MF-200 (A)
(February 1952)

DOCKET NO. DMEA 2136

COMMODITY Tungsten

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Baltimore Cassa Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Utah, County of Juab, described as follows:[3]

See Annex No. 1

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: _____

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within - 60 - days from the date of this contract shall commence work on a project of exploration for[5] Tungsten

in or upon the described land; and shall bring the project to completion within a period of - 12 months - from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 75 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $19,875, which is - 75 - percent of $26,500, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____
Executive Officer, DMEA
Field Team, Region IV

By _____

_____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ [CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

Docket No. DMLA 2136

ANNEX NO. 1

Article 2. Operator's property rights

The Apex-Tungsten Group of Claims recorded as follows in the Clerk and Recorder's Office in Juab County, Utah.

Claim	Book	Page
Merry	117	149
Sun	117	150
Mineral	117	150
Metal	117	150
Bear	117	187
Bottle	117	187
Dandy	117	187
Chief	117	187
Final	117	187

EXHIBIT A

Description of the Work

The work is divided into three stages. Stage 2 is dependent upon the findings of Stage 1, and Stage 3 is dependent upon the findings of Stage 2. If in the opinion of the DMEA representative, the results of Stage 1 warrants Stage 2, Stage 2 will be authorized. If in the opinion of the DMEA representative, the results of Stage 2 warrant Stage 3, Stage 3 will be authorized.

Stage 1 consists of extending the lower drift 300 feet along the strike of the vein.

Stage 2 consists of sinking an inclined winze approximately 100 feet on the vein at a point acceptable to the DMEA representative, and drifting 300 feet on the vein in a northerly direction at the bottom of the winze.

Stage 3 consists of drifting 50 feet northwesterly on the vein from a point 300 feet east of and 50 feet lower in elevation than the lower adit.

All drifts are to be 5 feet by 7 feet in the clear. The winze is to be 4 1/2 feet by 7 feet inside the timbers.

The location of the work under Stage 1 and Stage 3 is shown on the attached map.

Estimated Costs of the Project

Stage 1	
300 feet of drift (timbered where necessary) @ $30.00/ft.	$ 9,000.00
Stage 2	
100 feet of winze @ $70.00/ft. (timbered where necessary)	7,000.00
300 feet of drift @ $30.00/ft. (timbered where necessary)	9,000.00
Stage 3	
50 feet of drift @ $30.00/ft. (timbered where necessary)	1,500.00
Total Cost -	$26,500.00
Government's participation at 75%	$19,875.00

DMA Form

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 2136

DO NOT DETACH THIS SLIP

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

This document has been recorded as

EXPLORATION

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

Routing Slip

To:	Code ~~310~~ 400 Ferro-Alloys Br.	Date	10/9/51
To:	~~Mr. Goldman Energy Branch~~	Date	Rec'd 1/7/8 ~~7/8/52~~
To:	G. Conn	Date	7-7-52
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	
To:		Date	

DO NOT DETACH

CONTROLLED DOCUMENT

12/30/52

Docket Room and Division:

Please leave markers in docket until next conference with Secretary.

COM(fw)

Mr. Nerr
Will Call You.
Chairman of the Idaho Mine Operators Association.

Off.

Write Regions

in re Exams

letter of inquiry as to status of investigation

written 12/27 - 2136
- 2137
- 2138

Cong. Berry.
Mat
3120
Cpt 521 Mr. Nerr
Call him if field report come in.
2136 - 2137 - 2138

Applicant - Bothman, Comax Mines Inc.

In re Docket Nos. 2136 Apex Claims (WO_3 + Beryl) Juab Co. Utah ✓
31,313 2137 White Pine Co ✓
#31,370 vs 2138 Minerva Min Dist, White Pine Co, Nev.

