNNERSON

Mrs. Marion Gunnerson
MRS. MARION GUNNERSON

Mrs. Marion Snoow
MRS. MARION SNOOW

Mrs. Grace Finley
MRS. GRACE FINLEY

LESSORS

Don H. Gulbranson
LESSEE

(Forming part of Lease and Option,
Thomas J. Armstrong, et al, and
Don C. Adams)

STATE OF PENNSYLVANIA, }
County of Allegheny } SS.

On this, the 27 day of August, 1957, before me, [illegible], the undersigned officer, personally appeared THOMAS J. ARMSTRONG and [illegible] ARMSTRONG, husband and wife, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Mildred V. Mitchell
Notary Public

My commission expires:

MILDRED V. MITCHELL, Notary Public
McKeesport, Allegheny Co., Pa.
My Commission Expires
January 7, 1959

STATE OF PENNSYLVANIA, }
County of Allegheny } SS.

On this, the 27 day of August, 1957, before me, [illegible], the undersigned officer, personally appeared [illegible] ARMSTRONG, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Mildred V. Mitchell
Notary Public

My commission expires:

MILDRED V. MITCHELL, Notary Public
McKeesport, Allegheny Co., Pa.
My Commission Expires
January 7, 1959

STATE OF PENNSYLVANIA, }
County of Allegheny } SS.

On this, the 27 day of August, 1957, before me, [illegible], the undersigned officer, personally appeared [illegible], known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that she executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Mildred V. Mitchell
Notary Public

My commission expires:

MILDRED V. MITCHELL, Notary Public
McKeesport, Allegheny Co., Pa.
My Commission Expires
January 7, 1959

(Recording part of Lease and Option, Thomas S. Armstrong, et al, and Don C. Adams)

STATE OF ARIZONA, }
County of Gila. } SS.

On this, the 4th day of September, 1957, before me, the undersigned officer, personally appeared Mrs. Grace Mills, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that she executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My commission expires: June 9, 1958

FLORA E. SEUSE NOTARY PUBLIC GILA COUNTY, ARIZ.

STATE OF ARIZONA, }
County of Gila } SS.

On this, the 4th day of September, 1957, before me, the undersigned officer, personally appeared Mr. J. Mills, known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My commission expires: June 9, 1958

FLORA E. SEUSE NOTARY PUBLIC GILA COUNTY, ARIZ.

Exhibit "A"

1 - Hoist (at Roberson shaft)..... 100.00

1 - 2" Pump (gear driven)..... 25.00

1 - Concentrating Table..... 100.00

1 - Impact Mill..... 15.00

1 - Fairbanks Morse - Engine..... 10.00

1 - Truck Tank (galvanized)..... 25.00

1 - Water Storage Tank (lg. galvanized) 500.00

1 - House (1 room)..... 200.00

3 - Old Buildings (lumber & adobe) of no value except, lumber value..... 100.00

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

OFFICIAL FILE COPY
D.M.E.A.
RECEIVED JAN 2 1958

DATE	INITIALS	CODE

ASSIGNMENT AGREEMENT

THIS AGREEMENT, made this 4th day of September, 1957, by and between DON C. ADAMS of 905 North Sixth Street, Phoenix, Arizona, hereinafter referred to as Assignor, and TULSA MINERALS CORP., an Oklahoma corporation qualified to transact business in Gila County, Arizona, hereinafter referred to as Assignee,

W I T N E S S E T H:

WHEREAS, on the 15th day of August, 1957, a certain lease and option agreement was entered into by and between the above named Don C. Adams and Ethel T. Adams, his wife, as Lessors, and Tulsa Minerals Corp., Assignee herein, covering the so-called Extension group of mining claims, a memorandum of which agreement was recorded in the office of the County Recorder of Gila County, Arizona, in Docket _____ at page _____, which is incorporated herein by reference; and

WHEREAS, on the 15th day of August, 1957, a certain lease and option was entered into by and between Thomas S. Armstrong and _____ Armstrong, husband and wife, of 54 South Pitt Street, Carlisle, Pennsylvania, Mrs. Marion Armstrong of Mohawk Drive, McKeesport, Pennsylvania, Mrs. Marion Moon of Mohawk Drive, McKeesport, Pennsylvania, and Mrs. Grace Finley of Globe, Arizona, as Lessors, and the above named Don C. Adams, as Lessee, covering the so-called Bobtail group of mining claims, a memorandum of which lease and option was recorded in the office of the County Recorder of Gila County, Arizona, in Docket 29 at page 126, which is incorporated herein by reference; and

WHEREAS, Assignor and Assignee herein have entered into an agreement with respect to the assignment covering the said Bobtail group of mining claims,

NOW, THEREFORE, in consideration of the sum of Ten Dollars ($10.00), receipt whereof is hereby acknowledged, and other good and valuable consideration, the receipt whereof is hereby acknowl-

EXHIBIT 1(c)-2

edged, the parties hereto agree as follows:

1. Assignor, by a separate instrument which is to be delivered simultaneously with the execution of this agreement, has assigned, transferred and set over unto Assignee the lease and option covering the Bobtail group of mining claims, more particularly described in the memorandum of agreement of record in the office of the County Recorder of Gila County, Arizona, in Docket 77 at page 128, together with all and singular the premises therein mentioned and described, and said Assignor does hereby covenant and agree that said premises are free and clear of and from all former and other gifts, bargains, sales, leases, judgments, executions, taxes, assessments and encumbrances by him or Lessors suffered, made or created, except as specifically stated in said lease and option.

2. Assignee, in partial consideration for the assignment of said lease and option, hereby assumes and agrees to perform all of the terms, covenants and conditions of said lease and option required to be performed by the Assignor herein, including (but not restricted to) the payment of the minimum annual royalty and the five percent (5%) of the gross receipts provided therein, and further agrees to indemnify and hold Assignor harmless from any liability arising out of or due to Assignee's occupancy of the demised premises, pursuant to said assignment of lease. Assignee further agrees not to change the terms of said lease and option without first notifying Assignor of such proposed change and securing his consent thereto. It is specifically agreed that in the event the Assignee should, for any reason whatever, during the term of said lease and option, desire to surrender the same, Assignee will advise Assignor in writing of such determination at least fifteen (15) days prior to such surrender in order that Assignor may, if he so desires, assume the lease and option for the remainder of the term thereof. In the event Assignor herein notifies Assignee in writing of his desire to assume the lease

and option, Assignee agrees to execute any and all documents necessary to effect a reassignment of the lease and option and the assumption of the obligations thereunder by Assignor. Unless Assignor requests the reassignment of such lease and option within fifteen (15) days from the date notice was mailed or delivered to Assignor, Assignee shall have the right and privilege of surrendering said lease and option, and shall be relieved from any and all further liability thereafter accruing. In either event, Assignee shall have the right and privilege of removing all equipment or property placed by it on said premises to the extent permitted by said lease and option of August 15, 1957.

As further consideration for the assignment of said lease and option, Assignee agrees that it will not surrender the lease and option covering the so-called Extension group of claims hereinabove referred to prior to surrendering or assigning to Assignor the lease and option covering the Bobtail group of claims hereinabove referred to, and that in the event it exercises its option on the Bobtail group of claims, it will likewise exercise its option on the Extension group of mining claims unless it is prevented from so doing by Assignor, his heirs or assigns.

3. Any notices required to be given under the terms hereof by either party, may be given by personal delivery or by depositing the same in the registered mails of the United States, postage prepaid, and addressed as follows:

Assignor: Don C. Adams
905 North Sixth Street
Phoenix, Arizona

Assignee: Tulsa Minerals Corp.
Post Office Box 5216
Tulsa, Oklahoma

4. This Assignment Agreement shall be binding on the heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Assignor has hereunto set his hand, and the Assignee has caused these presents to be subscribed by

its president, and its corporate seal to be hereunto affixed by its secretary, the day and year first above written.

Don C. Adams

Assignor

TULSA MINERALS CORP.

By _____
Its Vice President

ATTEST:

William G. Eastman
Its Secretary

STATE OF ARIZONA, }
County of [illegible] } SS.

On this, the [illegible] day of [illegible], 1957, before me, _____, the undersigned officer, personally appeared DON C. ADAMS, known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

[illegible]
Notary Public

My commission expires: [illegible]

STATE OF OKLAHOMA, }
County of Tulsa. } SS.

On this, the 9th day of [illegible], 1957, before me, Edward C. Fritz, the undersigned officer, personally appeared P. T. THIBODAUX and WILLIAM G. EASTMAN, who acknowledged themselves to be Vice President and Secretary, respectively, of TULSA MINERALS CORP., a corporation, and acknowledged that they, as such Vice Pres. and Secretary, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as Vice Pres. and Secretary, respectively.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Edward C. Fritz
Notary Public

My commission expires:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

OFFICIAL FILE COPY
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RECEIVED JAN 2 1958
DATE | INITIALS | CODE

ASSIGNMENT OF LEASE AND OPTION

KNOW ALL MEN BY THESE PRESENTS:

THIS ASSIGNMENT, made and entered into this 3rd day of September, 1957, by and between DON C. ADAMS, hereinafter called Assignor, and TULSA MINERALS CORP., an Oklahoma corporation qualified to transact business in Gila County, Arizona, hereinafter called Assignee,

W I T N E S S E T H:

THAT WHEREAS, on the 15th day of August, 1957, a certain lease and option agreement was made and entered into by and between Thomas S. Armstrong and _____ Armstrong, husband and wife, Mrs. Marion Armstrong, Mrs. Marion Moon and Mrs. Grace Finley, as Lessors, and the undersigned Don C. Adams, as Lessee, relative to the leasing and sale of certain unpatented lode mining claims in Gila County, Arizona, known as the Bobtail group, and more particularly described in that certain memorandum of agreement of record in the office of the County Recorder of Gila County, Arizona, in Docket 79 at page 128, which is incorporated herein by reference,

NOW, THEREFORE, in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, receipt of which is hereby acknowledged, the undersigned Don C. Adams does hereby grant, bargain, sell, transfer, assign and convey unto said Tulsa Minerals Corp. all of his right, title and interest in and to the above recited agreement and in and to the mining claims covered thereby, subject to all of the duties and obligations therein contained which the Assignee, by the acceptance of this assignment, undertakes and agrees to faithfully discharge.

Don C. Adams

Assignor

EXHIBIT 1(c)-3

(Forming part of Assignment of Lease and Option
Don C. Adams and Tulsa Minerals Corp.)

STATE OF ARIZONA,
County of Maricopa } SS.

On this, the 18th day of September, 1957, before me, Jeanne T. Kautza, the undersigned officer, personally appeared DON C. ADAMS, known to me to be the person whose name is subscribed to the within instrument, and [illegible] executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Jeanne T. Kautza
Notary Public

My commission expires: 9/11/60

JEANNE T. KAUTZA NOTARY PUBLIC MARICOPA COUNTY, ARIZ.

ACCEPTED:
TULSA MINERALS CORP.
By J. S. Burden
Its Pres.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of MORRIS & MALOTT
Date Sep. 20th, 1957 Time 3:35 P. M., Docket 79 Official Records Page 458
Records of Gila County, Arizona.
WITNESS my hand and official seal the day and year last above written.
JOSEPH KINSMAN, County Recorder.
By Joseph Kinsman Deputy.

227156

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

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DATE | INITIALS | CODE

LEASE AND OPTION

THIS AGREEMENT, made and entered into as of the 15th day of August, 1957, by and between DON C. ADAMS and Ethel T. ADAMS, husband and wife, of 905 North Sixth Street, Phoenix, Arizona, hereinafter referred to as Lessors, and TULSA MINERALS CORP., an Oklahoma Corporation qualified to transact business in Gila County, Arizona, hereinafter referred to as Lessee,

W I T N E S S E T H:

WHEREAS, the said Lessors are the owners of certain unpatented lode mining claims located in Gila County, Arizona, more particularly described herein; and

WHEREAS, Lessee desires to secure a lease and option on said property for the term and on the conditions hereinafter particularly set forth,

NOW, THEREFORE, in consideration of Ten Dollars ($10.00), lawful money of the United States, paid by Lessee to Lessors, receipt whereof is hereby acknowledged, and in consideration of the mutual agreements hereinafter contained, the parties hereto do hereby agree as follows:

1. PROPERTY: The property covered by this agreement is:

Those certain unpatented lode mining claims situated in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Doak Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Seven (7), Township Two (2) South, Range Fifteen (15) East, and Section Twelve (12), Township Two (2) South, Range Fourteen (14) East, G. & S.R.B. & M., of which the names, together with the numbers of Dockets of Official Record and the pages thereof where their respective location notices are recorded in the office of the County Recorder of Gila County, Arizona, are as follows:

EXHIBIT 1(c)-4

NAME	BOOKLET	PAGE
Extension	61	455
Extension No. 2	77	171
Extension No. 3	77	172
Extension No. 4	77	173

Lessors represent, covenant and warrant to Lessee that they are the owners of said unpatented lode mining claims and have a good and sufficient merchantable title thereto which is subject only to the paramount title of the United States of America; that said claims and each of them are properly and legally monumented; that the location and assessment work has been performed on each of said claims according to law for the period ending July 1, 1957; that said claims and each of them are valid, existing locations, free from liens and encumbrances, and that Lessors have the right and power to convey the same, and that Lessors will warrant and defend Lessee in the undisturbed use and enjoyment of the demised premises, subject to compliance by Lessee with the terms and conditions of this agreement.

Lessors further agree to furnish Lessee an abstract of title to said claims, prepared by a duly licensed abstract company, on or before thirty (30) days from the date hereof.

2. FIRST PERIOD - POSSESSION: Lessors hereby give and grant to Lessee the exclusive right until midnight March 6, 1958, to enter upon, explore, sample and prospect the property, conduct mining operations thereon, and extract and ship ores therefrom subject to the conditions hereinafter set forth. During said period, herein sometimes referred to as "First Period," Lessee shall not be obligated to pay a minimum royalty.

3. POSSESSION AND OPERATION: At any time prior to the termination of the First Period, Lessee may give notice to Lessors that it has elected to continue its possession of the property with the right to conduct mining operations thereon, and to extract and ship ores therefrom subject to the conditions herein set forth.

In the event that the notice as herein in this Article provided shall not be given, then and in such event this agreement shall terminate on March 6, 1958 at midnight, and the Lessee shall have no further rights in or to the property (except the right to remove its machinery and equipment as hereinafter provided) and shall be under no further obligation of any type, nature or description with respect thereto.

Upon the giving of said notice, the Lessee shall be entitled to retain the exclusive possession of said property, and to explore, sample and operate the same, conduct mining operations thereon, and extract and ship ores therefrom, subject to the conditions herein set forth.

(a) All work done upon said property by Lessee shall be done in a good and workmanlike manner and after the manner of good mining. There shall be no high grading of the property. All workings where necessary, or where directed by the State Mine Inspector or his deputy, shall be timbered properly and substantially, and with the view of developing said property into a workable mine. All mine openings shall be kept clear of obstructions and in a condition so that they can be entered, except such openings as are not necessary for future operations of Lessee. The laws of the State of Arizona and all requirements of the State Mine Inspector shall [illegible] complied with promptly.

(b) Assessment work: Lessee shall perform, at its own expense, the annual assessment work on the unpatented mining claims hereinabove described, for each year during the life of this agreement, if assessment work is required by law, except for the year ending July 1, 1957, and shall complete such work on or before the 1st day of May of each year and furnish Lessors proper proof thereof in a form sufficient to be recorded; provided, however, that if this agreement is terminated and notice of such termination is given to Lessors prior to the 30th day of April of any calendar year, Lessee shall not be required to perform the

assessment work for the assessment year ending on the succeeding July 1.

4. ROYALTY:

(a) Throughout the term of this agreement, Lessors reserve and Lessee agrees to pay royalties as a rental for the use and possession of the property as follows:

> A royalty of five percent (5%) of the net smelter returns or sale price received for ores extracted from said mining property by Lessee and shipped, smelted or otherwise disposed of, either in the form of direct smelting ores or concentrates.

(b) "Net Smelter Returns" and "Sale Price" defined:

"Net Smelter Returns," within the meaning of this agreement, shall be the correct returns as shown by the liquidation sheets furnished by the smelter treating such ores and concentrates after such smelter shall have made its deduction for freight and switching charges, treatment, and usual smelting deductions.

"Sale Price," within the meaning of this agreement, shall be the purchase price paid for such ores and concentrates f.o.b. mine bins. No sales may be made except to a smelter unless the "Sale Price" fairly reflects the value of the mineral contents of the ores or concentrates sold.

In arriving at the net smelter returns or sale price, no deduction shall be made for hauling or any other charge of whatsoever character, except as herein expressly provided.

The deduction and payment of royalties shall be governed by smelter values or sale price per dry ton of ores.

(c) Settlements: In the event that ores or concentrates shall be disposed of to a smelter, the smelter treating such ores shall be instructed to remit to the First National Bank of Arizona at Globe, Arizona, the royalties hereinabove provided, based on net smelter returns as above defined due from it on account of ores and concentrates smelted and purchased by said smelter; and such remittance, accompanied by three liquidation sheets for each lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days apart, as may be agreed upon by the parties hereto and said smelter.

In the event said ores or concentrates shall be disposed of to a purchaser other than a smelter, said purchaser shall be instructed to remit to the said First National Bank of Arizona, at Globe, Arizona, the royalties hereinabove provided, based on the purchase price as above defined due on account of ores or concentrates purchased, and such remittance, accompanied by three liquidation sheets containing full and complete information regarding such sale and purchase, including the price, quantities of ores and concentrates, and lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days apart, as may be agreed upon by the parties hereto, and said purchaser and purchasers.

The remainder of the "net smelter returns" or "sale price" shall be paid direct to the order of Lessee.

The bank named shall be instructed to hold one copy of said liquidation sheets or statements, to deliver one copy to a representative of Lessors to be named by Lessors, and to deliver one copy to Lessee, or a representative to be named by it.

(d) Distribution of Royalties: Said First National Bank of Arizona shall be and hereby is instructed to credit said royalties to Don C. Adams, 905 North Sixth Street, Phoenix, Arizona, or order.

(f) Minimum Royalty: Lessee shall pay to Lessors a minimum royalty of Seven Hundred Sixty Dollars ($760.00) per annum, beginning with the period March 7, 1958 through March 6, 1959, as follows:

Royalties shall be paid on ore shipments as hereinabove provided, and in the event that the royalties so earned during any royalty year, that is, the period from March 7 of any year through March 6 of the next succeeding year, shall not amount to the sum of Seven Hundred Sixty Dollars ($760.00), Lessee shall pay to Lessors the difference between the sum of Seven Hundred Sixty Dollars ($760.00) and the amount of earned royalties

paid during such royalty year. Should this agreement be terminated during any royalty year, the minimum royalty shall be Sixty-three and 33/100 Dollars ($63.33) for each of the months during said royalty year that this agreement remained in effect.

5. TAXES: Lessee, so long as this agreement is in force and effect, shall pay all taxes levied or assessed on any machinery, equipment or improvements placed upon the property by Lessee, and shall pay all taxes levied or assessed against said property. Taxes on the property shall be prorated for periods of less than a calendar year. Lessee agrees to pay all so-called "sales taxes," "ad valorem" and "production taxes," now or hereafter levied by the State of Arizona, or by the United States of America, on ores and concentrates shipped from the property by Lessee under the terms of this agreement.

6. MACHINERY - REMOVAL:

(a) All machinery, equipment and personal property, together with all improvements (excepting ladders, timbers or ties in place underground) which may be placed on the property by and at the expense of Lessee, may be removed by it at any time within one hundred twenty (120) days after the termination of this agreement; provided, however, that no such property shall be removed at any time while the Lessee may be in default under any of the terms or provisions of this agreement, and the removal shall be effected in such manner as to avoid material injury or damage to the mine and improvements that are to remain thereon. If not so removed by the Lessee, the Lessors may, at their option, retain the said machinery, equipment and personal property, together with all improvements not removed, as and for their own, free of any claim of any kind on the part of the Lessee.

(b) All ores mined and placed on the dumps of the property by the Lessee during the life of this agreement may be removed and shipped by Lessee in the event of a termination of this agreement, but such ores shall be removed within sixty (60)

days after such termination and shall be subject to royalty payments as herein provided. In the event such ores are not removed within said period as herein provided, title to ores not removed shall thereupon vest in the Lessors, free of any claim or charge of the Lessee.

7. NOTICE OF NON-LIABILITY: The Lessee shall not incur any debts or liens against said property or against any part thereof during the life of this agreement, and shall indemnify and save harmless the Lessors and said property from any and all liens. The Lessee further agrees to record and to post on the premises prior to commencing any operations thereon under this lease, and to use reasonable care to keep posted at its own cost and expense, a notice, as provided by law, that the said Lessee is responsible for all claims and demands in connection with the operation of said property, and that the Lessors and said property are not liable for any claims or liens resulting from any such operations. All miners, laborers, and other persons who may labor or furnish any labor or materials in, for or upon said premises during the life of this agreement, and to whom any sum may be due from the Lessee for such labor or materials, shall be promptly paid by the Lessee. It is stipulated and agreed that should Lessee fail to fully complete and perform the condition hereinabove set forth with respect to the posting and recording of the notices of non-liability, such failure shall terminate and end any right, interest, claim or title that Lessee may have in or to said premises, or any part thereof, and shall terminate this lease forthwith. The form of such required notice of non-liability shall be furnished to Lessee by Lessors.

8. LIABILITY FOR INJURIES: Lessee hereby assumes any and all liability or liabilities arising or to arise from accidents or injuries to his agents or employees or any other person in or about the property while the same is in the possession of Lessee, and shall defend and hold Lessors harmless against any liability or responsibility for or on account of any such injuries, it being

understood that the hazard of all such liability or liabilities is taken into consideration by the parties hereto in fixing the consideration under this agreement.

9. INSURANCE: Lessee shall, at all times during the life of this agreement, carry and maintain liability insurance under the Workmen's Compensation Law and under the Occupational Disease Liability Law of the State of Arizona, satisfactory to the Industrial Commission of the State of Arizona.

Lessee shall also, at its own cost and expense, comply strictly with all the terms of the Arizona Workmen's Compensation Law and the Arizona Occupational Disease Liability Law.

Lessee shall comply with all provisions of the Federal Wage and Hour Law, and shall make all payments due or to become due under the Federal and State Social Security Law, Unemployment Compensation Law, tax laws, or any other laws now in effect or that may hereafter be enacted affecting the employees of Lessee, wages paid the employees of Lessee, and the products removed from the property by Lessee, and defend and hold Lessors and the property harmless from liability by reason of its possession of or operation of the property.

10. INSPECTION: Lessors, individually or through any duly authorized representative, shall have the right to enter upon said property or any part thereof and to inspect the same at any reasonable time during the life of this agreement, at their risk,

Lessors shall also have the right to inspect records of Lessee insofar as the same cover shipments of ores and concentrates from the premises above described, or other data bearing upon the computation of payments required hereunder, at any reasonable time, but without unreasonable inconvenience to the Lessee.

11. DEFAULT: In the event Lessee shall make default in any of the terms or provisions hereinabove contained, then the Lessors, subject to the provisions of this Article, may terminate this agreement upon thirty (30) days' notice to the Lessee,

specifying such defaults and stating their intention to declare this agreement at an end if the same are not corrected in said period. If the Lessee shall fail within said thirty (30) days to correct and make good any violations of the terms and provisions of this agreement specified in such notice of default, then and thereupon this agreement shall terminate, but if such defaults or violations have been corrected or remedied in such period, this agreement shall continue in full force and effect.

12. TERMINATION - TERM: Lessee may cease operations at any time and may terminate all further liability hereunder by fifteen (15) days' written notice to the Lessors of its election to terminate said agreement.

In the event of a termination of said agreement, except by the exercise of the option hereinafter set forth, the Lessee shall forthwith deliver to the Lessors the peaceable possession of the property and shall be relieved of any further liability hereunder; but in the event of the termination of this agreement by either of said parties, the Lessee shall not be discharged from any obligation in favor of the Lessors that may theretofore have accrued under the terms hereof.

Unless sooner terminated as hereinabove provided, or by the exercise of the option to purchase hereinafter set forth, the term of this agreement shall be fifteen (15) years from the effective date of this agreement; provided, however, that if Lessee is operating the property as a going commercial enterprise, Lessee, on giving written notice to Lessors at least thirty (30) days prior to _____ September 6, 1972, if this agreement is still in effect on such date, shall have the option of extending this agreement for a further term of fifteen (15) years, subject to the conditions hereof, but without further right of extension.

13. OPTION: In consideration of the sum of One Dollar ($1.00), and other good and valuable consideration, the receipt whereof is hereby acknowledged, Lessors have given and granted, and by these presents do hereby give and grant unto Lessee, or to its successors or assigns, the exclusive right, privilege and option

to purchase said property particularly described in Article 1 of this agreement.

14. TERM OF OPTION: This option to purchase may be exercised at any time while the preceding lease is in effect; provided, however, that in the event the preceding lease is terminated prior to the exercise of this option, it is understood and agreed that this option shall terminate with like force and effect as if this option had never existed.

15. PURCHASE PRICE: The purchase price to be paid to Lessors for said property described in Article 1 of this agreement under this option is the sum of Eighty Thousand Dollars ($80,000.00), subject to the provisions of Article 16 hereof.

16. EXERCISE OF OPTION: If and when Lessee elects to exercise this option, it shall give written notice of its election to purchase to Lessors and tender the purchase price of Eighty Thousand Dollars ($80,000.00) less the sum of all payments theretofore made to Lessors, including all royalty payments, and Lessors shall accept such amount as payment in full under this option.

Anything herein contained to the contrary notwithstanding, this option shall be deemed to have been exercised by Lessee without further notice at such time as all payments theretofore made by Lessee to Lessors, including all royalty payments, shall aggregate the sum of Eighty Thousand Dollars ($80,000.00).

MISCELLANEOUS

17. ESCROW DEED: Lessors agree, within ten (10) days from demand therefor, to execute a good and sufficient mining deed with the warranties provided in Article 1 hereof, conveying said above described property to Lessee, or its assignee, and to place said deed in escrow with the First National Bank of Arizona at Globe, Arizona, under suitable instructions for delivery thereof to Lessee or its assigns on payment of the purchase price payable to Lessors under the option hereinabove set forth, as and when

therein provided. The parties hereto shall each pay one-half of the initial escrow filing charges. In the event the escrow instructions required by the bank vary from the provisions of this agreement, the execution of such instructions by the parties hereto shall not be deemed to vary or change any of the terms hereof.

18. RELEASE: In the event of the termination of this agreement, except by the exercise of the option hereinabove set forth, Lessee or its assigns shall execute and deliver to Lessors a good and sufficient release of this agreement, or if requested by Lessors, a quitclaim deed, and shall deliver to Lessors upon written demand, a copy of all logs, assay results of any drilling or other development work performed, and of all maps, records or blue prints which may relate to said mining property made by or for Lessee; provided, however, that this provision shall not be deemed to include confidential reports made from or based upon the above described items.

19. ADDITIONAL CLAIMS: Lessors expressly represent that the unpatented mining claims described hereinabove are all of the unpatented mining claims in said vicinity in which they or either of them have any interest, and further agree that so long as this option is in force and effect they will not either directly or indirectly locate any other or additional unpatented mining claims within a radius of one (1) mile from the exterior boundaries of the premises hereinabove described, and that in the event the foregoing option is exercised, any such claim or claims so owned or located within a radius of one (1) mile shall be conveyed without charge to Lessee, and shall be subject to the terms of this agreement as though expressly described herein.

20. PLACE OF PAYMENTS: All payments and tenders to be made to Lessors hereunder shall be delivered to the First National Bank of Arizona at Globe, Arizona, which is authorized and instructed

to divide and credit the same as provided in Article 4(d) hereof.

21. MEMORANDUM AGREEMENT: Lessors and Lessee shall execute and acknowledge a Memorandum Agreement for purposes of recordation which will refer to, and incorporate therein by reference, this agreement, stating therein generally that the Lessors have leased the property herein described to Lessee and granted to Lessee an option to purchase said property, all as more particularly set forth in this agreement.

22. NOTICES: All notices provided for herein may be given in writing by personal delivery of said notice, or may be given by registered mail addressed to Don C. Adams at 905 North Sixth Street, Phoenix, Arizona, as representative of Lessors, and to Lessee at P.O. Box 5216, Tulsa, Oklahoma, and the time of said notices shall run from the date of mailing said notices or from the date of personal delivery thereof. The names of representatives or persons to whom notices shall be given may be changed by written notice.

23. RECORDS: Lessee agrees to keep full and accurate books of account showing all production from said property.

24. NATURE AND EXTENT OF CONTRACT: This is an option coupled with a lease giving the right to operate, sample and mine, and is not a sale.

25. ASSIGNMENT: Lessee may assign this agreement or any interest therein to an assignee which shall assume the obligations of the Lessee hereunder, and this lease and option shall extend to and be binding upon the heirs, administrators, executors, successors, and assigns of the parties hereto.

26. The effective date of this agreement shall be the actual date of the execution of this agreement by the parties hereto, and if the parties shall execute the same on different dates, the effective date of this agreement shall be the actual date of the signing of this agreement by the party hereto last

executing this agreement.

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

Don C. Adams

Don C. Adams

Ethel T. Adams

ETHEL T. Adams

Lessors

TULSA MINERALS CORP.

By _____
Its Vice President

ATTEST:

_____
Its Secretary

STATE OF ARIZONA, }
County of Maricopa } SS.

On this, the 5th day of September, 1957, before me, Jeanne T. Kouton, the undersigned officer, personally appeared DON C. ADAMS and Ethel T. ADAMS, husband and wife, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Jeanne T. Kouton
Notary Public

My Commission expires: 9/11/60

STATE OF OKLAHOMA, }
County of Tulsa. } SS.

On this the 9th day of September, 1957, before me, Edward C. Yelton the undersigned officer, personally appeared P. T. THIBODAUX and WILLIAM G. EASTMAN, who acknowledged themselves to be Vice President and Secretary, respectively, of TULSA MINERALS CORP., a corporation, and acknowledged that they, as such Vice Pres. and Secretary, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as Vice Pres. and Secretary, respectively.

IN WITNESS WHEREOF, I hereunto set my hand and official seal

Edward C. Yelton
Notary Public

My commission expires:

December 25, 1957

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 2 1958

DATE	INITIALS	CODE
ADAMS,	husband	

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

That DON C. ADAMS and Ethel T. ADAMS, husband and wife, of 905 North Sixth Street, Phoenix, Arizona, Lessors, for a valuable consideration, receipt whereof is hereby acknowledged, have leased to, and have given and granted to TULSA MINERALS CORP., an Oklahoma Corporation qualified to transact business in Gila County, Arizona, or to its successors or assigns, the exclusive right, privilege and option to purchase those certain unpatented lode mining claims hereinafter described under and according to the terms and conditions of a certain Lease and Option Agreement dated 15th day of August, 1957, executed in duplicate, a copy of which is in the possession of Lessors and Lessee. The unpatented lode mining claims covered by this memorandum and said Lease and Option Agreement of August 15, 1957, are those certain unpatented lode mining claims situate in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Doak Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Seven (7), Township Two (2) South, Range Fifteen (15) East, and Section Twelve (12), Township Two (2) South, Range Fourteen (14) East, G. & S.R.B. & M., of which the names, together with the numbers of Dockets of Official Records and the pages thereof where their respective location notices are recorded in the office of the County Recorder of Gila County, Arizona, are as follows:

NAME	DOCKET	PAGE
Extension	61	455
Extension No. 2	77	171
Extension No. 3	77	172
Extension No. 4	77	173

IN WITNESS WHEREOF, the parties hereto have executed these

EXHIBIT 1(c)-5

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

presents as of the_____day of_____, 1957.

_____
DON C. ADAMS

_____
_____ ADAMS

Lessors

TULSA MINERALS CORP.

By_____
Its Vice President

ATTEST:

_____
Its Secretary

STATE OF ARIZONA, }
County of _____ } SS.

On this the_____day of_____, 1957, before me, _____, the undersigned officer, personally appeared DON C. ADAMS and _____ ADAMS, husband and wife, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
Notary Public

My commission expires: _____

STATE OF OKLAHOMA, }
County of Tulsa. } SS.

On this the 9th day of _____, 1957, before me, _____, the undersigned officer, personally appeared P. [illegible] and WILLIAM G. EASTMAN, who acknowledged themselves to be [illegible] and Secretary, respectively, of TULSA MINERALS CORP., [illegible] and acknowledged that they, as such Vice President and [illegible] ectively, being authorized so to do, executed the fore-[illegible] ent for the purposes therein contained, by signing the [illegible] ration by themselves as Vice Pres. and Secretary, [illegible]

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
Notary Public

My Commission expires: _____

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 2: Physical Description

(a) Past and Present Mining or Exploration Operations

Existing workings on this prospect are involved with two separate veins which traverse the area. These veins are known as the Tungsten Vein and the Bobtail Vein. Workings existing on each are as follows:

1. Tungsten Vein: (See following Exhibits 2(a)-1 and 2(a)-1a.

This vein, lying north of the Bobtail vein and dipping approximately 35° NW, has been partially explored near the surface by a 218-foot drift east, along strike of the vein. The drift has three shallow winzes and two small stopes on high grade areas in the vein. Directly across a water course, west of the portal of this main drift, the vein has been opened by a 40-foot incline and a short drift west, along strike of the vein.

Vein material removed from the drift was dumped, whereas material removed from the stopes and winzes was shipped direct to the smelter.

Besides these two workings, the Tungsten vein has not been developed or explored by any workings other than a prospect pit some 1500 feet east, which exposed copper, silver and gold mineralization.

Production facilities consist of trackage and lights in the 218-foot tunnel.

2. Bobtail Vein: (See following Exhibits 2(a)-2 and 2(a)-2a.

This vein dips approximately 62° NW, diverging from the Tungsten vein. Workings on the vein consist of a short surface drift east, on strike of the vein, and a 200-foot shaft sunk on dip of the vein. Workings off this shaft are as follows:

50-foot level: A 60-foot drift west with the area stoped above the level.

60-foot level: A short drift west with some stoping above the level. Caving has filled this area.

ITEM 2 continued:

100-foot level: A drift east, caved at 65 feet. Stoping has been conducted above the level. A drift west has been bulkheaded off 10 feet from the shaft. Old records state this drift extended for approximately 200 feet along the vein with considerable stoping conducted above the level.

200-foot level: A 149-foot drift east, on strike of vein. This drift is well timbered its full extent. To the west the drift is caved at 95 feet. Stoping was conducted above the level, starting at 55 feet. Old records of 1929 denote this drift as being 200 feet in extent.

Production facilities consist of the shaft and portions of the 200-foot level drifts being open to allow retimbering where necessary, replacement of skids and laying of track; that is, should reserves be delineated in such position as to warrant use of these workings.

(b) Tulsa Minerals Corp. Interest in 2(a)

Tulsa Minerals Corp. had no interest in the activities which initially opened up the Tungsten or Bobtail veins. Any interest held by Tulsa Minerals Corp. is through the virtue of moving in sufficient equipment on September 9, 1957, to commence de-watering of the 200-foot shaft. On October 20, 1957, additional heavy duty equipment was moved in to expedite the de-watering to the 200-foot level. Also wire, track and pipe were supplied to activate the Tungsten tunnel for evaluation purposes.

Activities consisted of a small amount of road repair, repair of temporary headframe, pumping of water, removal of a large amount of muck and installation of skids. On the 200-foot level the west bulkhead was removed and muck cleaned out to allow inspection of the drift to the cave at 95 feet.

In the Tungsten tunnel lights and track were installed to expedite clean-up for evaluation purposes.

(c) Past and Current Production

There is no current production from the property.

ITEM 2 continued:

Past production was intermittent throughout the years, but the following smelter settlement sheets substantiate 284 tons of ore mined from the property during a period from 1940 - 1945. At 1940 to 1945 metal prices the ore averaged $16.70 gross per ton.

The included settlement sheets are representative of the ores removed from the Tungsten tunnel. Production records on the Bobtail shaft are not held by Tulsa Minerals Corp.

(d) Ore Reserves

1. Bobtail Vein

No attempt has been made to arrive at a reserve figure on this vein due to the lack of necessary data for computing possible, probable or proven ore. The shaft and attendant drifts, where removal of the mineable ore was accomplished in this one explicit area, did not penetrate far enough into the existing vein to allow reserve computations. To compensate this, Tulsa Minerals Corp. has taken representative channel cuts across the full vein width on the sides of the shaft and in the drifts. Also, wherever the Bobtail vein was exposed on the surface, a 3-inch by 3-inch channel cut was made across the vein. This data substantiated the existence of mineralization along the extent of the explored vein. The grade of ore ran from trace to over 2.0% copper; trace to over 3 ounces of silver; and trace to 0.10 ounces of gold. (See following Exhibits 2(d) and 2(d)-1.)

2. Tungsten Vein

A minimum "probable" ore reserve may be computed for that area of the vein as exposed by the 218-foot tunnel and the vertical extent of the stope and winze features. This area contains 3200 tons of vein material containing copper, silver, gold and zinc. The workings were sampled by 3-inch by 3-inch channel cuts across a minimum width of 3 feet on 20-foot centers. The individual assay results are shown on the following Exhibit 2(d)-2. Surface exposures of the vein were sampled in like manner with results shown on Exhibit 2(d).

(e) Geologic Features -- See Exhibit 2(d)

Rocks involved in the subject area are highly deformed crystalline schists pre-Cambrian in age, known as the Pinal schist. These rocks cover the western slope of the Pinal range and are intimately associated with granitic and intrusive igneous rocks in the area.

ITEM 2 continued:

Both subject veins are simple fissure type, filled with fault breccia material composed of fragments of schist which are somewhat bleached and altered to a soft sericite-schist. Ore has been formed through virtue of minerals filling the interstices between fragments of the breccia and to some extent replacement of the breccia material. The vein contains considerable secondary quartz.

According to F. L. Ransome, U.S.G.S. Globe Folio, Arizona, 1902, the principal minerals contained in the subject veins are: chalcopyrite, galena, sphalerite, chalcocite, cuprite with gold and silver. Uniquely, it is one of few veins in the region where sphalerite is recognized in any quantity, running from 1 to 4 percent.

(f) Ore Occurrence Expectations and Sampling

The area involved with the preliminary studies was plane table mapped to obtain the true positioning of the Bobtail and Tungsten veins. During course of mapping, samples were cut on the exposed portions of the two veins, which represent only the oxidized and leached part of each vein. Although such samples are not at all conclusive as to commercial value of the vein, they presented some factual data as to lateral extent of mineralization. These surface samples were substantiated by sampling conducted underground on the Tungsten tunnel and Bobtail shaft.

Results of this sample program may be seen on Exhibits 2(d)-1, 2(d)-2 and 2(d). Assay certificates follow as Exhibit 2(d)-3. All samples represent a full vein width channel cut, 3 inches wide and 3 inches deep.

The expectations for finding ore, through the proposed exploration program, are brought about by:

1. Extensive lateral extent of both veins with assayable mineral content.

2. The noteworthy width and mineralized extent of the Tungsten vein as presented by the Tungsten tunnel and surface exposures.

3. The mineral content and extent of Bobtail vein as presented by the Bobtail shaft, workings and surface exposures.

4. The existence of mineralization on both veins as shown in prospect pits both east and west of the limits of the plane table map.

5. The existence of sizeable workings further west of this area which are contained upon the same system of fissures and faults.

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 2 continued:

6. The fact that other mines in the region, which are associated with the Pinal schist, find the Pinal schist a formation very amenable to mineralization and the fissure-fault features do not die out at shallow depths.

(g) Geological and Engineering Reports

The following Exhibit 2(g) is a preliminary report of dry concentration tests conducted upon the ores from the Bobtail prospect.

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

RECEIVED JAN 2

Smelter Lot 3180 DATE 12-21-40

Shipper Lot 8 Date Received 12-18-40

BOUGHT OF T. S. Armstrong

Street 1400 Evans St.,

City McKeesport, Pa.

Car Number	WET WEIGHT	Moisture %	DRY WEIGHT
202	36,060	4.60	34,878

Check to be delivered to R. C. Finley, Globe, Arizona

N. Y. QUOTATIONS

Date

Copper (per lb.) 11.375

Less 2.0% 9.375¢

Silver (per oz.) 70.625¢

Gold (per oz.) $32.20

ASSAY and ANALYSIS			PAYMENTS PER TON			DEBITS	CREDITS
Copper	1.91	%	38.2 lbs. per ton less 10%	28.2 lbs. at 9.375¢	Per lb.		2.64
Silver	14.43	oz.	14.43 oz. per ton, less 5	13.71 oz. at 70.625¢	Per oz.		9.68
Lead	.136	oz.	.136 oz. per ton, less %	.136 oz. at $32.20	Per oz.		4.38
Silica	78.5	%	units at	Per unit			
Alumina	6.6	%	units at	Per unit			
Iron	6.0	%	units at	Per unit			
Lime	.2	%	units at	Per unit			
Sulphur		%	units at	Per unit			
			Excess Metal Values 16.70 - 15.00 = 1.70 @ 10%			.17	
			Treatment charge			3.52	
					TOTALS	3.69	16.70
			Net Value per ton				13.03

Amount to be paid to

Packing: Luis Jauros, Globe, Ariz.

17.438 Dry tons at $ 13.03 — 227.23

Sampling, tons @

Packing, 18.28 tons @ 1.50 — 27.42

Trucking to be paid to

Virgil Burke, Globe, Ariz.