Report of Congressman Bering, Nat 3120, Ext 521
& Mr. New, Chairman, Idaho Miners Operators Association -

2136 - (In Selfridge file) → (WO_3) and (Beryl) Thayer letter 10/17 in file Q.V. —
Sent to Denver (JH East Jr.) for Field Exam Nov 2/51
letter to app. re field referral. -

2137 - No File - to Field Exam Reg. S.F. 10/31/51 - no rept

2138 (Selfridge file) - (Tungsten) Thayer letter Oct 16, 1951
recommends alternative project, discussed co
Fennimore personally worked over this patented mine in 1943 —
letter 10/22 to App. Asp. comment on App's
proposal, ~~for~~ and suggests alternative projects
- no answer from App yet —
Office file contains, escrow agreement, [illegible]
agreement, leases, letter to S.F. Field Exam Nov 13-19
- no return copy yet

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

224 New Customhouse
Denver 2, Colorado

September 17, 1952

Mr. G. P. Williams, President
Baltimore Camas Mines, Inc.
601 Eastman Building
Boise, Idaho

Dear Mr. Williams:

We wrote you on August 15, 1952 requesting additional information regarding the ownership of the property involved in your application for exploration assistance, Docket No. DMA 2136.

We also requested that certain documents be completed and sent to this office.

Will you please inform this office within the next 30 days as to what you plan regarding your request for exploration assistance. Otherwise, it will be assumed that you are no longer interested and the file will be closed.

Very truly yours,

W. H. King

W. H. King
Executive Officer
Field Team, Region IV

JFS:es

cc: Docket
Wilson
Chron.
Koschmann (2)
Secretary to the Operating Committee (3)

JBU

AUG 4 1952

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

Re: Docket No. DMA 2136 - Tungsten
Baltimore-Comma Mines, Inc.
Apex-Tungsten Mine
Juab County, Utah

Dear Mr. King:

This is to acknowledge receipt of your letter of July 16, 1952, with which you forwarded copies of the field examination report and a proposed exploration project contract.

Previously we informed you that we had some doubt concerning the integrity of Mr. Williams. After due consideration, we are willing that you proceed with the proposed contract, regardless of our confidential information, since the contract is to be written on the short form and payments will be made based on actual footage of advance and nothing more. Probably in this particular case the Operator should be held to the terms of the contract, thereby avoiding the writing of amendments.

Enclosed is one copy of Assignment of Leases, six copies of the Landlord's Subordination Agreement which relates to the subject property, and one copy of an Escrow Agreement. You will note that the assignment covers three separate properties and that the Landlord's Subordination Agreement carries an October 5, 1951, date for the exploration project contract. We have not reviewed any of the three documents from a legal standpoint. They were not sent you previously because they had been filed away in the applicant's docket No. DMA 2138.

In looking over the field report, we can see no connection between Stage III and Stages I and II. We further note that under Stage I drifting on the adit level is quoted at $30 a foot and that under Stage II drifting is quoted at the same figure although the exploration rock must be hoisted. It would seem that the work in the adit should be quoted at a figure somewhat less than that for the work down in the winze.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

Enclosures

Approved:

J. H. Hedges

Member, Bureau of Mines

D. M. Lemmon

Member, Geological Survey

cc: D. M. Lemmon, USGS
R. W. Seehan, USBM

cc: Admn. Reading File
Field Team, Reg. IV
Operating Committee
G. C. Selfridge

cc: Docket

GCSelfridge:ls
7/30/52

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

400

224 New Customhouse
Denver 2, Colorado

July 16, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket DMA 2136, (Tungsten), Baltimore Camas Mines, Juab County, Utah

This is in reply to your letter dated July 7, 1952, in which you state you had access to confidential information that was quite disturbing regarding the personal character of Mr. Williams.

We wrote Mr. Williams requesting signed copies of Owner's Consent to Lien, Form MF-203, and a copy of his lease. We have received six signed copies of Form MF-203. In a letter dated July 1, 1952, Mr. D. E. Anderson stated that a copy of the Lease and Transfer Agreement, as well as six signed copies of Landlord's Subordination Agreement, were submitted to the DMA Ferro-Alloys Division, Washington, D. C., last fall when the application was originally made, and must be on file under DMA Docket 2136.

Since you have information regarding Mr. Williams that might influence granting him another contract, we are enclosing four copies of our final report on this project and one copy of a proposed contract prepared on the short form. The copy of the contract is not accompanied by maps or Owner's Consent to Lien, Form MF-203. We believe that you should determine if it would be advisable for the Government to enter into the enclosed contract with Mr. Williams because you have information which is not available to us.