Trucking, 18.28 tons @ 2.00 — 36.56 — 63.98

AMOUNT DUE SHIPPER — 163.25

Less % Royalty

NET AMOUNT DUE SHIPPER — 163.25

Correct:

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

FORM 15 [illegible] 50 8548 W.P.

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

RECEIVED JAN 2 [illegible] D.M.E.A.

DATE DEC. 30th, 1940.

Date Received DEC. 27th, 1940.

Smelter Lot 3,177

Shipper Lot 6

BOUGHT OF T. S. ARMSTRONG,

Street 1400 EVANS ST.

City McKEESPORT, PA.

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
ISCo.	201	52,560	7.20	48,776

Check delivered to R.C.Finley, Globe, Arizona.

N. Y. QUOTATIONS

Date

Copper (per lb.)

Less

Silver (per oz.) 70.625¢

Gold (per oz.) $32.20

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Silver	[illegible] oz.	[illegible] lb. 7.60 oz. at [illegible] Per oz.		[illegible]
Gold .106 oz.	.106 oz. per ton less - lb. .106 oz. at 32.20 Per oz.			3.41
Silica %	units at Per unit			
Alumina %	units at Per unit			
Iron %	units at Per unit			
Lime %	units at Per unit			
Sulphur %	units at Per unit			
	Excess Metal Values			
	Treatment charge		3.50	
		TOTALS	3.50	9.94
	Net Value per ton			6.44

Purchase Price to be paid to

Luis Juarez, 24,388 Dry tons at $ 6.44 — 157.0[illegible]

Globe, Ariz.

Sampling. tons @

Packing 26.28 tons @ $1.50 — 39.42

Freight. Trucking 26.28 " @ 2.00 — 52.56 — 91.98

Trucking to be paid to

Virgil Burke, Globe, Arizona.

Trucking.

AMOUNT DUE SHIPPER — 65.08

Less % Royalty

NET AMOUNT DUE SHIPPER — $ 65.08

Correct: W. Allen

Approved: [illegible]

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

FORM 13 6M 7 39 9347 W P

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 3237

Shipper Lot 7

BOUGHT OF T. S. Armstrong

Street 1400 Evans St.

City Mc Keesport, Pennsylvania

DATE January 25, 1941

Date Received January 21, 1941

RECEIVED JAN 2

Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
ISCO.	201	31,040	2.10	30,388

Make Check for balance to:

R. C. Finley

Globe, Arizona

N. Y. QUOTATIONS

Date	
Copper (per lb.)	
Less	
Silver (per oz.)	70.625¢
Gold (per oz.)	$32.20

ASSAY and ANALYSIS			PAYMENTS PER TON						DEBITS	CREDITS
Copper	.25	%								
Silver	6.75	oz.	6.75	lbs. per ton less	5 %	6.41	lbs. at	Per lb.		
Gold	.050	oz.	.050	oz. per ton, less	- %	.050	oz. at 70.625¢	Per oz.		4.53
Silica	76.5	%		oz. per ton, less			oz. at $32.20	Per oz.		1.61
Alumina	9.1	%		units at		Per unit				
Iron	3.6	%		units at		Per unit				
Lime	.5	%		units at		Per unit				
Sulphur		%		units at		Per unit				
				units at		Per unit				
			Excess Metal Values							
			Treatment charge						3.50	
							TOTALS		3.50	6.14
			Net Value per ton							2.64

Royalty to be paid to

15.194 Dry tons at $ 2.64 — 40.11

Sampling, tons @

Freight,

Trucking, 15.52 tons @ $2.00 — 31.04

Trucking to be paid to

Virgil Burke

Globe, Arizona

AMOUNT DUE SHIPPER

Less % Royalty — 9.07

NET AMOUNT DUE SHIPPER — 9.07

Correct:

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

FORM 13 BM 7 39 9342 W P

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 3317

Shipper Lot 8

BOUGHT OF T. S. Armstrong

Street 1400 Evans Street

City McKeesport, Pennsylvania

DATE February 21, 1941

Date Received February 18, 1941

QUOTATIONS

Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
ISCo.	202	38,700	3.80	37,229

Mail Check to -

R. C. Finley, Globe, Arizona

Date	
Copper (per lb.)	11.775¢
Less 2.5 =	9.275
Silver (per oz.)	70.625¢
Gold (per oz.)	$32.20

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Cu	2.93	%	58.6 lbs. per ton less	10 %	48.6	lbs. at	9.275¢	Per lb.			4.51
Silver	12.10	oz.	12.10 oz. per ton, less	5 %	11.49	oz. at	70.625¢	Per oz.			8.11
Gold	.080	oz.	.080 oz. per ton, less	- %	.080	oz. at	$32.20	Per oz.			2.58
Silica	68.9	%	units at		Per unit						
Alumina	5.7	%	units at		Per unit						
Iron	5.1	%	units at		Per unit						
Lime	.7	%	units at		Per unit						
Sulphur	4.8	%	units at		Per unit						
			Excess Metal Values 15.20 - 15.00 = .20 @ 10%							.02	
			Treatment charge							3.50	
							TOTALS			3.50	15.20
			Net Value per ton								11.68

Packing Paid To:
Luis Juarez

Globe, Arizona

Trucking to be paid to

Virgil Burke

Globe, Arizona

18.6145	Dry tons at $ 11.68		217.42
Sampling.	tons @		
Packing	19.35 tons @ $1.50	29.02	
Trucking.	19.35 tons @ $2.00	38.70	67.72
AMOUNT DUE SHIPPER			149.70
Less	% Royalty		
NET AMOUNT DUE SHIPPER			149.70

Correct:

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Order Lot [illegible]

Shipper Lot 2

DATE 10-23-[illegible]

Date Received 10-23-[illegible]

BOUGHT OF Johnson & Rangeler

Route [illegible]

City Globe, Arizona

[illegible]	250	25,000	1.00	24,707

[illegible]

[illegible]

[illegible]

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form IE-SM 2/41-5-6-W-T

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

RECEIVED JAN 2 1943 D.M.E.A.

Smelter Lot 5662

Shipper Lot 9

DATE 1-18-43

Date Received 1-14-43

BOUGHT OF Rose C. Finley

Street 511 S. Hill St.

City Globe, Arizona

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT		N. Y. QUOTATIONS
IS Co.	201	10,300	8.60	9,414		Date
						Copper (per lb.) 11.775
						Less 2.5% 9.275
						Silver (per oz.)
						Gold (per oz.)

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Copper	5.80	%	116.0	lbs. per ton less	16	%	104.40	lbs. at 9.275	Per lb.		9.68
Silver	.24	oz.		oz. per ton, less		%		oz. at	Per oz.		
Gold	.010	oz.		oz. per ton, less		%		oz. at	Per oz.		
Silica		%		units at			Per unit				
Alumina		%		units at			Per unit				
Iron		%		units at			Per unit				
Lime		%		units at			Per unit				
Sulphur		%		units at			Per unit				
			Excess Metal Values								
			Treatment charge							3.50	
								TOTALS		3.50	9.68
			Net Value per ton								6.18

Royalty to be paid to

4.707 Dry tons @ $4.18 — 29.09

Sampling 6.29 tons @ $1.00 — 6.29

Trucking to be paid to

Freight,

Trucking,

AMOUNT DUE SHIPPER — 22.80

Less % Royalty

NET AMOUNT DUE SHIPPER — 22.80

Correct:

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Tulsa Metals Corp.
P. O. Box 3210
Tulsa, Oklahoma

Form 15

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 9917

Shipper Lot 2

BOUGHT OF Joel Gaddis

Street

City Globe, Arizona

DATE April 6, 1943

Date Received April 7, 1943

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
LSGo	907	11,720	1.00	11,603

Date

Copper (per lb.) 11.775¢

Less 2.5 = 9.275¢

Silver (per oz.) 70.625¢

Gold (per oz.) $ 32.20

ASSAY and ANALYSIS			PAYMENTS PER TON			DEBITS	CREDITS
Copper	1.48	%	44.4 lbs. at	100 %	38.4 lbs. at 9.275¢ per lb.		3.56
Silver	13.33	oz.	13.33 oz. per ton less	5 %	12.66 oz. at 70.625¢ per oz.		8.94
Gold	.116	oz.	.116 oz. per ton less	- %	.116 oz. at $32.20 per oz.		3.74
Silica		%	units at		per unit		
Alumina		%	units at		per unit		
Iron		%	units at		per unit		
Lime		%	units at		per unit		
Sulphur		%	units at		per unit		
Excess Metal Values			16.24 - 19.00 = 1.24 @ 10%			.12	
Treatment charge						3.50	
					TOTALS	3.62	16.24
Net Value per ton							12.62

Royalty to be paid to
R. G. Finley
511 S. Hill St.,
Globe, Arizona

Trucking to be paid to
Virgil Banks
Globe, Arizona

5.0025 Dry tons at $ 12.62			73.21
Sampling 5.00 tons @ 1.00			5.00
			68.21
Freight. Fed. Tax on trucking		.53	
Trucking. 5.06 tons @ $3.00		17.98	18.11
AMOUNT DUE SHIPPER			49.90
Less 15 % Royalty after trucking			7.48
NET AMOUNT DUE SHIPPER			42.42

Correct: [illegible]

Approved [illegible]

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 3

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 6095 DATE May 28, 1943

Shipper Lot 2 Date Received May 24, 1943

BOUGHT OF R. C. Finley (Victory Metals Co. Lease)

Street 311 S Hill St.

City Globe, Arizona

RECEIVED JAN 2

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT	
1980.	201	49,620	2.50	48,360	

N.Y. QUOTATIONS

Date

Copper (per lb.) 11.779¢

Less 2.5 at 9.279¢

Silver (per oz.) 70.625¢

Gold (per oz.) 832.20

ASSAY and ANALYSIS			PAYMENTS PER TON	DEBITS	CREDITS
Copper	1.69 %	33.0 lbs. per ton less 10 # %	23.0 lbs. at 9.279 Per lb.		2.13
Silver	7.76 oz.	7.75 oz. per ton, less 3 %	7.37 oz. at 70.625¢ Per oz.		5.21
Gold	.093 oz.	.093 oz. per ton, less ∞ %	.093 oz. at 832.20 Per oz.		3.06
Silica	%	units at	Per unit		
Alumina	%	units at	Per unit		
Iron	%	units at	Per unit		
Lime	%	units at	Per unit		
Sulphur	%	units at	Per unit		
		Gross Metal Values			
		Treatment charge		3.50	
			TOTALS	3.50	10.40
		Net Value per ton			6.90
Royalty to be paid to		24.19 Dry tons at	6.90		166.91
		Sampling. tons @			
		Freight. Fed. tax on trucking		1.96	
Trucking to be paid to		Trucking. 24.81 @ 2.50		62.03	63.89
Virgil Parks		AMOUNT DUE SHIPPER			103.02
Globe, Arizona		Less Gross Due Smelter 23 Lot 1070			27.04
		Less Trucking-Lot 6076			61.31
		Net Amount Due Shipper			$ 14.67

Correct: Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 7915 Kilpatrick Lease Mariana Mine

Shipper Lot 1

DATE October 4, 1944

Date Received September 24, 1944

BOUGHT OF R. C. Finley

Street 511 So. Hill St.,

City Globe, Arizona

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
ISCo —	201	73,100	1.60	71,930

N. Y. QUOTATIONS

Date

Copper (per lb.) 11.775

Less 2.5 = 9.275

Silver (per oz.) 70.625

Gold (per oz.) $32.20

ASSAY and ANALYSIS			PAYMENTS PER TON					DEBITS	CREDITS
Copper	3.19	%	63.8 lbs. per ton less	10%	53.8 lbs. at 9.275	Per lb.			4.99
Silver	7.09	oz.	7.09 oz. per ton, less	5 %	6.74 oz. at 70.625	Per oz.			4.76
Gold	.055	oz.	.055 oz per ton, less	1 %	.055 oz. at $32.20	Per oz.			1.77
Silica	59.4	%	units	59.4					
Alumina	4.9	%	4.9 units @	10-49.0		10 Units			
Iron	10.3	%	units at		Per unit				
Lime	.4	%	units at		Per unit				
Sulphur	13.4	%	units at		Per unit				
			Treatment Charge					4.50	
			Less Silica Credit 10 units @ 1¢ per unit					.10	
			Net Treatment charge					4.40	
						TOTALS		4.40	11.52
			Net Value per ton						7.12

Royalty to be paid to

35.965 Dry tons at $ 7.12 256.07

Sampling tons @

Freight

Trucking

AMOUNT DUE SHIPPER 256.07

Less % Royalty

NET AMOUNT DUE SHIPPER $256.07

Trucking to be paid to

$1466.65 - 35 = 60

484.53 - 10 = 45

3 00.05 - 16 = 39

9.42 07 - 76

1 .65 8 H 220

Correct:

84) 1796.65 (21.40 Av.

168

1 46

84

265

220) 1796.65 (8.15 Grade

1760 $ 4.38 per ton

360

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

DATE October 14, 1944

Date Received [illegible] 1, 1944

RECEIVED JAN 2 1958 D.M.E.A.

r Lot 7942

per Lot 1

HT OF M. C. Finley ([illegible])

11 So. Mill st.,

City Globe, Arizona

	WET WEIGHT	Moisture %	DRY WEIGHT
	39,345	1.30	39,541

N. Y QUOTATIONS

Date

Copper (per lb.) 11.775

Less [illegible] = 9.275

Silver (per oz.) 70.625

Gold (per oz.) [illegible]

and ANALYSIS	PAYMENTS PER TON		DEBITS	CREDITS
4.42	88.4 lbs. per ton, less 10%	78.4 lbs. at 9.275 Per lb.		7.27
2.95	22.1 oz. per ton, less 5 %	1.80 oz. at [illegible] Per oz.		15.40
[illegible]	[illegible] oz. per ton, less - %	.26 oz. at [illegible] Per oz.		8.37
64.5	unit at 64.5	Per unit		
4.4	units at 10 = 44.0	[illegible] .5 unit excess silica		
	units at	Per unit		
	units at	Per unit		
	units at	Per unit		
	Excess Metal Values 31.04 - 15.00 = 16.04 @ 10%		1.60	
	Treatment charge		4.50	
	[illegible] Credit [illegible] .5 units		[illegible]	
			[illegible]	[illegible]
	Net Value per ton			[illegible]

ity to be paid to

19.7705 Dry tons at $ 25.18 — 497.23

Sampling, tons @

Freight,

Trucking,

ing to be paid to

AMOUNT DUE SHIPPER — 497.23

Less % Royalty

NET AMOUNT DUE SHIPPER [illegible]

Approved:

orrect:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 8130

Shipper Lot 1

BOUGHT OF Kilpatrick Bros

Street box 1029,

City Globe, Arizona

DATE December 1, 1944

Date Received November 24, 1944

RECEIVED JAN 2 1958 D.M.E.A.

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
Isco	211	33,480	1.90	32,844

N. Y. QUOTATIONS

Date

Copper (per lb.) 11.775

Less 2.5 = 9.275¢

Silver (per oz.) 70.625¢

Gold (per oz.) $32.20

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Copr	4.55	1.58 %	91.0	lbs. per ton less	10%	%	81.0	lbs. at	9.275¢	Per lb.	7.51
Silver	15.63	.336 oz.	15.63	oz. per ton, less	5	%	14.85	oz. at	70.625¢	Per oz.	10.49
Gold	.180	oz.	.180	oz. per ton, less	–	%	.180	oz. at	$32.20	Per oz.	5.80
Silica	44.9	%		units @	44.9	Per unit					
Alumina	1.3	%	1.3	units @	10-13.0	Per unit	31.9 Units Silica Credit				34.14
Iron	17.1	%		units at		Per unit					
Lime	.5	%		units at		Per unit					
Sulphur	22.1	%		units at		Per unit					
			Excess Metal Values 23.80 - 15.00 = 8.80 @ 10%							.88	
			Treatment charge							4.50	
			Less Silica Credit 31.9 units @ 1¢							.32	
									TOTALS	5.06	23.80
			Net Value per ton								18.74

Royalty to be paid to

16.422 Dry tons at $18.74 — 307.75

Sampling, tons @

Trucking to be paid to

Freight,

Trucking,

AMOUNT DUE SHIPPER — 307.75

Less % Royalty

NET AMOUNT DUE SHIPPER — $307.75

Correct: H. Flora

Approved: H. Allen

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 8201 Stuby & Hedebrand Lease

DATE December 22, 1944

Shipper Lot 2

Date Received December 14, 1944

BOUGHT OF R. C. Finley - ~~Bobtail Mine~~ Dunway Claim Mariana Mine.

Street 511 South Hill St.,

City Globe, Arizona

RECEIVED JAN 2 1958 D.M.E.R.

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
~~Lbs~~	211	55,000	3.50	53,075

N.Y. QUOTATIONS

Date	
Copper (per lb.)	11.775
Less	2.5 = 9.275
Silver (per oz.)	70.625
Gold (per oz.)	$32.20

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Copper	2.10	%	42.0	lbs. per ton, less	10	%	32.0	lbs. at 9.275	Per lb.		2.97
Silver	17.02	oz.	17.02	oz. per ton, less	5	%	16.17	oz. at 70.625	Per oz.		11.42
Gold	.170	oz.	.170	oz. per ton, less	-	%	.170	oz. at $32.20	Per oz.		5.47
Silica	70.8	%		units @ 70.8			Per unit				
Alumina	7.1	%	7.1	units x10 = 71.0			Per unit	No Silica Credit			
Iron	5.9	%		units at			Per unit				
Lime	.8	%		units at			Per unit				
Sulphur	7.3	%		units at			Per unit				
			Excess Metal Values $19.86 - $15.00 = $4.86 @ 10%							.49	
			Treatment charge							4.50	
								TOTALS		4.99	19.86
			Net Value per ton								14.87

Royalty to be paid to

26.537
2.052
53.074

Trucking to be paid to

3 26 85
3 0 74

26.5375	Dry tons at $ 14.87		394.61
Sampling,	tons @		
Freight,			
Trucking,			
AMOUNT DUE SHIPPER			394.61
Less	% Royalty		
NET AMOUNT DUE SHIPPER			$ 394.61

Correct: [illegible]

Approved: [illegible]

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 8277

Shipper Lot 2

BOUGHT OF Filpstrick Bros.

Street Box 1029

City Globe, Ariz.

DATE January 12, 1945

Date Received January 9, 1945

RECEIVED JAN 2 1955 OPEA

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
TSCo.	207	33,520	1.90	32,883

N. Y. QUOTATIONS

Date	
Copper (per lb.)	11.775
Less	2.5-9.275
Silver (per oz.)	70.625
Gold (per oz.)	32.20

ASSAY and ANALYSIS		PAYMENTS PER TON							DEBITS	CREDITS
Copper	3.54	70.8	lbs. per ton less	10 %	60.8	lbs. at	9.275	Per lb.		5.64
Silver	14.38 oz.	14.38	oz. per ton, less	5 %	13.66	oz. at	70.625	Per oz.		9.65
Gold	.135 oz.	.135	oz. per ton, less	- %	.135	oz. at	32.20	Per oz.		4.35
Silica	52.2 %		units at	52.2	Per unit					
Alumina	2.0 %	2.0	units X	10=20.0	Per unit		32.2 units silic		credit	
Iron	11.0 %		units at		Per unit					
Lime	.5 %		units at		Per unit					
Sulphur	17.8 %		units at		Per unit					
		Excess Metal Value	$19.64 -15.00 = 4.64 @ 10%						.46	
		Treatment charge							4.50	
		less silic credit 32.2 units 14 =							.32	
								TOTALS	4.64	19.64
		Net Value per ton								15.00

Royalty to be paid to

16.4415 Dry tons at $ 15.00 — 246.62

Sampling, tons @

Trucking to be paid to

Freight,

Trucking,

AMOUNT DUE SHIPPER — 246.62

Less % Royalty

NET AMOUNT DUE SHIPPER — 246.62

Correct: Helen

Approved:

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

Smelter Lot 8507 — DATE April 5, 1945

Shipper Lot 3 — Date Received March 26, 1945

BOUGHT OF Kilpatrick Bros

Street Box 1029

City Globe, Arizona

RECEIVED JAN 2 1946 DMEA

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT
ISCo	208	35080	2.40	34,238

N. Y. QUOTATIONS

Date	
Copper (per lb.)	11.775
Less 2.5 =	9.275¢
Silver (per oz.)	70.625¢
Gold (per oz.)	$32.20

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Copper	4.96	%	99.2	lbs. per ton less	10#	%	89.2	lbs. at 9.275¢	Per lb.		8.27
Silver	10.79	oz.	10.79	oz. per ton, less	5	%	10.25	oz. at 70.625¢	Per oz.		7.24
Gold	.087	oz.	.087	oz. per ton, less	-	%	.087	oz. at $32.20	Per oz.		2.80
Silica	51.3	%		units at	51.3			~~Per unit~~			
Alumina	3.4	%	3.4	units at	10=34.0			~~Per unit~~	17.3 units silica credit		
Iron	11.3	%		units at				Per unit			
Lime	.5	%		units at				Per unit			
Sulphur	16.3	%		units at				Per unit			
			Excess Metal Values	$18.31 - 15.00 = 3.31 @ 10%						.33	
			Treatment charge							4.50	
			Less Silica credit 17.3 units @ 1¢ per unit							.17	
									TOTALS	4.66	18.31
			Net Value per ton								13.65

Royalty to be paid to	17.119	Dry tons at $ 13.65	233.67
		Sampling, tons @	
Trucking to be paid to		Freight,	
		Trucking,	
		AMOUNT DUE SHIPPER	
		Less % Royalty	233.67
		NET AMOUNT DUE SHIPPER	$ 233.67

Correct: H. E. Con

Approved: H. Allen

Royalty $ 3160

2/6 Royalty - $21.02

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Form 13

INTERNATIONAL SMELTING & REFINING COMPANY
MIAMI PLANT

RECEIVED JAN 2 1958 D.M.E.A.

Smelter Lot 8608

Shipper Lot 3

DATE May 9, 1945

Date Received May 3, 1945

BOUGHT OF R. C. Finley (Bobtail Mine) MARIANNA MINE Strobel & Wellabrand Lease

Street 511 South Hill Street

City Globe, Arizona

CAR Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT	
[illegible]	208	22,960	1.00	29,660	

N. Y. QUOTATIONS

Date

Copper (per lb.) 11.775

Less 2.5 = 9.275

Silver (per oz.) 70.625¢

Gold (per oz.) $32.20

ASSAY and ANALYSIS			PAYMENTS PER TON							DEBITS	CREDITS
Cop	3.63	%	72.6	lbs. per ton less	10#	%	62.6	lbs. at 9.275¢	Per lb.		5.81
Silv	17.27	oz.	17.27	oz. per ton, less	5	%	16.41	oz. at 70.625¢	Per oz.		11.59
Gold	.152	oz.	.152	oz. per ton, less	-	%	.152	oz. at $32.20	Per oz.		4.89
Silica	72.2	%		units at	72.2			~~Per unit~~			
Alumina	5.3	%	5.3	units ~~x~~ 10 = 53.0				~~Per unit~~	19.2 units Silica Credit		
Iron	5.4	%		units at				Per unit			
Lime	.7	%		units at				Per unit			
Sulphur	4.4	%		units at				Per unit			
			Excess Metal Values $22.29 - 15.00 = $7.29 @ 10%							.73	
			Treatment charge							4.50	
			Less Silica Credit 19.2 units @ 1¢ per unit							.19	
									TOTALS	5.04	22.29
			Net Value per ton								17.25

Royalty to be paid to

14.83 Dry tons at $ 17.25 — 255.82

Sampling, tons @

Trucking to be paid to

Freight,

Trucking,

AMOUNT DUE SHIPPER — 255.82

Less % Royalty

NET AMOUNT DUE SHIPPER — 255.82

Correct: [illegible]

Approved: [illegible]

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

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COPY OF ASSAY RESULTS,

USED ON THE SEVERAL EXHIBITS.

These assays have been taken from the several reports received from ARC Laboratories, 917 W. Hatcher Road, Phoenix, Arizona.

ARC NO.	TMC NO.	SILVER oz/ton	GOLD oz/ton	COPPER %	EXHIBIT ASSAY used on
4102	HB-1	0.5	0.01	0.93	2(d)-2
4103	HB-2	1.1	0.02	1.64	2(d)-2
4104	HB-3	0.5	trc.	0.09	2(d)
4105	HB-4	trc.	trc.	0.03	2(d)
4106	HB-5	trc.	trc.	0.03	2(d)
4107	HB-6	trc.	trc.	0.03	2(d)
4108	HB-7	0.3	0.02	trc.	2(d)
4109	HB-8	trc.	trc.	trc.	2(d)
4110	HB-9	trc.	trc.	trc.	2(d)
4111	HB-10	trc.	trc.	trc.	2(d)
4112	HB-11	trc.	trc.	trc.	2(d)
4113	HB-12	trc.	trc.	trc.	2(d)
4217	EC-1	3.6	0.03	0.99	2(d)-1
4218	EC-2	0.9	0.01	2.96	2(d)-1
4219	EC-3	3.6	0.03	1.11	2(d)-1
4220	EC-4	2.5	0.02	0.93	2(d)-1
4221	EC-5	3.1	0.03	0.31	2(d)-1
4222	EC-6	0.1	0.01	0.06	2(d)-1
4223	EC-7	trc	0.01	0.68	2(d)-1
4350	EC-8	0.50	0.03	0.49	2(d)-1
4351	EC-9	3.40	0.10	0.62	2(d)-1
4352	EC-10	2.10	0.02	1.05	2(d)-1
3904	EC-6	3.00	0.03	0.74	2(d)
3910	EC-Composite	2.20	0.02	0.92	2(d)-2

Certified to be true copy of assay results and data as given on the listed exhibits.

Harvey F. Beasley, Consulting Economic Geologist

These assays have been taken from assay certificates received by Mr. Don Adams from the Arizona Testing Laboratories, 817 West Madison Street, Phoenix, Arizona and represent their results of assaying on samples removed from the Tungsten Tunnel and may be found on exhibit 2(d)-2.

LAB NO.	EXHIBIT NO.	SILVER oz/ton	GOLD oz/ton	COPPER %
125925	DA-9	4.20	0.08	
125926	DA-10	10.20	1.16	
125927	DA-11	4.20	0.06	3.60
125928	DA-12	2.40	0.10	1.70
125929	DA-13	0.80	0.08	0.50
125930	DA-14	4.80	0.08	3.10
125931	DA-15	7.80	0.10	3.40
125932	DA-16	1.60	0.08	1.60
125933	DA-17	3.00	0.06	2.90
125934	DA-18	1.20	0.04	1.20
125935	DA-19	1.00	0.04	2.40
125936	DA-20	0.80	0.02	
125937	DA-21	2.60	0.06	
125938	DA-22	0.60	0.02	
125939	DA-23	2.80	0.08	0.05

Certified to be true copy of assay results and data as given on the listed exhibits.

Harvey F. Beasley

Harvey F. Beasley, Consulting Economic Geologist.

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A R C L A B O R A T O R I E S

FOR: Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

DATE: July 24, 1957

LAB NO. EIW 1812

Air table studies on ore from Mariana or Bobcat Mine.
E. L. Whipple & Associates milling facilities were used.

RESULTS

Lab. No.	Description	Copper %	Silver oz/ton	Gold oz/ton
3910	Heads	0.92	2.20	0.02
3911	35-60	0.92	2.80	0.01
3912	60-100	1.45	3.00	0.04
3913	100-150	1.60	4.20	0.02
3914	150-200	2.00	5.65	0.06
3915	-200	2.40	9.65	0.07
3916	35-60 Conc.	4.62	11.90	0.17
3917	35-60 Tails	0.61	2.40	trace
3918	100-150 Conc.	6.30	20.65	0.20
3919	100-150 Tails	0.62	2.00	trace

Respectfully submitted,
ARC LABORATORIES
John T. Long, Jr.

Certified to be a true copy of Arc Laboratories report
No. EIW 1812.

Harvey F. Beasley, Consulting
Geologist.

Exhibit 2(g)

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A R C L A B O R A T O R I E S

FOR: Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

DATE: July 30, 1957

LAB. NO. EIW 1812

RESULTS

Material balance on sized and processed fractions.

Plus 35	21.0 lbs.
35-60	7.0
60-100	3.75
100-150	1.375
150-200	2.0
-200	2.75

35-60 Conc. 0.50 (7.14% of 35-60 heads.)
35-60 Tails 6.50
14 tons of heads produced 1 ton of concentrate.

100-150 Conc. 0.25 (18.18% of 100-150 heads.)
100-150 Tails 1.125
5.5 tons of heads produced 1 ton of concentrate.

Respectfully submitted,
ARC LABORATORIES

Certified to be a true copy of Arc Laboratories report No. EIW 1812.

Harvey F. Beasley, Consulting Geologist.

Exhibit 2(g)

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A R C L A B O R A T O R I E S

FOR: Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

DATE: July 26, 1957

LAB. NO. 3950

Summary of Work Done on The Marianna Mine

RESULTS

Prospect Samples

The analysis of samples submitted from the mine have indicated a substantial amount of mineralization. The range of copper values is from 0.12% to 7.40%, silver from 0.50 to 11.4 oz. per ton and gold from a trace to 0.24 oz. per ton. Substantial amounts of lead and zinc are also present but have not been analysed for in any of the samples. Both oxide and sulfide copper minerals are present. The fact that sulfide minerals occur at the surface indicates that the predominate mineralization at depth will be sulfide ores.

Milling tests

Two milling tests have been made on a dry, air agitated gravity table. The first series of runs by Mr. Wilson Davis did not give satisfactory results because of the small size of the various fractions and the short time allotted each fraction of the table. The second series of tests were run by E. L. Whipple & Associates on a much larger sample and under carefully controlled conditions. The results of the second series of tests showed that ore could be up-graded by gravity methods. On the 35-60 fraction copper values were increased from 0.92% to 4.62%, silver from 2.80 oz. per ton to 11.90 oz. per ton, and gold from 0.01 oz. per ton to 0.17 oz. per ton. On the 100-150 fraction copper values were increased 1.60% to 6.30%, silver from 4.20 oz. per ton to 20.65 oz. per ton, and gold from 0.02 oz. per ton to 0.20 oz. per ton.

These tests indicate that with a moderate size reduction and a suitable gravity method a bulk concentrate could be made from the ore. Since it appears that the sulfide minerals will be the predominant ones a refined concentrate could in all probably be produced by flotation. The

necessity for fine grinding to completely liberate the values can be seen from the fact that the silver values increased approximately 4 times on the 35-60 fraction and approximately 5 times on the 100-150 fraction. The copper in the samples studied occurred as both sulfide and oxide minerals. As a general rule it will not be possible to concentrate both types of minerals by either gravity or flotation meana. In the tests run to date the oxide mineralswhere not concentrated were discarded in the tails. It is possible that an electrostatic method could produce concentrates of both the sulfide and oxide copper minerals.

Recommendations

The next step in evaluating the property should be to develop or prove out ore reserves. After this is done milling tests should be conducted on representative ore from the mine.

Smelter calculations indicate that satisfactory ore either as a high grade crude or a concentrate can be sold to Arizona smelters. The silica credits in the ore adequately off-set the penalties from iron and aluminum.

Respectfully submitted,

ARC LABORATORIES

George G. Olson

Certified to be a true copy of Arc Laboratories report No. 3950.

Harvey F. Beasley, Consulting Geologist.

Exhibit 2(g)

ITEM 3

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 3: Accessibility of Project

(a) Tulsa Minerals Corp. Representative:

Mr. Everett L. Costle, Superintendent, Arizona District, Box 1662, Globe, Arizona, telephone Garfield 5-2401, will be available to aid any DMEA representative.

The property is reached by driving up Icehouse Canyon approximately 4 miles; turn to the right and stay on the Pinal Mountain Recreation Road for approximately 8 miles. At this point a trail road plunges off to the right for 2 miles onto the property. Tulsa Minerals Corp. signs are placed at all strategic places. The access road into the property is chained off, making it necessary to contact Mr. Costle for ingress to the property.

All mine workings, as described heretofore, are accessible with the exception of the lower portion of the shaft which will probably need de-watering for inspection, if deemed necessary. Prior notification of arrival for inspection would expedite de-watering and allow Mr. Costle to be available to the DMEA representative.

(b) Shipping and Supply Points:

Globe, Arizona, 14 miles from the Bobtail prospect is used as base of operations.

Straddling highways 60 and 70, it is also serviced by a branch of the Southern Pacific Railroad. An airfield at Cutter, Arizona, 6 miles east of Globe, is available for light twin-engine airplanes.

All personnel reside in the Globe-Miami area. See following Exhibit 3(a).

ITEM 4

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 4: The Exploration Project

(a) Proposed Exploration Program:

The first phase of the proposed exploration program will constitute the drilling and coring of the Tungsten vein and Bobtail vein from locations as presented on Exhibit 4(a).

1. Bobtail Vein

Five holes have been proposed to evaluate the extent and mineral content of this vein. These holes, numbered 1B through 5B are shown on Exhibit 4(a). The holes cover a lateral distance of approximately 3,000 feet and will have a maximum difference of 400 feet in elevation where 1B and 5B penetrate the vein. Exhibit 4(a)-1 is a cross-section of each hole depicting the proposed length of hole and position of the hole in respect to the vein. Hole 5B is not included on this Exhibit.

2. Tungsten Vein

This vein will be explored in like manner by drilling and coring. The Exhibits 4(a) and 4(a)-1 contain the location and other data for the proposed holes on the Tungsten vein.

Although the program has been set up as depicted on the Exhibits, it is understood that the information obtained by the drilling of each hole will control the attitude and positioning of the succeeding hole. A close supervision will be kept on all drilling and coring with representative samples caught for all material penetrated. As the program is now set up, it will necessitate 2,300 feet of total hole for the 10 holes as located. An additional 1,000 feet of hole has been proposed for verification of data obtained on the initial drilling and to ascertain the true position and value of the veins on the extreme western end to establish the optimum position for permanent mining installations. Should the exploration prove the existence of an economic ore body, the veins will be exploited by the initiation of mining activities on the extreme western end of the veins which will allow direct penetration of the veins along strike at a very low level.

Should results from the exploration drilling be economically satisfactory, a 1,500-foot drilling program has been proposed for development of water for milling purposes. Tulsa Minerals Corp. has had preliminary "dry concentration" tests run on ores from the area but flotation concentration would be of greater benefit and less expensive if sufficient water is developed in the adjacent

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 4 continued:

valley. A study has been made on available water, and it appears that the Gila Conglomerate, contained in the adjacent valley, will be a source of sufficient water to establish a flotation process.

(b) Access Roads:

Subsequent to any drilling activities, it would be necessary to "dress up" the existing 2 miles of trail road, to build trails to the drill locations and repair 1.5 miles of trail road to the eastern end of the property. These activities will be accomplished by Company-owned D-7 Caterpillar and motor patrol.

A minimum amount of drilling and blasting would be necessary to the construction of the access trails.

Road Schedule

Type of Road	Length	Type Construction
Main road repair	2 miles	Dress up of existing road
Drill locations road	1 mile	Construct trail access road
Access to east end	1.5 miles	Repair trail road

(c) Instigation and Completion of Projects:

Should an exploration contract with DMEA be executed, the work on access roads would start immediately, with drilling started a week therefrom.

All work is expected to be completed two months after initiation.

Progress

It is estimated that 100 feet of drilling and/or coring can be done per day. There is no data on daily drilling progress available for this area.

Road building and maintenance - coincident with the drilling activities - would consume approximately 24 days. Drilling of exploratory holes for water is estimated to take two weeks.

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 5: Experience

Tulsa Minerals Corp. was formed in February 1956 as a closed corporation, subsidiary of O. R. Burden Construction Corporation, also a closed corporation, to engage in the exploration, development, mining, milling and marketing of ore from various proposed mining ventures. On May 25, 1956, Tulsa Minerals Corp. entered into a lease agreement for the Lucky Boy properties, 21 miles south of Globe, Arizona. This property was a uranium prospect and after months of drilling, together with other exploratory and development work, the property was put into production December 4, 1956. While the work was going forward on the Lucky Boy properties, Tulsa Minerals Corp. entered into another lease agreement in August 1956 for the Suckerite property approximately 54 miles north of Globe, Arizona. This property, too, was a uranium prospect and after substantial exploratory and development work, this property was put into production on November 14, 1956.

During the first quarter of 1957 Tulsa Minerals Corp. became the largest uranium ore shipper to the government's Cutter Ore Buying Station located approximately 7 miles east of Globe, Arizona. On June 30, 1957, the Atomic Energy Commission closed the Cutter Ore Buying Station; this was quite a blow to Tulsa Minerals and most of the other uranium producers in the area inasmuch as large sums of money had been spent on the various properties in the area to develop them into good commercial producers, and then before we could recoup our initial investments in the properties, the market was terminated. However, Tulsa Minerals was able to ship uranium ore in the amount of 2,025 tons from its Lucky Boy mine and 2,584 tons from its Suckerite mine, or a total gross value of $143,365.49, before the Cutter Ore Buying Station was closed. Upon carefully reviewing our situation, we found it uneconomical to ship to Grants, New Mexico, the closest shipping point. With these facts in mind, Tulsa Minerals terminated its interest in the Lucky Boy and Suckerite properties.

Back in November 1956 we were contacted by Mr. Don C. Adams pertaining to the leasing of the Bobtail and Extension properties, but Tulsa Minerals Corp. did not reach an equitable agreement at that time. With the cessation of uranium mining activities in the Globe area, we again took stock of the various copper, lead, gold and silver prospects that had been presented to us. With additional field surveys and correlation of results it was elected to try to work out a more equitable agreement on the properties presented to us by Mr. Don C. Adams. On August 15, 1957, an agreement was reached and equipment was moved to the property to proceed with a limited amount of exploratory work. This was done in an attempt to determine whether the properties held any merits. To date we have prospected, surveyed, mapped and taken extensive samples of the properties. In some cases Tulsa Minerals had to do considerable de-watering and mucking of the old diggings in order that a clearer picture could be obtained of

ITEM 5 continued:

these properties. The results of our findings is the basis of our request for aid in the further exploration of these properties.

If this proposed exploratory program is inaugurated, Tulsa Minerals Corp. plans to have Chief Geologist Harvey F. Beasley and Superintendent Everett L. Costle in charge of operations. Both men have been associated with Tulsa Minerals Corp. since early 1956 and biographies of each are attached as Exhibits 5-1 and 5-2 respectively.

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

BIOGRAPHY

NAME: Harvey F. Beasley

ADDRESS: P. O. Box 86, Casper, Wyoming - 1626 Westridge Terrace

OCCUPATION: Consulting Economic Geologist

DATE OF BIRTH: 9-28-19

EDUCATION

Natrona County High School - 1936
Casper College, 1945-1947 - Associate of Science
University of Wyoming, 1948-1950 - Bachelor of Science
Prof. Curriculum - Geology

EXPERIENCE

1936 - Civilian Conservation Corps, Forest Service Dept., Sheridan, Wyoming

1937 thru 1942 - Construction Engineer and Surveyor with United States Bureau of Reclamation, Casper, Wyoming. Constructing Quartermaster, Cheyenne, Wyoming, and the United States Engineering Department, Corps of Engineers, in British Guiana, South America, and Colorado Springs, Colorado

1943 thru 1945 - U.S.A.A.F., 8th Air Force, England. Two years overseas duty.

School

1948 - Chief Field Engineer, The Lummus Company of N.Y., on enlarging and improving Standard Oil Refinery at Casper, Wyoming

School

1950 thru 1951 - Petroleum Geologist, Sohio Petroleum Corp., Rocky Mountain Region. Resigned to accept employment with The Ohio Oil Company.

1951 thru 1952 - Petroleum Geologist, The Ohio Oil Company, Rocky Mountain Region. Resigned to go into consulting work.

1953 - Consulting Petroleum Geologist, with activities relegated to geological supervision on drilling oil wells.

EXHIBIT 5-1

EXHIBIT 5-1 continued:

1954 - Consulting in diverse petroleum activities during the first part of year. Latter part of year was relegated to obtaining experience in uranium and mining geology through a five-month personally financed tour and association of mining activities in Colorado, Wyoming, Utah, South Dakota and Northern Arizona. This includes two months of airborne investigations.

1955 to Present - Consulting Economic Geologist on minerals for companies, corporations and individuals in the states of: Arizona, Colorado, Nevada, New Mexico, Montana, Oregon, South Dakota, Utah, Wyoming and Tennessee.

Companies and corporations to which consulting services have been supplied:

Forest Oil Corporation	Casper, Wyoming
Champlin Oil Company	Casper, Wyoming
Sunray-Mid-Continent Oil Co.	Casper, Wyoming
Heart Mountain Oil Company	Billings, Montana
R. L. Manning Drilling Co.	Denver, Colorado
Nevtah Mining Company	Reno, Nevada
Sam B. Bailey & Associates	Lovelock, Nevada
Cheyenne Mining & Uranium	Omaha, Nebraska
Urova Company	Omaha, Nebraska
Globe Mining Company	Casper, Wyoming
Craibar Company	Casper, Wyoming

AFFILIATIONS

Wyoming Geological Association; American Association Petroleum Geologists; American Institute Mining Engineers. Registered Land Surveyor, Wyoming.