If this contract is satisfactory, kindly send us the Lease and Transfer Agreement which Mr. Anderson states was sent to Washington last fall. If the Lease is valid, we will be in a position to complete the contract and send it to the applicant for signature.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

W. H. King

W. H. King

Enclosures
JFS:ld
cc: Docket, chron.
Koschmann
Wilson
Shaw

Copy retained 400

Mr. W. H. King
Executive Officer, Region IV
22d New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA 2136 - Tungsten
Baltimore Comax Mines
Amer-Tungsten Group of Claims
Juab County, Utah

Dear Mr. King:

This is to acknowledge receipt of your letter of June 24, 1952, informing us that the subject property has been examined and that a contract will be prepared by your office.

Since the application requested assistance for a project in the amount of $44,233.00, it was assumed that a contract, if warranted, would be considered and prepared in this office. Thus, no data regarding the applicant was passed on to your office.

Recently we had access to confidential information that was quite disturbing regarding the personal character of Mr. Williams in his business dealings and promotions. Before granting him another contract, our intentions were to give serious consideration to his reported character and competence. This is for your information.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

Approved:

J. H. Hedges

Member, Bureau of Mines

D. M. Lemmon

Member, Geological Survey

GCSelfridge:lm
7/2/52

cc: Admn. Reading File
Docket
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
Operating Committee
G. C. Selfridge

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

June 23, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2156, Baltimore Camas Mines, Inc., Apex-Tungsten Mine, Juab County, Utah

Enclosed are 8 copies of a geologic report by J. F. Powers and R. M. Smith of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be approved.

No report will be prepared by the U. S. Bureau of Mines.

The brochure is enclosed.

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

Enclosures (9)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

Reviewed by
DMEA OPERATING COMMITTEE
7-25-52
(date)

Room 208, 222 So. West Temple
Salt Lake City 1, Utah
18 June 1952

Memorandum

To: A. H. Koschmann, Field Team, Region IV

From: Ralph J. Roberts

Subject: DMA Docket 2136, Baltimore Comas Mines, Inc., Apex-Tungsten Mine, Juab County, Utah.

Enclosed are eight copies of a geologic report on the Apex-Tungsten Mine, Juab County, Utah.

The geologic report was prepared in response to a request from the Field Team, Region IV, for an examination to determine the possibility of finding tungsten ore of commercial grade in the Apex-Tungsten mine, Juab County, Utah.

The mine area is underlain by sedimentary rocks of Cambrian age, which have been intruded by granite about 3 miles to the north of the mine. The rocks are cut by two sets of faults; quartz veins that contain scheelite and beryl occupy the most prominent set, which strikes north. It is proposed to explore the most promising scheelite-bearing vein by drifting and sinking an inclined winze.

The suggested exploration program has been set up in three stages, each contingent on the success of the previous stage. It is recommended that the government enter into a contract with the applicant to do the proposed work amounting to $26,500 herein outlined. On a participating basis under the Defense Production Act for Tungsten of 75 percent - 25 percent respectively, the government's share will be $19,875.

I concur with the recommendation of the examining geologists that the proposed work be done. No engineering report by the U. S. Bureau of Mines will be prepared on this Docket.

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA Docket 2136, Baltimore Gamma Mining Inc.,

Apex-Tungsten Mine, Juab Co., Utah

J. F. Powers and R. M. Smith, Geologists
U. S. Geological Survey

June 18, 1952

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ILLUSTRATIONS

Figure 1. Index map of Western Utah.

Figure 2. Geologic map of the Apex Tungsten Deposit, Juab County, Utah.

Figure 3. Projected section along the plane of the vein, Apex Tungsten Deposit, Juab County, Utah

DMA Docket 2136, Baltimore Camas Mining Inc.,

Apex-Tungsten Mine, Juab County, Utah

INTRODUCTION

The Baltimore Camas Mining Inc., DMA Docket 2136, has applied to the Defense Minerals Exploration Administration for a loan to be used for the exploration of tungsten and beryl at the Apex-Tungsten mine in the Deep Creek Range near Trout Creek, Juab County, Utah.

A field examination was requested by the Field Team, Region IV, to determine the feasibility of an exploration program on the Merry and Mineral claims of the Baltimore Camas Mining Co. The examination was made on April 21-23, 1952 by John F. Powers and Roscoe M. Smith of the U. S. Geological Survey.