REFERENCES

Dr. Horace D. Thomas, Professor of Geology, University of Wyoming, Also State Geologist

Dr. D. L. Blackstone, Jr., Professor of Geology, University of Wyoming

Mr. George R. Veronda, Division Manager, Forest Oil Corporation, Casper, Wyoming

Mr. Fred Carr, Division Geologist, British American Oil, Denver, Colorado

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

BIOGRAPHY

NAME: Everett L. Costle

ADDRESS: P. O. Box 1662, Globe, Arizona

OCCUPATION: Superintendent

DATE OF BIRTH: 3-14-1900

EDUCATION

Sheridan Elementary School, Sheridan, Montana - 8 years
Sheridan High School, Sheridan, Montana - 4 years
One-Year U.S. Naval Courses Taken:
Civilian Instructor Training Course; Principles and Functions of Administration & Management; Management Techniques for Supervisors; Supervisory Leadership and Human Relations

EXPERIENCE

1921 - 1928 Mine Foreman, Gladstone Mines & Red. Co., Sheridan, Montana

1928 - 1941 Foreman (2 Years), Red Pine Mine, Sheridan, Montana; Miner (1 Year), Smuglar Mining Company, Sheridan, Montana; Miner (9 Mos.), Victory Mining Company, Sheridan, Montana; Foreman (1 Year), Leiter Mines Co., Sheridan, Montana; Miner, A.C.M. Mining Co., Butte, Montana; Miner, Buckeye Mining Company, Sheridan, Montana; Miner, Wiaent & Steiner Mining Co., Sheridan, Montana; Foreman, Farmer Bros. Mining, Deep Lake, Washington; Assistant Foreman and Foreman, High Ridge Mines, Twin Bridges, Montana; Miner, Kersarege Mines, Virginia City, Montana; Miner, Broadway Mining Company, Silver Star, Montana

1941 - 1945 Marine Pipefitter, Puget Sound Navy Yard, Bremerton, Washington

1945 - 1955 Supervisor, Ordnance, Navy Ammunition & Net Depot, Seal Beach, California

REFERENCES

J. C. Roberts, Contractor - 819½ First Avenue, Spokane, Washington
James Bradley, Chief Quarterman - Navy Ammunition & Net Depot, Seal Beach, California

EXHIBIT 5-2

ITEM 6

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 6: Estimate of Costs

(a) Independent Contracts:

3000 feet Non-coring @ $2.30/ft.	$ 6,900.00	
300 feet Coring @ $5.40/ft.	1,620.00	
1500 feet Drilling on Water Exploration @ $3.50/ft.	5,250.00	
	$13,770.00	
Cement, Mud, Seaming, etc., @ 20% of Total	2,754.00	
		$16,524.00

Costs based on low bid of Boyles Bros. Drilling Company, 1016 East Minnezona, Phoenix, Arizona

(b) Personal Services: (Two-month Period)

Tulsa Minerals Corp. Superintendent @ $660/mo.	$ 1,320.00	
Labor, Skilled @ $19.50/day	1,014.00	
Labor, Unskilled @ $17.42/day	905.84	
Geological & Engineering Services @ $1,300/mo.	2,600.00	5,839.84

(c) Operating Materials and Supplies:

Gasoline - 2,000 gallons	$ 560.00	
Diesel - 1,200 gallons	228.00	
Oil, Misc. - 100 gallons	56.00	
Blasting Powder - 500 lbs.	108.00	
Power Saw @ $0.21/day	10.92	
Line Oiler @ $0.05/day	2.60	
Jackhammer Oil - 2 gallons	2.50	
Miscellaneous Small Tools & Supplies	150.20	
100 feet Air Hose @ $0.10/day	5.20	
		1,123.42

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 6 continued:

(d) Operating Equipment:

Unit	How Supplied	Cost/Day* to TMC	Days		
1 Compressor - 165	TMC	$ 2.91	50 days	$ 145.50	
2 Compressors- 600	TMC	17.22	25 days	430.50	
D-7 Cat-Dozer	TMC	13.04	25 days	326.00	
Chev. Truck 4x4	TMC	4.47	50 days	223.50	
Pickup	TMC	1.25	50 days	62.50	
Jeep	TMC	1.19	50 days	59.50	
Farm Wagon w/Water Tank	TMC	0.10	50 days	5.00	
Motor Patrol	TMC	9.23	25 days	230.75	
Light Plant	TMC	0.47	25 days	11.75	
Office & Warehouse Vans	TMC	5.46	25 days	136.50	
					$ 1,631.50

(e) Initial Rehabilitation and Repairs:

None

(f) New Buildings, Fixtures, Installations:

None

(g) Miscellaneous:

1. Cost of general maintenance and repair on operating equipment listed under 6(d)	$ 815.75	
2. Analytical work, accounting, insurance, taxes and other required costs	1,493.16	
		$ 2,308.91
		$27,427.67

*Daily equipment cost is the actual rate of depreciation chargeable to that particular piece of equipment and does not include any operative or maintenance cost.

ITEM 7

Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

ITEM 7: Financing

(a) Tulsa Minerals Corp. is prepared to furnish one-half of the total amount of this proposed $27,427.67 project; namely, $13,713.84, as will be required by entrance into a contract with the Defense Minerals Exploration Administration. This request for aid has been approved by the stockholders of Tulsa Minerals Corp. as well as the stockholders of the parent company, O. R. Burden Construction Corporation, P. O. Box 5216, Tulsa, Oklahoma. (See Item 5). O. R. Burden Construction Corporation will secure any obligations incurred by Tulsa Minerals Corp.

(b) Tulsa Minerals Corp. proposes to furnish its one-half, or $13,713.84, of the cost of this proposed exploration project as follows:

1. Cash in the amount of $12,082.34 will be made available and furnished as needed.

2. Equipment listed in Item 6(d) in the amount of $1,631.50 will be made available for the project. Most of this equipment is currently on the properties.

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 29 1958
DATE INITIAL
5/29 C 220
225

224 New Customhouse
Denver 2, Colorado
May 27, 1958

Mr. J. S. Burden, President
Tulsa Minerals Corp.
P. O. Box 5216
Tulsa, Oklahoma

Re: Docket No. DMEA 4908 (Copper)
Bobtail et al claims
Gila County, Arizona

Dear Mr. Burden:

This responds to your letter of May 23, 1958, regarding the denial of the captioned DMEA application for Government aid.

Should the results of your contemplated drilling be favorable, we would welcome a new DMEA application on this property. Your new application should contain all the data obtained since your first application was submitted.

Enclosed for your use are the following:

1. Copy of DMEA Order 1, revised.

2. Five copies of the application, Form MF-103.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Alternate Acting
Executive Officer
DMEA Field Team, Region III

Op. Comm. 2

TULSA MINERALS CORP.

J. S. BURDEN
PRESIDENT
P. T. THIBODAUX
VICE PRESIDENT
W. G. EASTMAN
SECY-TREAS.

TE 8-0545
BOX 5216
TULSA, OKLAHOMA

DMEA
DEPARTMENT OF THE INTERIOR
MAY 26 1958
REGION III
DENVER, COLORADO

May 23, 1958

Mr. W. H. King
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA-4908 (Copper)
Bobtail et al Claims
Gila County, Arizona

Dear Mr. King:

To say that we were quite unhappy to receive Mr. C. O. Mittendorf's letter of April 10 pertaining to the refusal of our application for exploration aid is putting it mild.

Inasmuch as we still have a favorable opinion of this prospect, we have contracted Boyles Bros. Drilling Company of Salt Lake City, Utah, to proceed with the drilling of Diamond Drill Holes #2 and #6 as plotted on the map attached to our amendment request of February 4, 1958. In relation to the drilling of these two holes, if favorable results are obtained, we are wondering if it would then be possible for reappraisal and reviewing of our application pertaining to our properties in Gila County, Arizona.

Yours very truly,

TULSA MINERALS CORP.

J. S. Burden

J. S. Burden
President

JSB:hl

cc: Mr. Connors
Mr. Beasley
Mr. Costle

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/9	Griswold	500
4/9	Selfridge	130
4/9	Lamb	130
4/9	Kiilsgaard	130
"	Johnson	110
"	Gottendorf	100
		220
		225

APR 10 1958

Mr. J. S. Burden, President
Tulsa Minerals Corporation
Box 5216
Tulsa, Oklahoma

Re: Docket No. DMEA-4908 (Copper)
Tulsa Minerals Corporation
Bobtail, et al., Claims
Gila County, Arizona

Dear Mr. Burden:

Your application for aid for an exploration project and other data available to us in Washington concerning your application have been reviewed. We have also reviewed your letter of April 1, 1958, addressed to Mr. W. H. King.

Projects approved by the Defense Minerals Exploration Administration must, in its judgment, show definite promise of yielding materials of acceptable grade in quantities that will significantly improve the mineral supply position for the National Defense Program.

Careful study of all our information, although noting copper mineralization on your property, indicates to us that the probability of disclosing significant ore reserves is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

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

Sincerely yours,

(for)

Administrator

WRGriswold/er 4/9/58
Copy to: Docket
Admr R File
Op. Committee
Mr. McMahon, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code

April 9, 1958

Memorandum for the Files

From: Director, Division of Base Metals

Subject: Justification for Denial of Application, Docket No. DMEA-4908, Tulsa Minerals Corporation, Bobtail, et al., Claims, Gila County, Arizona, Copper.

The examiners, the Field Team and the commodity members here are unanimous in recommending denial of this application. The Base Metals Division concurs.

We have here a couple of veins which have produced ore, but from relatively small, erratic pods, maybe a thousand tons in all. We would be inclined to disagree with the reviewers if the structures were stronger but, with the weak, tight structures in evidence, we can see little chance for ore bodies of any significance.

W R Griswold

W. R. Griswold

WRG/er
Copy to: Docket
Admr R File
Chron.

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

April 4, 1958

ORIGINAL FILE COPY
DMEA
RECEIVED APR 7 1958
DATE | | CODE
4/7 | C | 226
| | 500

Memorandum

To: Chairman, Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4908 (Copper) Tulsa Minerals Corporation (Bobtail et. al. claims) Gila County, Arizona

Enclosed are two copies of a letter from the Applicant dated April 1, 1958, and two copies of our reply.

Will you please reply to the Applicant's letter.

E. N. Harshman

E. N. Harshman

EXTRA COPY
RECEIVED 7 1958
CODE

224 New Customhouse
Denver 2, Colorado
April 4, 1958

Mr. J. S. Burden, President
Tulsa Minerals Corporation
P. O. Box 5216
Tulsa, Oklahoma

Re: Docket No. DMEA 4908 (Copper)
(Bobtail et. al. claims) Gila
County, Arizona

Dear Mr. Burden:

This will acknowledge receipt of your letter dated April 1, 1958, regarding the field examination of the captioned claims.

The Joint Report of Examination of the Bobtail et. al. claims was forwarded to the Washington Office, DMEA, March 19, 1958.

Your letter of April 1, 1958, is also being forwarded the Washington Office, DMEA, for their reply. The Administrator will advise you of his final decision on your application.

Very truly yours,
Original signed by
E. N. HARSHMAN

E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III

HNC:dp

cc: Chm. Op. Comm. (2)
Harshman
Romslo
Emerick
Docket
Chron.

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DMEA
RECEIVED APR 7 1958
DATE INITIAL CODE
DMEA
DEPARTMENT OF THE INTERIOR
APR 3 - 1958
REGION III
DENVER, COLORADO

April 1, 1958

Mr. W. H. King
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA-4908 (Copper)
(Bobtail et al Claims)
Gila County, Arizona

Dear Mr. King:

This office is somewhat disturbed as it was felt by our Messrs. H. F. Beasley and E. L. Costle that during the February 19th field inspection by Mr. T. M. Romslo of the U.S.B.M. and Mr. W. L. Emerick of the U.S.G.S. that these gentlemen were not very well impressed with our holdings inasmuch as our surface showings are not as strong as some of the large copper producing properties. Granting this to be true, however, we do have more showings than others, such as the new copper discovery made by American Smelting and Refining Company just out from Tucson. This discovery, as we understand it, was made almost entirely by instruments under directions of AS&R's geophysicist. This company is now engaged in an extensive drilling program because of this discovery. There are other features that are in our favor--we know that we are in the right zone; that these properties produced copper in the early 1900's under very difficult economic conditions; and that our re-opening of the old workings, together with an extensive sampling program, shows very definitely the existence of copper, gold and silver on these properties.

The surface indications directly above the tungsten tunnel, which is drifted in along the tungsten vein for several hundred feet, represent the weakest surface showings on the properties. However, production was obtained here drifting in along the vein and from the various raises, stopes and winzes. Assay reports pertaining to this tunnel, as contained in our application, look quite favorable, together with the enclosed assay report from ARC Laboratories. Lab. No. 4524 of the report was a composite sample made up of channel samples taken every five feet from portal to face of the tungsten tunnel; Lab. No. 4525 was a composite sample taken down the Bobtail shaft; and Lab. No. 4527

COPY

covers sample of surface outcropping at location of proposed DDH #8. This further supports the fact that surface outcroppings are not the final word.

We fully realize that even though we have surveyed and mapped the tungsten vein for approximately 3-1/2 miles and the paralleling Bobtail vein, and have taken extensive samples of the area which will give some degree of merit to these properties, they would be classified as a low grade copper producer and would hold little value unless a concentrating mill of suitable size was installed in the immediate area of any mining activity. That is to say, if sufficient reserves can be delineated by a drilling and exploration program as presented in our application, we are in a position to install a suitable mill on the property.

We are of the opinion that Tulsa Minerals Corp. is the first concern of any consequence to enter this area since 1929 and initiate an extensive exploration program and the first concern to tie up this large a grouping of the original copper, gold and silver producing properties of the Doak Mining District. We sincerely believe these properties hold commercial value and that we are justified in our request for a D.M.E.A. loan.

Hoping for a favorable decision to our request, we remain

Yours very truly,

TULSA MINERALS CORP.

J. S. Burden

J. S. Burden
President

JSB:hl
Enclosure

cc: Messrs. Conners
Beasley
Costle
Adams

COPY

PR[illegible] EVELOPMENT

OFFICIAL FILE COPY
DMEA
APPLIED RESEARCH
RECEIVED APR 7 1958
DATE

ARC LABORATORIES

Division of [illegible] Consultants, Inc.
917 W. HATCHER RD. PHOENIX, ARIZONA WINDSOR 3-3573

FOR: Tulsa Minerals Corp.
P.O. Box 5216
Tulsa, Oklahoma

DATE January 31, 1958

LAB No.

RESULTS
Corrected Report

Lab. No.	Description	Copper %	Gold oz/ton	Silver oz/ton
4524	Tungsten Composite # 1	2.28	0.12	9.60
4525	Bobtail Composite	3.91	0.40	28.80
4527	Bobtail Hole # 8	0.39	0.02	0.80

Respectfully submitted,
ARC LABORATORIES

George G. Olson

As a mutual protection to clients, the public and this corporation, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from this corporation.

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

April 3, 1958

Docket No. DMEA-4908 (Copper)
Tulsa Minerals Corporation
Gila County, Arizona

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of Field Examination Report

The examiner's report that the two vein structures which would be tested are essentially barren where exposed and that there is little chance of encountering a significant ore body under the geologic conditions observed. Accordingly, they recommend that the application be denied.

I concur with that recommendation.

A. D. McMahon

A. D. McMahon

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

DMEA
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4-4
4-7
WRG
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500

IN REPLY REFER TO:

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

DATE	INITIALS	CODE
3/28	C	220
3/28	CORS.	500
Memorandum		

March 27, 1958
Re: DMEA 4908
Tulsa Minerals Corporation
Bobtail, etc. claims
Gila County, Arizona
$27,427.67 - Copper

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team Report

The applicant requested assistance in exploring by core drilling two breccia veins. Shipments, probably not over 1,000 tons, have been made from the two veins.

The examiners found the Tungsten and Bobtail veins to be tight and lightly mineralized veins in fault structures. The sulfide lenses in the Tungsten tunnel range in thickness from a knife edge to one foot, but locally widths of up to 4½ feet are mineralized as shown by sample no. 13464, which assayed

Copper %	Gold Oz/ton	Silver Oz/ton
2.16	Tr.	2.4

Inferred reserves of milling grade do not exceed 3,000 tons. The Bobtail vein is considered less promising by the applicant and was not examined.

why?

In the opinion of the examiners, "it is unlikely under the geological conditions that a more significant ore body could be expected at depth". They recommend that the application be denied. I concur with the recommendation.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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RECEIVED MAR 21 1958

DATE		CODE
3/21	C	220
3/26	NB	130
3/26	C	220
3/26	WRS	500

224 New Customhouse
Denver 2, Colorado

March 19, 1958

4908

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Docket No. DMEA (Copper) Tulsa Minerals Corporation (Bobtail et. al. claims) Gila County, Arizona - Joint Report of Examination

Enclosed are the original and two copies of the Joint Report of Examination on the subject property.

The field examiners conclude that the surface exposures of the Tungsten vein are generally tight, unmineralized, and characterized only by iron-stained alteration and silicification. The vein exposures in the Tungsten tunnel are not strong or persistent in mineralization and the examiners believe it is unlikely that a significant ore body could be expected at depth. They recommend that the application for Government aid be denied.

We concur in this recommendation.

W H King
W. H. King
Executive Officer

Reviewed by
DMEA OPERATING COMMITTEE
3-26-58
(date)

MINERAL DEPOSITS
DMEA
RECEIVED
MAR 17 1958

U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

RECEIVED MAR 21 1958

3/26	2/3	130
		220

Box 4126 University Station
Tucson, Arizona

TRANSMITTED
MAR 1 - 1958

March 14, 1958

Memorandum

To: W. H. King, Executive Officer, DMEA Field Team, Region III

From: T. M. Romslo
W. L. Emerick

Through: ~~E. N. Harshman~~

Subject: Docket DMEA-4908 (Copper) Tulsa Minerals Corporation (Bobtail et al claims), Gila County, Arizona Joint Field Examination Report.

Enclosed are the original and 8 copies of a joint field examination report recommending denial on the above subject property.

Also enclosed is the Bureau copy of Routing Control Sheet. The Survey copy of the application is being returned to Mr. Harshman's office.

Original signed by
T. M. Romslo

T. M. Romslo
U. S. Bureau of Mines

W L Emerick

W. L. Emerick
U. S. Geological Survey

DMEA
DEPARTMENT OF THE INTERIOR
MAR 18 1958
REGION III
DENVER, COLORADO

TMR:WLE:ms

cc: W. H. King (8)
E. N. Harshman
DMEA/TUC
Emerick

Reviewed by
DMEA OPERATING COMMITTEE
3-26-58
(date)

Encls.

FOR UNITED STATES GOVERNMENT USE ONLY

ON-SITE Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED

MAR 1 0 1958

DMEA-4908 (Copper) Tulsa Minerals Corporation

(Bobtail et al claims)

Gila County, Arizona

ORIGINAL FILE COPY
DMEA
RECEIVED MAR 21 1958

DATE	INITIALS	CODE
3/26	LB	130
		220

W. L. Emerick, Geologist
U. S. Geological Survey

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

Reviewed by
DMEA OPERATING COMMITTEE
3-26-58
(date)

March 1958

DMEA-4908 (COPPER) TULSA MINERALS CORPORATION
(BOBTAIL ET AL CLAIMS)
GILA COUNTY, ARIZONA

CONTENTS

	Page
Introduction	1
Summary and Recommendation	1
Location, Accessibility and Local Facilities	2
Property	4
Geology	7

ILLUSTRATIONS

Figure		
1.	Location map	Following page 2
2.	Claim, topography and geology map	In folder
3.	Plan and Assay map, Tungsten tunnel	In folder
4.	Assay map, Bobtail shaft	Following page 7

INTRODUCTION

The Defense Minerals Exploration Administration received an application early in 1958 from the Tulsa Minerals Corporation, P.O. Box 5216, Tulsa, Oklahoma, for aid in exploration for copper on the Bobtail et al claims, Gila County, Arizona. The application was given docket number DMEA-4908, reviewed by the Operating Committee and forwarded to the Field Team, Region III, for an examination of the property and recommendations. An amended application was received by the Field Team February 12, 1958.

The field examination was made February 19, 1958 by W. L. Emerick, geologist, U. S. Geological Survey, and T. M. Romslo, mining engineer, U. S. Bureau of Mines. They were accompanied by the corporation's representatives, Harvey F. Beasley, assistant general manager and chief geologist, and Everett L. Costle, superintendent of field operations.

SUMMARY AND RECOMMENDATION

The deposit is a fissure vein type in schist country rock. The veins of the district follow the schistosity, locally crosscut in places, and in general are barren or weakly mineralized. Where mineralized the principal visible sulphides of the veins are chalcopyrite and pyrite associated with galena, sphalerite, silver, gold and tungsten. Ore reserves are insignificant.

Proposed work of the application as amended consisted of repair and building of access roads and diamond-drilling of 10 holes from the surface to test the Tungsten vein at depth. If found warranted, proposed work consisted of 1,000 feet of additional diamond-drilling and the drilling of a 1,500-foot water well for milling purposes. The estimated total cost of the project was $27,427.67.

The field examiners conclude that most of the surface exposures of the Tungsten vein are generally tight, unmineralized, and characterized only by an iron-stained alteration and silicification. Where exposed in the Tungsten tunnel the mineralization is not strong or persistent. The sulphide lenses branch, pinch and swell, and appear to be generally erratic and non-persistent. Concentration of sulphides in the vein seems to be local rather than general. The sulphide lenses were selectively mined in the past. It is unlikely under the geological conditions that a more significant ore body could be expected at depth.

The field examiners recommend that the application for government aid be denied.

LOCATION, ACCESSIBILITY AND LOCAL FACILITIES

The Bobtail et al claims are about 10 air miles southwest of Globe, Arizona, in secs. 11, 12, 13 and 14, T. 2 S., R. 14 E. and secs. 6 and 7, T. 2 S., R. 15 E., Gila County, Arizona (fig.1).

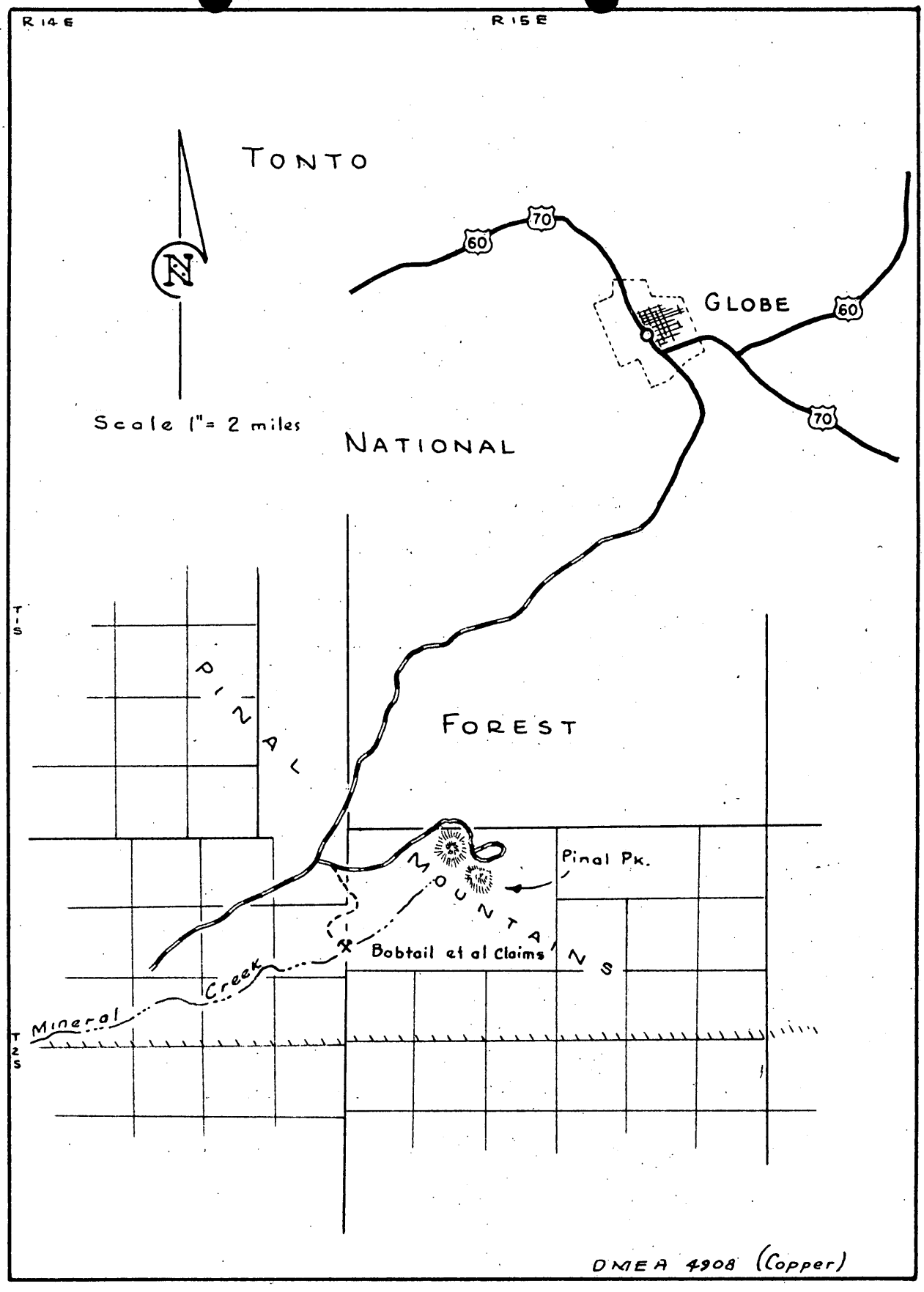

Fig.-1- Location map, Tulsa Minerals Corp, Bobtail et al Claims
Gila County, Arizona

Globe is located on U. S. Highway 60 and 70 and is the terminus of a branch line of the Southern Pacific railroad. It is the county seat of Gila County.

The claims may be reached from Globe by driving 1.8 miles southwesterly on the Icehouse Canyon Road to its junction with the Pinal Mountain Recreation Road. Proceed 8.6 miles on the latter road to the access mine road that forks to the right. Continue 1.5 miles on the access road to a parking area on the right side. All roads to the parking area are county maintained and are readily passable, when dry, with a passenger automobile. A 4-wheel drive vehicle is necessary for the 0.3 mile of rough and steep road from the parking area to the Tungsten tunnel.

Other exploratory workings on the claims may be reached from the access road via unimproved roads, parts of which are very rough and steep.

The Bobtail et al claims (Fig. 2) are at an average altitude of about 5,000 feet on the southerly slope of the Pinal Mountains. Signal and Pinal Peaks, at about 2 miles northeast of the property, lie along the crest of the mountain range at altitudes of 7,800 and 7,850 feet, respectively.

Mineral Creek, an intermittent stream, drains southwesterly from near the aforementioned peaks and roughly bisects the long axis of the property. In general, the slopes along the creek are very

steep and adjacent terrain is moderately rugged.

Much of the area is covered with a fairly thick growth of scrub oak, manzanita and other bushes.

The summers are hot and the winters are mild. Precipitation, of about 15 inches per annum, occurs mainly as heavy summer rainstorms and light rain and snowfalls in the winter.

PROPERTY

History and Production

The present principal underground workings on the Bobtail and Tungsten veins (Fig. 2) were known as the Mariana Mines when examined by Harlow D. Phelps[1/] in November 1945. He said:

> "The property was located about 1898. F. J. Lunn of Globe, Arizona, was interested in the property during this early period and the present shaft is believed to have been sunk at that time. Litigation closed the property in 1904. About 1926 the Rosengartens of New York acquired a clear title to the property and did considerable work. Fifty men were employed at one time. A road was built and a post office established at Doak. The shaft was retimbered, an 800-foot water tunnel driven, and a 20,000-gallon storage tank for a mill was installed.
>
> "According to a report by John H. Slate, mining engineer of New York, dated November 15, 1929, ore shipments were made which averaged 0.44 ounces per ton gold, 25.6 ounces per ton silver and 7.51 percent copper. The tonnage is not stated. He estimates the ore reserve at 60,000 tons - 25 percent shipping ore and 75 percent milling ore.

1/ Phelps, Harlow D., mining engineer, formerly of the U. S. Bureau of Mines, Mariana Mine, Gila County, Ariz., Unpublished Report, November 1945.

"The depression of 1929 stopped all work. Some years later the present owner got the property by acquiring all the outstanding stock. A caretaker was placed in charge of the mine, but little or no work was done until the recent lessees started operations.

"Messrs. Strobel and Wedebrand, of Globe, Arizona, made 3 shipments, totalling 61.14 tons to the International Smelter at Miami in 1944. The ore averaged 3.2 percent copper, 19.1 ounces per ton silver and 0.19 ounces per ton gold. This ore came from the 20- and 50-foot levels, above the water level at the shaft.

"The Kilpatrick Brothers of Globe made four shipments to the Miami Smelter, totalling 85.94 tons, during 1944 and 1945 from this so-called Tungsten tunnel. The ore averaged 3.87 percent copper, 10.8 ounces per ton silver and 0.10 ounces per ton gold, with no payment or penalty for the zinc and tungsten.

"In both cases this grade of ore was produced by selective mining or hand sorting. The lessees had stopped working at the time of the Bureau examination."

Smelter settlement sheets furnished by Tulsa Minerals Corp. indicated the 1944 and 1945 production period of Phelps' report may have started in December 1940 and terminated in May 1945. The sheets list shipments totalling about 285 tons of ore containing an average of 2.8 percent copper, and 0.11 ounce gold and 12.06 ounces silver a ton. James E. Bell[2/] visited the workings of the Tungsten vein in May 1941 to check on the reported occurrence of tungsten. He found that at places minor amounts of hubnerite was associated with sulfide minerals in pockets of quartz. R. C. Finley, Globe, Arizona, lessee of the mine at that time, may have produced some of the ore not accounted for by Phelps.

2/ Bell, James E. Letter report on Bobtail Tungsten group, May 10, 1941.

Little or no work is believed to have been done on the property from 1945 to late 1957 when it was acquired by Tulsa Minerals Corp. The corporation's activities have been mainly confined to prospecting, surveying and mapping, and sampling. In some cases dewatering and mucking out of old workings was necessary.

Total production from the property probably does not exceed 1,000 tons of ore.

Extent and ownership of the property

The property comprises a group of 33 unpatented lode mining claims (fig. 2).

Tulsa Minerals Corporation, the applicant, owns 7 of the claims, the Tulsa and Tulsa Nos. 1 to 6, by locations made December 9, 1957. Location notices for these claims were a part of their application. Three additional claims, Tulsa Nos. 7 to 9, also are owned by the applicant by subsequent locations, according to Mr. Beasley.

The applicant owns the remaining 23 claims by the following Lease and Option Agreements.

Owner	Claims
R. T. Jones, P. O. Box 352 Arlington, Arizona	4 claims: Top Notch, Top Notch No.3 and Little Frank Nos. 5 and 6.
T. S. Armstrong, Carlisle, Pennsylvania, et al	15 claims: Burro Nos. 1 to 4, Bobtail Nos. 1 to 8, Bobaway, Protection and the Stolen Transit
Don C. Adams and Ethel T. Adams, husband and wife, 905 North Sixth Street, Phoenix, Arizona	4 claims: Extension and Extension Nos. 2 to 4.

The applicant's mailing address is: Tulsa Minerals Corporation, P. O. Box 5216, Tulsa, Oklahoma. Officers of the corporation are: J. S. Burden, president; P. T. Thibodaux, vice-president; and W. G. Eastman, secretary and treasurer.

Present status

The property is inactive.

Mine workings of significant extent are confined to those shown on figures 3 and 4.

Equipment on the property is confined to a 500-watt Kohler electric generator, a 120 CFM portable compressor and a model D-4 bulldozer, all of which are located near the portal of the Tungsten tunnel. Considerable other equipment, including bulldozers, compressors, trucks, pneumatic drills, etc., are in the corporation's storage yard in Globe.

There are no buildings on the claims.

GEOLOGY

The applicant's property (Fig. 2) lies on the southwestern slope of the Pinal Mountains in an area underlain by a large mass of Pinal schist. Granite, diorite and diabase intrude the schist and have caused variations in the strike and dip of the planes of schistosity. Locally, the planes may be intensely crumpled and contorted.[3/] In general, the schistosity has a northeasterly strike and the dips range from about 30° to 62° northwest.

3/ Ransome, F. L., The Copper deposits of Ray and Miami, Arizona: U. S. Geol. Survey Prof. Paper 115, p. 34, 1919.

The Pinal schist in the report area contains many fault veins, both mineralized and unmineralized, that follow and also crosscut the planes of schistosity.[4] Generally, the fault veins of this type in this area are unmineralized and characterized only by an iron-stained alteration and silicification. Where mineralization occurs along the fault veins it is apparently never strong or persistent for any distance along the strike or down the dip. Surface debris and the rugged nature of the terrain make it difficult to trace outcrops of the fault veins with certainty in the schist. It is possible, though highly improbable, that the applicant's Tungsten vein as shown on Figure 2 has the continuity shown by their mapping.

Phelps[5] listed three veins in the schist country rock of the area, namely (1) the Bobtail shaft vein, (2) the Old Tungsten vein on the incline shaft opposite the Tungsten tunnel, and (3) the Tungsten vein. The field examiners are inclined to agree with this three-fold division.

The veins in the schist were classed by Ransome[6] as fissure veins in fault structures. Their strike, except where they crosscut, follows the planes of schistosity. The width of the veins

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4/ Peterson, N., oral communication, 1958.
5/ Phelps, H. D., op. cit., 1945.
6/ Ransome, F. L., Geology of the Globe Copper District, Arizona: U. S. Geol. Survey Prof. Paper 12, pp. 161-162, 1903.

ranges from 2 to 6 feet or more in places. Slickensides and a talcy clay appear on many of the hanging wall sides of the veins, indicating past movement along the fault. Sulphide mineralization occurs as lenses and stringers ranging in thickness from a knife-edge to locally 1 foot. However, the concentration of sulphide mineralization in the veins is not persistent laterally or dip-wise. Ransome indicated in his early report that the ore minerals occur as a cement holding together fragments of schist fault breccia, but it appears that the sulphide lenses are distinct in outline and mass within the fault.

Chalcopyrite and pyrite, the principal visible sulphides of the veins, are associated with galena, sphalerite, silver, gold and hubnerite in a quartz gangue. The oxides of copper are visible on exposed surfaces and in the shallower parts of the vein. All of the minerals appear to be of the same general age. The sequence of minerals seems to be identical in both the Tungsten and Bobtail veins.

Aside from the mineralization exposed in the vein of the Tungsten tunnel (Fig. 3) and in the short incline and drift 70 feet west of the tunnel, the surface exposures of the vein along its entire alleged length were generally tight, unmineralized, and showed only a characteristic iron-stained alteration and silicification. There were no visible evidences in prospect pits or on exposed parts of the vein of the former presence of sulphides, nor were

oxides present. A bulldozed pit (Fig. 2) having no other perceptible mineralization contained minor showings of probable molybdenite associated with quartz.

The sulphide lenses in the Tungsten tunnel range from a knife-edge to locally one foot in thickness. The lenses branch, pinch and swell, and are generally erratic and non-persistent in continuity. In places (Fig. 3) the sulphide lenses pinch out completely and have only a sparse showing of the oxides; or, the vein is simply a mineralized zone containing oxides and some disseminated pyrite. Also, in places, several thin, widely spaced sulphide lenses and stringers occur in a zone ranging from 5 to 6 feet from floor to back. In the short southwest drift off the incline 70 feet west of the Tungsten tunnel (Fig. 3), thin stringers of chalcopyrite and pyrite less than an inch thick occur in a quartz gangue along with oxides. Dip-wise the sulphide lenses in the winzes of the Tungsten tunnel were no better looking than exposed in the drift. The bottom faces of the winzes were not accessible to inspection either because they were under water or were muck-filled.

A composite sample taken by the applicant of the Tungsten tunnel vein from samples taken every 20 feet in the tunnel, up the stopes, and down the winzes shows assay results of:

Copper %	Gold oz./Ton	Silver oz./Ton
2.28	0.12	9.60

Check samples (Fig. 3) taken by the field examiners in the Tungsten tunnel, and in the incline and drift 70 feet west of the tunnel, gave the following results:

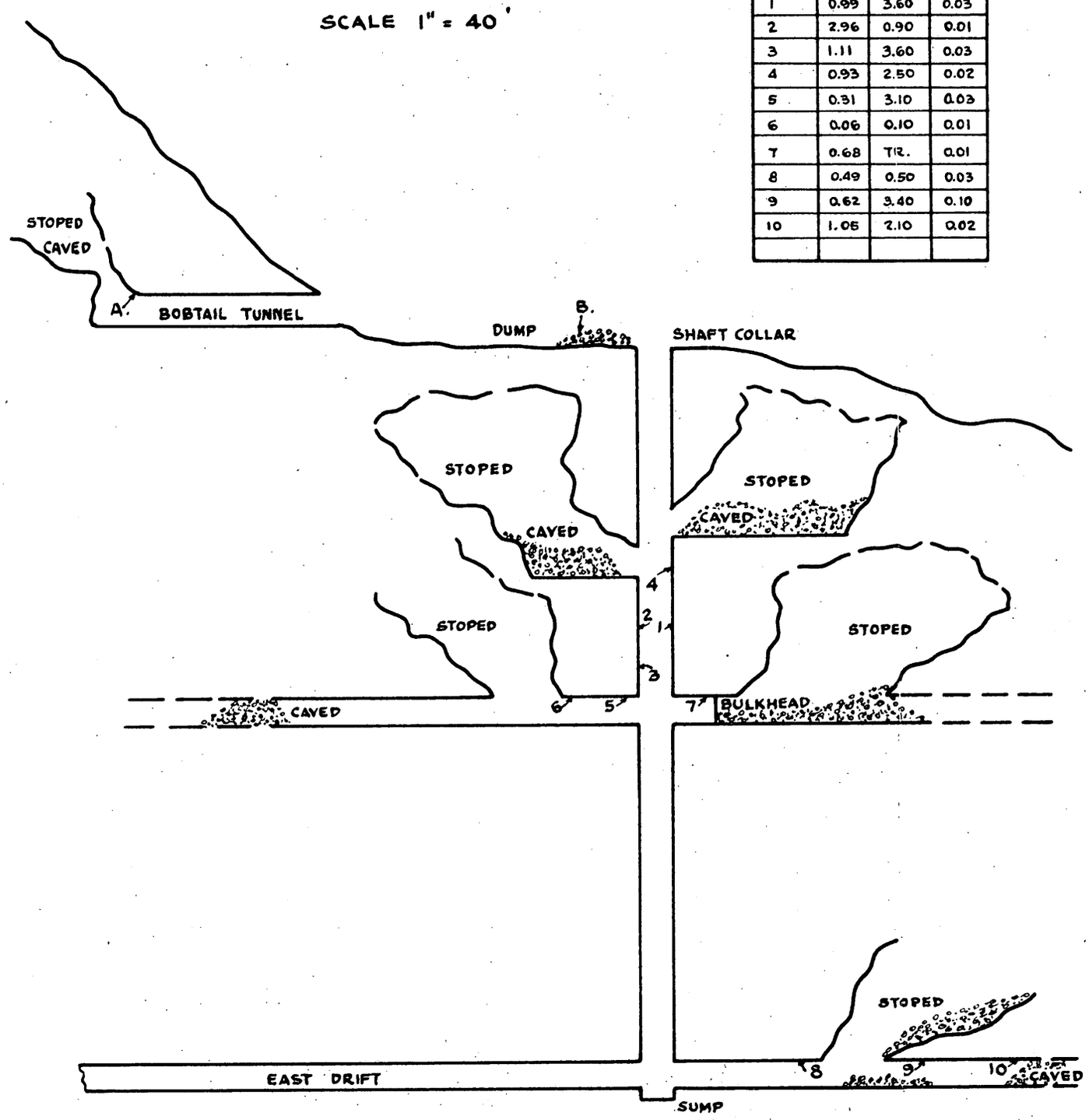
Sample No.	Copper %	Gold oz./Ton	Silver oz./Ton	Tungsten (WO_3) %	Remarks
13450	0.29	0.01	1.3	<0.01	$4\frac{1}{2}$'-5' channel chip sample across vein.
13462	1.15	0.03	5.4	<0.01	2' channel chip sample across vein.
13463	1.75	0.01	2.5	<0.01	$4\frac{1}{2}$' channel chip sample across vein.
13464	2.16	Tr.	2.4	<0.01	$4\frac{1}{2}$' channel chip sample across vein.

One other sample taken in a pit on the Tungsten vein at the far northeast end of the property (Fig. 2) gave the following results:

Sample No.	Copper %	Gold oz./Ton	Silver oz./Ton	Tungsten (WO_3) %	Remarks
13449	0.06	Nil	Tr.	<0.01	$4\frac{1}{2}$' channel chip sample across vein in small pit.

The location and assay results of samples taken by the applicant in the Bobtail shaft are shown on Figure 4.

ASSAY VALUES			
SAMPLE NO	COPPER %	SILVER OZ/TON	GOLD OZ/TON
A	5.67	38.20	0.24
B	2.16	6.10	0.19
1	0.99	3.60	0.03
2	2.96	0.90	0.01
3	1.11	3.60	0.03
4	0.93	2.50	0.02
5	0.31	3.10	0.03
6	0.06	0.10	0.01
7	0.68	TR.	0.01
8	0.49	0.50	0.03
9	0.62	3.40	0.10
10	1.05	2.10	0.02



FROM TRACING BY APPLICANT DATED NOV. 1957.

DMEA 4908

FIGURE 4.-ASSAY MAP, BOBTAIL SHAFT, TULSA MINERALS CORP. (BOBTAIL ET AL CLAIMS), GILA COUNTY, ARIZONA.

Reserves

An early report[7/] stated that there was no shipping grade ore in the Tungsten tunnel except in the winze (30-foot winze of Figure 3) and in the tunnel close to the winze. At the time this early report was written the Tungsten tunnel had been driven to about its present length and contained only the 30-foot winze, a raise opposite the present 15-foot winze, and a second short raise approximately opposite the 20-foot winze. Neither of the raises showed shipping ore at that time. Subsequent mining operations have not materially changed the upper and lower limits of mining in the tunnel over that of the early days, and the present position of the winzes may indicate where possible shipping ore could be selectively mined.

The grade of ore shipped in 1944-1945 from about 85 tons averaged 3.87 percent copper, 10.8 oz./Ton of silver, and 0.10 oz./Ton of gold. It was produced by selective mining or hand sorting.

Indicated reserves of selective shipping ore at present in the Tungsten tunnel are insignificant, and the reserves of possible milling ore probably do not exceed about 3,000 tons. The Bobtail vein was not examined, hence no estimate of possible reserves is made. Inasmuch as the applicant expressed a more favorable attitude toward the Tungsten vein and mine, it is assumed that the Bobtail vein and mine are less promising.

7/ Phelps, H. D., op. cit., 1945.

Phelps[8/] in 1945 concluded that the probability of developing a substantial tonnage of ore on the property which includes both the Tungsten and Bobtail veins was remote and highly improbable.

8/ Phelps, H. D., op. cit., 1945.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

February 10, 1958

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DMEA
RECEIVED FEB 14 1958

DATE		CODE
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2/14	~~WPJ~~	~~500~~

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4908 (Copper) Tulsa Minerals Corporation (Bobtail et al. claims) Gila County, Arizona

Enclosed is a copy of additional information submitted by the applicant, which indicates he now has obtained more land and wishes to amend his proposed work as outlined in his original application.

One copy of the additional information is being retained in our file, and copies are being forwarded to the Field Examiners to be included with their copies of the original brochure.

W H King
W. H. King

Enc.

See map in map folder Z

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224 New Customhouse
Denver 2, Colorado

February 10, 1958

Mr. Harvey F. Beasley
Tulsa Minerals Corporation
P. O. Box 5216
Tulsa, Oklahoma

Re: Docket No. DMEA 4908 (Copper)
(Bobtail et al. claims)
Gila County, Arizona

Dear Mr. Beasley:

This will acknowledge receipt of your letter dated February 4, 1958, and the four copies of additional information on the captioned docket, which were attached.

We consider this as an amended application and will include it with the copies of your original application.

Very truly yours,

Original signed by
W. H. KING

W. H. King
Executive Officer, DMEA
Field Team, Region III

HMC:bh
cc: Sec. Op. Comm. (2)
Harshman
Romslo
Emerick
Docket
Chron.

WHK
HMC

TULSA MINERALS CORP

J. S. BURDEN
PRESIDENT
P. T. THIBODAUX
VICE PRESIDENT
W. G. EASTMAN
SECY-TREAS.

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DMEA
RECEIVED FEB 14 1958
DATE

TE 8-0545
BOX 5216
TULSA, OKLAHOMA

February 4, 1958

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver, 2 Colorado

DMEA
DEPARTMENT OF THE INTERIOR
FEB 7 - 1958
REGION III
DENVER, COLORADO

Re: Docket No. DMEA-4908(copper)
Tulsa Minerals Corp.
Bobtail, et al, claims
Gila County, Arizona

Dear Mr. King:

Reference is made to the attached map and lease exhibits which are relative to additional property currently acquired by Tulsa Minerals Corp. This property is contingent to and an important extension of our present holdings on the Bobtail prospect.

Through virtue of recently completed mapping it has been ascertained that the prominent Tungsten vein is present on the property as shown on the accompanying map. In the light of geology and economics the exploration of this additional portion of the Tungsten Vein will more thoroughly substantiate the extent and value contained in the prospect.

Therefore, it is Tulsa Minerals Corporations desire to defer the drilling and coring on the Bobtail Vein in holes 1B through 5B and utilize that footage to explore the extension of the Tungsten vein by drilling and coring holes 6T through 10T as located on the attached map.

An analysis of drilling and coring depths and amount of access roads has shown that this change will not exceed the estimates as presented in the original application dated December 28, 1957.

Yours very truly,

Harvey F. Beasley

TULSA MINERALS CORP.
Harvey F. Beasley,
Ass't. General Manager

hfb/b

Encls.

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 14 1958
BY

LEASE AND OPTION

THIS AGREEMENT, made and entered into this 20th day of November, 1957, by and between ROBERT T. JONES, P. O. Box 352, Arlington, Arizona, hereinafter referred to as Lessor, and TULSA MINERALS CORP., an Oklahoma corporation qualified to transact business in Gila County, Arizona, hereinafter referred to as Lessee,

W I T N E S S E T H:

WHEREAS, the said Lessor is the owner of certain unpatented lode mining claims located in Gila County, Arizona, more particularly described herein; and

WHEREAS, Lessee desires to secure a lease and option on said property for the term and on the conditions hereinafter particularly set forth,

NOW, THEREFORE, in consideration of Ten Dollars ($10.00), lawful money of the United States, paid by Lessee to Lessor, receipt whereof is hereby acknowledged, and in consideration of the mutual agreements hereinafter contained, the parties hereto do hereby agree as follows:

1. PROPERTY: The property covered by this agreement is:

Those certain unpatented lode mining claims situated in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Doak Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Fourteen (14), Township Two (2) South, Range Fourteen (14) East, G. & S. R. B. & M., of which the names, together with the numbers of Books and the pages of Records of Mines where their respective location notices are recorded in the office of the County Recorder of Gila County, Arizona, are as follows:

NAME	BOOK	PAGE
Top Notch	41	52
Top Notch No. 3	41	53
Little Frank #5	41	53
Little Frank #6	41	54

Lessor represents, covenants and warrants to Lessee that he is the owner of said unpatented lode mining claims and has a good and sufficient merchantable title thereto which is subject only to the paramount title of the United States of America; that said claims and each of them are properly and legally monumented; that the location and assessment work has been performed on each of said claims according to law for the period ending July 1, 1957; that said claims and each of them are valid, existing locations, free from liens and encumbrances, and that Lessor has the right and power to convey the same, and that Lessor will warrant and defend Lessee in the undisturbed use and enjoyment of the demised premises, subject to compliance by Lessee with the terms and conditions of this agreement.

2. FIRST PERIOD - POSSESSION: Lessor hereby gives and grants to Lessee the exclusive right until midnight November 30, 1958, to enter upon, explore, sample and prospect the property, conduct mining operations thereon, and extract and ship ores therefrom subject to the conditions hereinafter set forth. During said period, herein sometimes referred to as "First Period," Lessee shall not be obligated to pay a minimum royalty.

3. POSSESSION AND OPERATION: At any time prior to the termination of the First Period, Lessee may give notice to Lessor that it has elected to continue its possession of the property with the right to conduct mining operations thereon, and to extract and ship ores therefrom subject to the conditions herein set forth.

In the event that the notice as herein in this Article provided shall not be given, then and in such event this agreement shall terminate on November 30, 1958, at midnight, and the Lessee shall have no further rights in or to the property (except the right to remove its machinery and equipment as hereinafter provided)

and shall be under no further obligation of any type, nature or description with respect thereto.

Upon the giving of said notice, the Lessee shall be entitled to retain the exclusive possession of said property, and to explore, sample and operate the same, conduct mining operations thereon, and extract and ship ores therefrom, subject to the conditions herein set forth.

(a) All work done upon said property by Lessee shall be done in a good and workmanlike manner and after the manner of good mining. There shall be no high grading of the property. All workings where necessary, or where directed by the State Mine Inspector or his deputy, shall be timbered properly and substantially, and with the view of developing said property into a workable mine. All mine openings shall be kept clear of obstructions and in a condition so that they can be entered, except such openings as are not necessary for future operations of Lessee. The laws of the State of Arizona and all requirements of the State Mine Inspector shall be complied with promptly.

(b) Assessment work: Lessee shall perform, at its own expense, the annual assessment work on the unpatented mining claims hereinabove described, for each year during the life of this agreement, if assessment work is required by law, and shall complete such work on or before the 1st day of April of each year and furnish Lessor proper proof thereof in a form sufficient to be recorded; provided, however, that if this agreement is terminated and notice of such termination is given to Lessor prior to the 1st day of April of any calendar year, Lessee shall not be required to perform the assessment work for the year ending on the succeeding July 1.

4. ROYALTY:

(a) Throughout the term of this agreement, Lessor reserves and Lessee agrees to pay royalties as a rental for the use and possession of the property as follows:

A royalty of four percent (4%) of the net smelter returns or sale price received for ores extracted from said mining property by Lessee and shipped, smelted or otherwise disposed of, either in the form of direct smelting ores or concentrates.

(b) "Net Smelter Returns" and "Sale Price" defined:

"Net Smelter Returns," within the meaning of this agreement, shall be the correct returns as shown by the liquidation sheets furnished by the smelter treating such ores and concentrates after such smelter shall have made its deduction for freight and switching charges, treatment, and usual smelting deductions.

"Sale Price," within the meaning of this agreement, shall be the purchase price paid for such ores and concentrates f.o.b. mine bins. No sales may be made except to a smelter unless the "Sale Price" fairly reflects the value of the mineral contents of the ores or concentrates sold.

In arriving at the net smelter returns or sale price, no deduction shall be made for hauling or any other charge of whatsoever character, except as herein expressly provided.

The deduction and payment of royalties shall be governed by smelter values or sale price per dry ton of ores.

(c) Settlements: In the event that ores or concentrates shall be disposed of to a smelter, the smelter treating such ores shall be instructed to remit to the First National Bank of Arizona at Globe, Arizona, the royalties hereinabove provided, based on net smelter returns as above defined due from it on account of ores and concentrates smelted and purchased by said smelter; and such remittance, accompanied by three liquidation sheets for each lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days apart, as may be agreed upon by the parties hereto and said smelter.

In the event said ores or concentrates shall be disposed of to a purchaser other than a smelter, said purchaser shall be instructed to remit to the said First National Bank of Arizona, at Globe, Arizona, the royalties hereinabove provided, based on

the purchase price as above defined due on account of ores or concentrates purchased, and such remittance, accompanied by three liquidation sheets containing full and complete information regarding such sale and purchase, including the price, quantities of ores and concentrates, and lot number of shipments, shall be made from week to week, or from month to month, but not more than forty (40) days apart, as may be agreed upon by the parties hereto, and said purchaser and purchasers.

The remainder of the "net smelter returns" or "sale price" shall be paid direct to the order of Lessee.

The bank named shall be instructed to hold one copy of said liquidation sheets or statements, to deliver one copy to a representative of Lessor to be named by Lessor, and to deliver one copy to Lessee, or a representative to be named by it.

(d) Distribution of Royalties: Said First National Bank of Arizona shall be and hereby is instructed to credit said royalties to Robert T. Jones, P. O. Box 352, Arlington, Arizona, or order.

(e) Minimum Royalty: Lessee shall pay to Lessor a minimum royalty of Twenty-five Dollars ($25.00) per month, beginning December 1, 1958, payable on or before January 1, 1959.

Royalties shall be paid on ore shipments as hereinabove provided, and in the event that the royalties so earned during any calendar month shall not amount to the sum of Twenty-five Dollars ($25.00), Lessee shall pay to Lessor the difference between the sum of Twenty-five Dollars ($25.00) and the amount of earned royalties paid during such calendar month.

5. TAXES: Lessee, so long as this agreement is in force and effect, shall pay all taxes levied or assessed on any machinery, equipment or improvements placed upon the property by Lessee, and shall pay all taxes levied or assessed against said property. Taxes on the property shall be prorated for periods of less than a calendar year. Lessee agrees to pay all so-called "sales Taxes," "ad valorem" and "production taxes," now or hereafter levied by

the State of Arizona, or by the United States of America, on ores and concentrates shipped from the property by Lessee under the terms of this agreement.

6. MACHINERY - REMOVAL:

(a) All machinery, equipment and personal property, together with all improvements (excepting ladders, timbers or ties in place underground) which may be placed on the property by and at the expense of Lessee, may be removed by it at any time within one hundred twenty (120) days after the termination of this agreement; provided, however, that no such property shall be removed at any time while the Lessee may be in default under any of the terms or provisions of this agreement, and the removal shall be effected in such manner as to avoid material injury or damage to the mine and improvements that are to remain thereon. If not so removed by the Lessee, the Lessor may, at his option, retain the said machinery, equipment and personal property, together with all improvements not removed, as and for his own, free of any claim of any kind on the part of the Lessee.

(b) All ores mined and placed on the dumps of the property by the Lessee during the life of this agreement may be removed and shipped by Lessee in the event of a termination of this agreement, but such ores shall be removed within sixty (60) days after such termination and shall be subject to royalty payments as herein provided. In the event such ores are not removed within said period as herein provided, title to ores not removed shall thereupon vest in the Lessor, free of any claim or charge of the Lessee.

7. NOTICE OF NON-LIABILITY: The Lessee shall not incur any debts or liens against said property or against any part thereof during the life of this agreement, and shall indemnify and save the Lessor and said property harmless from any and all liens. The Lessee further agrees to record and to post on the premises prior to commencing any operations thereon under this lease, and to use reasonable care to keep posted at its own cost

and expense, a notice, as provided by law, that the said Lessee is responsible for all claims and demands in connection with the operation of said property, and that the Lessor and said property are not liable for any claims or liens resulting from any such operations. All miners, laborers, and other persons who may labor or furnish any labor or materials in, for or upon said premises during the life of this agreement, and to whom any sum may be due from the Lessee for such labor or materials, shall be promptly paid by the Lessee. It is stipulated and agreed that should Lessee fail to fully complete and perform the condition hereinabove set forth with respect to the posting and recording of the notices of non-liability, such failure shall terminate and end any right, interest, claim or title that Lessee may have in or to said premises, or any part thereof, and shall terminate this lease forthwith. The form of such required notice of non-liability shall be furnished to Lessee by Lessor.

8. LIABILITY FOR INJURIES: Lessee hereby assumes any and all liability or liabilities arising or to arise from accidents or injuries to its agents or employees or any other person in or about the property while the same is in the possession of Lessee, and shall defend and hold Lessor harmless against any liability or responsibility for or on account of any such injuries, it being understood that the hazard of all such liability or liabilities is taken into consideration by the parties hereto in fixing the consideration under this agreement.

9. INSURANCE: Lessee shall, at all times during the life of this agreement, carry and maintain liability insurance under the Workmen's Compensation Law and under the Occupational Disease Liability Law of the State of Arizona, satisfactory to the Industrial Commission of the State of Arizona.

Lessee shall also, at its own cost and expense, comply strictly with all the terms of the Arizona Workmen's Compensation Law and the Arizona Occupational Disease Liability Law.

Lessee shall comply with all provisions of the Federal Wage and Hour Law, and shall make all payments due or to become due under the Federal and State Social Security Law, Unemployment Compensation Law, tax laws, or any other laws now in effect or that may hereafter be enacted affecting the employees of Lessee, wages paid the employees of Lessee, and the products removed from the property by Lessee, and defend and hold Lessor and the property harmless from liability by reason of its possession of or operation of the property.

10. INSPECTION: Lessor, individually or through any duly authorized representative, shall have the right to enter upon said property or any part thereof and to inspect the same at any reasonable time during the life of this agreement, at Lessor's risk.

Lessor shall also have the right to inspect records of Lessee insofar as the same cover shipments of ores and concentrates from the premises above described, or other data bearing upon the computation of payments required hereunder, at any reasonable time, but without unreasonable inconvenience to the Lessee.

11. DEFAULT: In the event Lessee shall make default in any of the terms or provisions hereinabove contained, then the Lessor, subject to the provisions of this Article, may terminate this agreement upon thirty (30) days' notice to the Lessee, specifying such defaults and stating his intention to declare this agreement at an end if the same are not corrected in said period. If the Lessee shall fail within said thirty (30) days to correct and make good any violations of the terms and provisions of this agreement specified in such notice of default, then and thereupon this agreement shall terminate, but if such defaults or violations have been corrected or remedied in such period, this agreement shall continue in full force and effect.

12. TERMINATION - TERM: Lessee may cease operations at any time and may terminate all further liability hereunder by

fifteen (15) days' written notice to the Lessor of its election to terminate said agreement.

In the event of a termination of said agreement, except by the exercise of the option hereinafter set forth, the Lessee shall forthwith deliver to the Lessor the peaceable possession of the property and shall be relieved of any further liability hereunder; but in the event of the termination of this agreement by either of said parties, the Lessee shall not be discharged from any obligation in favor of the Lessor that may theretofore have accrued under the terms hereof.

Unless sooner terminated as hereinabove provided, or by the exercise of the option to purchase hereinafter set forth, the term of this agreement shall be five (5) years from December 1, 1957.

13. OPTION: In consideration of the sum of One Dollar ($1.00), and other good and valuable consideration, the receipt whereof is hereby acknowledged, Lessor has given and granted, and by these presents does hereby give and grant unto Lessee, or to its successors or assigns, the exclusive right, privilege and option to purchase said property particularly described in Article 1 of this agreement.

14. TERM OF OPTION: This option to purchase may be exercised at any time while the preceding lease is in effect; provided, however, that in the event the preceding lease is terminated prior to the exercise of this option, it is understood and agreed that this option shall terminate with like force and effect as if this option had never existed.

15. PURCHASE PRICE: The purchase price to be paid to Lessor for said property described in Article 1 of this agreement under this option is the sum of Ten Thousand Dollars ($10,000.00), subject to the provisions of Article 16 hereof.

16. EXERCISE OF OPTION: If and when Lessee elects to exercise this option, it shall give written notice of its election to purchase to Lessor and tender the purchase price of Ten

Thousand Dollars ($10,000.00) less the sum of all payments theretofore made to Lessor, including all royalty payments, and Lessor shall accept such amount as payment in full under this option.

Anything herein contained to the contrary notwithstanding, this option shall be deemed to have been exercised by Lessee without further notice at such time as all payments theretofore made by Lessee to Lessor, including all royalty payments shall aggregate the sum of Ten Thousand Dollars ($10,000.00).

MISCELLANEOUS

17. ESCROW DEED: Lessor agrees within ten (10) days from demand therefor, to execute a good and sufficient mining deed with the warranties provided in Article 1 hereof, conveying said above described property to Lessee, or its assignee, and to place said deed in escrow with the First National Bank of Arizona at Globe, Arizona, under suitable instructions for delivery thereof to Lessee or its assigns on payment of the purchase price payable to Lessor under the option hereinabove set forth, as and when therein provided. The parties hereto shall each pay one-half of the initial escrow filing charges. In the event the escrow instructions required by the bank vary from the provisions of this agreement, the execution of such instructions by the parties hereto shall not be deemed to vary or change any of the terms hereof.

18. RELEASE: In the event of the termination of this agreement, except by the exercise of the option hereinabove set forth, Lessee or its assigns shall execute and deliver to Lessor a good and sufficient release of this agreement and of the deed in escrow, if any, or, if requested by Lessor, a quitclaim deed, and shall deliver to Lessor, upon written demand, a copy of all logs, assay results of any drilling or other development work performed, and of all maps, records or blue prints which may relate to said mining property made by or for Lessee; provided, however, that this provision

shall not be deemed to include confidential reports made from or based upon the above described items.

19. ADDITIONAL CLAIMS: Lessor expressly represents that the unpatented mining claims described hereinabove are all of the unpatented mining claims in said vicinity in which he has any interest, and further agrees that so long as this option is in force and effect he will not either directly or indirectly locate any other or additional unpatented mining claims within a radius of one (1) mile from the exterior boundaries of the premises hereinabove described, and that in the event the foregoing option is exercised, any such claim or claims so owned or located within a radius of one (1) mile shall be conveyed without charge to Lessee, and shall be subject to the terms of this agreement as though expressly described herein.

20. PLACE OF PAYMENTS: All payments and tenders to be made to Lessor hereunder shall be delivered to the First National Bank of Arizona at Globe, Arizona, which is authorized and instructed to divide and credit the same as provided in Article 4(d) hereof.

21. MEMORANDUM AGREEMENT: Lessor and Lessee shall execute and acknowledge a Memorandum Agreement for purposes of recordation which will refer to, and incorporate therein by reference, this agreement, stating therein generally that the Lessor has leased the property herein described to Lessee and granted to Lessee an option to purchase said property, all as more particularly set forth in this agreement.

22. NOTICES: All notices provided for herein may be given in writing by personal delivery of said notice, or may be given by registered mail addressed to Robert T. Jones, P. O. Box 352, Arlington, Arizona, and to Lessee at P. O. Box 5216, Tulsa, Oklahoma, and the time of said notices shall run from the date of mailing said notices or from the date of personal delivery thereof. The names of representatives or persons to whom notices shall be be given may be changed by written notice.

23. RECORDS: Lessee agrees to keep full and accurate books of account showing all production from said property.

24. NATURE AND EXTENT OF CONTRACT: This is an option coupled with a lease giving the right to operate, sample and mine, and is not a sale.

25. ASSIGNMENT: Lessee may assign this agreement or any interest therein to an assignee which shall assume the obligations of the Lessee hereunder, and this lease and option shall extend to and be binding upon the heirs, administrators, executors, successors and assigns of the parties hereto.

26. The effective date of this agreement shall be the actual date of the execution of this agreement by the parties hereto, and if the parties shall execute the same on different dates, the effective date of this agreement shall be the actual date of the signing of this agreement by the party hereto last executing this agreement.

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

Robert T. Jones
Robert T. Jones

Lessor

TULSA MINERALS CORP.

By J. S. Burden
Its President

ATTEST:

Helen H. Wallace
Its Assistant Secretary

Lessee

(Forming part of Lease and Option,
Robert T. Jones to Tulsa Minerals Corp.)

STATE OF ARIZONA,
County of Gila. } SS.

On this, the 20th day of November, 1957, before me, Floral B. Gerner, the undersigned officer, personally appeared ROBERT T. JONES, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Floral B. Gerner
Notary Public

My commission expires: June 9, 1958

STATE OF OKLAHOMA,
County of Tulsa. } SS.

On this, the 2nd day of December, 1957, before me, Alice L. Hull, the undersigned officer, personally appeared J. S. Burden and Helen W. Wallace, who acknowledged themselves to be the President and Asst. Secretary, respectively, of TULSA MINERALS CORP., a corporation, and acknowledged that they, as such President and Asst. Secretary, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as President and Asst. Secretary, respectively.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Alice L. Hull
Notary Public

My commission expires: March 31, 1959

OFFICIAL FILE COPY
DMEA
RECEIVED FEB 14 1958
DATE

MEMORANDUM OF AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

That ROBERT T. JONES, of P. O. Box 352, Arlington, Arizona, Lessor, for a valuable consideration, receipt whereof is hereby acknowledged, has leased to, and has given and granted to TULSA MINERALS CORP., an Oklahoma corporation qualified to transact business in Gila County, Arizona, or to its successors or assigns, the exclusive right, privilege and option to purchase those certain unpatented lode mining claims hereinafter described under and according to the terms and conditions of a certain Lease and Option Agreement dated November 20, 1957, executed in duplicate, a copy of which is in the possession of Lessor and Lessee. The unpatented lode mining claims covered by this memorandum and said Lease and Option Agreement of November 20, 1957, are those certain unpatented lode mining claims situated in the Globe Mining District, sometimes known as Mineral Creek Mining District, and sometimes called the Dosk Mining District, in Gila County, State of Arizona, in what will be, when surveyed, approximately Section Fourteen (14), Township Two (2) South, Range Fourteen (14) East, G. & S. R. B. & M., of which the names, together with the numbers of Books and the pages of Records of Mines where their respective location notices are recorded in the office of the County Recorder of Gila County, Arizona, are as follows:

NAME	BOOK	PAGE
Top Notch	41	52
Top Notch No. 3	41	53
Little Frank #5	41	53
Little Frank #6	41	54

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the 20th day of November, 1957.

Robert T. Jones
Robert T. Jones

TULSA MINERALS CORP.

By J. S. Burden
Its President

ATTEST:

Helen M. Wallace
Its Asst. Secretary

ORIGINAL FILE COPY
DMEA
RECEIVED
DATE

(Forming part of Memorandum of Agreement, Robert T. Jones and Tulsa Minerals Corp.)

STATE OF ARIZONA,
County of Gila. } SS.

On this, the 20th day of December, 1957, before me, Alberta B. Grimes, the undersigned officer, personally appeared ROBERT T. JONES, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Alberta B. Grimes
Notary Public

My commission expires: June 9, 1958

STATE OF OKLAHOMA,
County of Tulsa. } SS.

On this, the 2nd day of December, 1957, before me, Alice L. Hull, the undersigned officer, personally appeared J. S. Burden and Helen W. Wallace, who acknowledged themselves to be the President and Asst. Secretary, respectively, of TULSA MINERALS CORP., a corporation, and acknowledged that they, as such President and Asst. Secretary, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by themselves as President and Asst. Secretary, respectively.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Alice L. Hull
Notary Public

My commission expires: March 31, 1959

FILE COPY
DMEA
RECEIVED

DOCKET 83 PAGE 194

LOCATION NOTICE

LODE MINING CLAIM

This mining claim, the name of which is the TULSA mining claim, was located by the undersigned Tulsa Minerals Corporation on the 9 th day of December 1957

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 300 feet from the South Westerly end and 1200 feet from the North Easterly end of this claim.

The general course of this claim is from North Easterly to South Westerly

This claim is situated and located in the DOAK or sometimes called Mineral Creek Mining District, in Gila County, State of Arizona, about 1 - Mile in a in a South And Westerly direction from Old Town of DOAK, Ariz.

The South Westerly end of this claim joins Top Notch Claim No 3 on the north

And this claim parallels TULSA No1 Claim on west side

Dated and posted on the ground the day and year first above written.

TULSA MINERALS CORPORATION

By Everett L. Castle, Supt.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation
Date January 7, 1958 Time 4:15 P. M., Docket 83 Official Records Page 194
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder.

223846 By Joseph Kinsman

DOCKET 83 PAGE 195

LOCATION NOTICE

LODE MINING CLAIM

This mining claim, the name of which is the TULSA No. 1 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9 th day of December 19 57

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 300 feet from the South Westerly end and 1200 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the Doak, or some times called Mineral Creek Mining District, in GILA County, State of Arizona, about 1 - Mile in a South and Westerly direction from Old Town Of DOAK, Ariz.

This claim is bounded by Tulsa Claim on West side and by Top Notch and Top Notch No. 3 on the Southerly end, and on the East by TULSA No. # 2

DMEA

Dated and posted on the ground the day and year first above written.

TULSA MINERALS CORPORATION

By Everett L. Costle, SUPT.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation
Date January 7, 1958 Time 4:15 P. M., Docket 83 Official Records Page 195
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder.

228847

DOCKET 83 PAGE 196

LOCATION NOTICE

LODE MINING CLAIM

This mining claim, the name of which is the TULSA No. 2 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9 th day of December 19 57

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 100 feet from the South Westerly end and 1400 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the Doak, or some times called Mineral Creek Mining District, in GILA County, State of Arizona, about 1 - Mile in a South and Westerly direction from Old Town of DOAK, Ariz.

This claim is bounded on the West by TULSA No. 1 claim

DMEA
RECEIVED FEB 14 1958

Dated and posted on the ground the day and year first above written.

Tulsa Minerals Corporation

By Everett L. Costlo, Supt.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation
Date January 7, 1958 Time 4:15 P. M., Docket 83 Official Records Page 196
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written

JOSEPH KINSMAN, County Recorder.

By Joseph Kinsman

228348

DOCKET 83 PAGE 197

LOCATION NOTICE

LODE MINING CLAIM

This mining claim, the name of which is the TULSA No. 3 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9th day of December 1957

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 100 feet from the South Westerly end and 1400 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the Dook, or some times called Mineral Creek Mining District, in GILA County, State of Arizona, about 1½ - Miles in a Easterly direction from Old Town of Dook, Ariz.

The South Westerly end of this claim joins the North Easterly end of TULSA Claim And is joined on the East by Tulsa No. 4 claim. The North Easterly end of this claim joins the South Westerly end of BOSTAIL CLAIM No. 7

SPECIAL FILE COPY
DMEA
RECEIVED FEB 14 1958

Dated and posted on the ground the day and year first above written.

Tulsa Minerals Corporation

By Everett L. Castle, Supt.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation

Date January 7, 1958 Time 4:15 P.M., Docket 83 Official Records Page 197
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder

By Joseph Kinsman Deputy.

DOCKET 83 PAGE 198

LOCATION NOTICE

LODI MINING CLAIM

This mining claim, the name of which is the TULSA No. 4 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9 th day of December 19 57

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 300 feet from the South Westerly end and 1200 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the Deak, or some times called Mineral Creek Mining District, in Gila County, State of Arizona, about 1½ - Miles in a Westerly direction from Old Town of Deak, Ariz.

The South Westerly end of this claim joins the North Easterly end of TULSA No. 1 And the North Easterly end of this claim joins EGBTAIL No. 8 on the South Westerly end.

Dated and posted on the ground the day and year first above written.

Tulsa Minerals Corporation

By Everett L. Castle, Supt

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation

Date January 7, 1958 Time 4:15 P. M., Docket 83 Official Records Page 198
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder.

DOCKET 83 PAGE 199

LOCATION NOTICE

LODE MINING CLAIM

This mining claim, the name of which is the Tulsa No. 5 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9th day of December 19 57

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 500 feet from the South Westerly end and 1000 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the DOAK, or some times called MINERAL SPRING Mining District, in Gila County, State of Arizona, about 2½ Miles in a South And Westerly direction from The Old Town of DOAK, Ariz. The North Easterly end of this claim joins the South Westerly end of LITTLE FRANK No. 5 The TULSA No. 6 joins this claim on the East side

Dated and posted on the ground the day and year first above written.

TULSA MINERALS CORPORATION

By Everett L. Castle, Supt.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation

Date January 7, 1958 Time 4:15 P.M., Docket 83 Official Records Page 199
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder.

229851

DOCKET 83 PAGE 200

LOCATION NOTICE
LODE MINING CLAIM

This mining claim, the name of which is the TULSA No. 6 mining claim, was located by the undersigned TULSA MINERALS CORPORATION on the 9 th day of December 1957

This claim is 1500 feet long and 600 feet wide, and the point of discovery is 10 feet from the South Westerly end and 1490 feet from the North Easterly end of this claim.

The general course of this claim is from South Westerly to North Easterly

This claim is situated and located in the DOAK, or some times called the MINERAL CREEK Mining District, in Gila County, State of Arizona, about 2½ Miles in a South and Westerly direction from The Old Town Of Doak, Arizona. The North Easterly end of this claim joins the South Westerly end of the LITTLE DOAK No.6 The TULSA No. 5 joins this claim on the west side.

Dated and posted on the ground the day and year first above written.

TULSA MINERALS CORPORATION

By Everett L. Castle, Secy.

STATE OF ARIZONA, County of Gila, ss:
I do hereby certify that the within instrument was filed and recorded at request of Tulsa Minerals Corporation

Date January 7, 1958 Time 4:15 P.M., Docket 83 Official Records Page 200
Records of Gila County, Arizona.

WITNESS my hand and official seal the day and year first above written.

JOSEPH KINSMAN, County Recorder.

Joseph Kinsman

DMEA
RECEIVED JAN 20 1958
1/20 220
1/20 500

224 New Customhouse
Denver 2, Colorado

January 16, 1958

Memorandum

To: T. M. Romslo
W. L. Emerick

From: DMEA Field Team, Region III

Subject: Docket No. DMEA 4908 (Copper) Tulsa Minerals Corporation (Bobtail, et al., Claims) Gila County, Arizona

Enclosed is the following material relating to the subject docket:

1. Copy of application for Government assistance in exploration work under the DMEA program.
2. Memorandum of Review by A. D. McMahon, USBM.
3. Memorandum of Review by N. E. Nelson, USGS.
4. Letter of transmittal of the foregoing to this office, dated January 10, 1958, from the Chairman, Operating Committee, DMEA.
5. Routing Control Sheet.

A field examination of the property and a joint report of findings and recommendations pertaining to the Applicant's work proposal are requested.

If the field examiners recommend Government participation in the proposed exploration program, please submit eleven extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries.

The Bureau of Mines' copy of the application should not be returned to this office, but is to be kept for the Examining Engineer's file. The Routing Control Sheet, however, is to be

completed, detached from the application, and forwarded to the Executive Officer with the Joint Examination Report. The Survey's copy of the application is to be returned to Mr. Harshman's office.

W. H. King

W. H. King
Executive Officer

Enclosures

HMC:eh

cc: Sec. Op. Comm. (2)
Harshman
Docket
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
1/10	Griswold	500
1/10	[illegible]	130
1/4	Johnson	110
		100
		HB
1-13	gb	220
		500

500

Mr. W. M. King, Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4908 (Copper)
Tulsa Minerals Corporation
Bobtail, et al., Claims
Gila County, Arizona

Dear Mr. King:

The cited application is being referred to your office for consideration, a field examination of the property if warranted, and recommendations. Copies of memoranda dated January 6 and 8, 1958, by N. E. Nelson, Geological Survey, and A. D. McMahon, Bureau of Mines, respectively, relating to the project, are enclosed for your information.

In case the application should be viewed favorably, the estimated costs would require drastic revision. The drilling for water would have to be eliminated and the proposed "Personal Services" charges are impossibly out of line.

Care should be taken that proposed drill holes, should they encounter ore, would intersect well into the sulphide zone. It appears that the proposed holes 1 B and 1 T would meet the vein at inadequate depths.

Two extra copies of the application are enclosed for Field Team use.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Enclosures
APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

WRGriswold/er 1/10/58
Copy to: Docket
Admr R File
Op. Committee
Mr. McMahon, USBM
Mr. Kiilsgaard, USGS
Chron.

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
1/10	Griswold	500
1/10	Selberg	130
1/10	Lamb	130
1/10	Kiilsgaard	130
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		~~100~~
		~~110~~
1/13	gf	220
		500

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JAN 10 1958

Mr. J. S. Burden, President
Tulsa Minerals Corporation
Box 5216
Tulsa, Oklahoma

Re: Docket No. DMEA-4908 (Copper)
Tulsa Minerals Corporation
Bobtail, et al., Claims
Gila County, Arizona

Dear Mr. Burden:

Your application for Government assistance to explore the cited property has been reviewed by the Division of Base Metals of the Defense Minerals Exploration Administration and is being referred to:

Mr. W. H. King
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

If additional information concerning your application is needed, the Field Team will get in touch with you at an early date.

Sincerely yours,

Frank E. Johnson
(Rg esf)
ACTING Administrator

WRGriswold/er 1/10/58
Copy to: Docket
Admr R File
Op. Committee
Mr. McMahon, USBM
Mr. Kiilsgaard, USGS
Region III (2)
Chron.

8623

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

January 8, 1958

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of application, Docket No. DMEA 4908 (copper), Tulsa Minerals Corporation, Bobtail and Extensions Claims, Gila County, Arizona. $27,427.67.

The applicant seeks Government assistance in a proposed exploration program totaling 4,800 feet of drilling in 10 holes to test the downward and lateral extensions of two veins on the above cited property. The proposed drilling consists of 300 feet of core drilling and 4,500 feet of non-core drilling (3,000 feet with air and 1,500 feet with water) for a contract cost of $16,224.00 and a total cost of $27,127.67. Note: 1,500 feet of non-core drilling with water calculated at $3.50 per foot whereas Boyle Bros. bid stipulates $3.30 per foot.

In reference to Item 6: Estimate of Costs, 40 percent of the total cost of the project is to be used to service an independent drilling contract. This, of course, appears to be excessive for the amount and type of work to be accomplished.

It is recommended that the application be referred to the Field Team for appraisal and an examination of the property.

A. D. McMahon

A. D. McMahon

Attachment

Copy to: Division of Minerals
Branch of Base Metals (2)
Thor Kiilsgaard, U.S.G.S.
F. D. Lamb
F i l e s

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 8 1958

DATE	INITIALS	CODE
1/8	G	
1/8	WRB	220
		500

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 7 1958

DATE	INITIALS	CODE
1/8	gt	220
1/8	WRG.	500

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

January 6, 1958
Re: DMEA 4908
Tulsa Minerals Corp.
Bobtail and Extension property
Gila County, Arizona
$27,427.67 - Copper, gold, silver

Memorandum

To: W. R. Griswold, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of application

The applicant requests assistance in exploring by core drilling two breccia veins, more or less parallel as to strike but of diverging dips.

Both the Tungsten and Bobtail veins are credited with production. Probably the production of the Tungsten vein is very small, made up of railroad car and truck loads to the Miami smelter. As most of the copper was paid for at 11.775¢ per pound, the silver value, up to 17.27 oz. per ton, usually exceeded the copper value. No data are furnished concerning the value of the Bobtail ore, of which probably a greater amount was shipped.

The veins appear to have been well sampled but the data fail to tell the vein widths, so are not of much value.

Referral of the application to the Field Team is recommended.

N. E. Nelson

N. E. Nelson

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

January 2, 1958

Tulsa Minerals Corporation
P. O. Box 5216
Tulsa, Oklahoma

Gentlemen:

Subject: DMEA-4908

Your application for exploration assistance, dated December 28, 1957 submitted to our office at Denver, Colorado has been assigned Docket Number DMEA-4908 and referred to the Base Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III

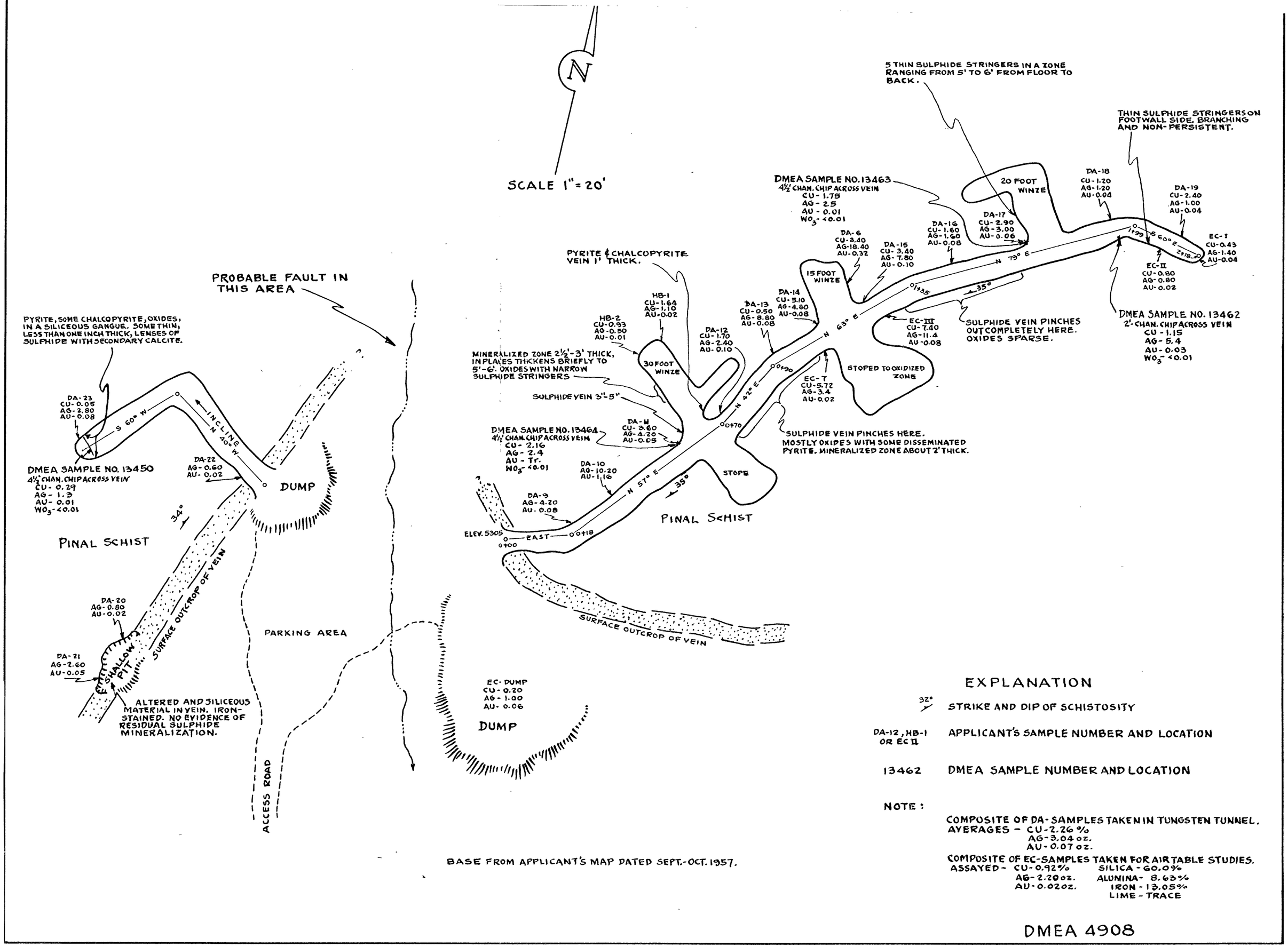

FIGURE 3.-PLAN AND ASSAY MAP, TUNGSTEN TUNNEL, TULSA MINERALS CORPORATION (BOBTAIL ET AL CLAIMS), GILA COUNTY, ARIZONA.