Location and Accessibility

The Apex-Tungsten mine is located on the east side of the Deep Creek Range in Sec. 21, T. 12 S., R. 18 W., 6 miles northeast of Trout Creek, Juab County, Utah (fig. 1). The mine can be reached from Wendover, Nevada, by driving 25 miles south on U. S. Highway 50, then driving 55 miles southeast on a dirt road through Gold Hill, Utah to Callao, Utah. The mine is readily accessible from Callao by driving 12 miles south on an unimproved road, then driving 6 miles ~~east~~ west into the Deep Creek Range.

History and Production

The Apex-Tungsten property includes the following nine unpatented lode claims: Metal, Battle, Bear, Mineral, Merry, Sun, and three other

recent locations. They are part of the Johnson Peak mining district, Juab County, Utah.

For 15 years the property has been held by John and Michael Babick of Phoenix, Arizona. The owners acquired the property partly by location and partly by warranty deed in 1937. In 1943 the Babick brothers applied for and were granted an RFC loan for a mill, but due to circumstances beyond their control, they were not able to take advantage of the loan. The Baltimore-Camas Mining Company is operating under a contract purchase agreement with the Babick brothers.

There has been no production of tungsten from the Apex-Tungsten claims to date.

GEOLOGY

The area is underlain by sedimentary rocks of probable Cambrian age that have been intruded by a granite stock about 3 miles north of the mine [1].

---

[1] Butler, B. S., 1920, The ore Deposits of Utah: U. S. Geol. Survey Prof. Paper 111, p. 472.

The sedimentary rocks are part of a broad anticline that plunges northwest.

The tungsten deposits are in quartz veins and associated pegmatite dikes and sills. Small amounts of beryl accompany some of the pegmatites.

The oldest bed in the mine area is a dark phyllite several hundred feet thick, which is overlain unconformably by a unit that includes a lenticular bed of fine-grained quartzite 5 to 25 feet thick, gray recrystallized limestone about 200 feet thick, and an upper bed of phyllite several hundred feet thick. The rocks in the mine area are on the north limb of an anticline, and in general strike west and dip 15° to 20° N.

Beds of tremolite schist that contain small stringers of quartz as well as small pegmatite bodies are interbedded with the phyllite. Pods of tremolite schist also occur in the limestone.

In the mapped area, the rocks are cut by many faults of small displacement. The faults can be divided into two sets: faults of the most prominent set strike north and dip either east or west; faults of the other set trend from northeast to east. Many bedding faults have also been recognized. The faults that strike north contain quartz veins, which range from a few inches to several feet in thickness and may cut or parallel bedding. Small pegmatite bodies of lenticular and irregular shape that contain beryl and scheelite are distributed erratically along the strike and dip of the quartz veins.

ORE DEPOSITS

The tungsten ore bodies in the Apex Tungsten mine are in quartz veins and associated pegmatite bodies. The ore bodies thus far discovered range from a few inches to 4 feet in width and average about 0.73 percent WO_3.

The tungsten mineral is coarse grained scheelite which is erratically disseminated throughout the quartz veins and to a lesser extent in the pegmatites. Locally, scheelite is in the wall rock immediately adjacent to the veins, but generally the wall rock is too low grade to be mined. In places the scheelite is accompanied by small amounts of beryl.

Two scheelite-bearing quartz veins have been explored in the lower adit (fig. 2). One is crescentic in plan and extends 30 feet northeast from the portal. The other vein has been explored for a strike length of 60

feet; a sample 22 inches wide cut at the face assayed 0.04 percent BeO and 1.12 percent WO_3. The vein crops out intermittently on the slope between the lower and upper adits. In the upper adit the vein splits into two pegmatite bodies that can be traced intermittently northeastward into an open cut. Further exploratory work on these veins is proposed in Stages 1 and 2 of the applicant's program.

Stripping on the hill-slope 600 feet west of the lower adit disclosed a thin lens-like, beryl-bearing body of pegmatite in phyllite. The pegmatite is exposed for a strike length of 4 feet, is 6 inches wide, and extends down dip for 150 feet. The beryl content is estimated to be about 10 percent. Only about 40 tons of pegmatite containing beryl can be inferred, therefore the showing does not constitute a minable ore body.

Some scheelite-bearing quartz veins in tremolite schist are exposed about 300 feet east of the portal of the lower adit. The veins are small, but one assayed 0.85 percent WO_3 over a width of 14 inches. Further work on these showings is contemplated in exploration work of Stage 3.

ORE RESERVES

Although there are many small scheelite-bearing quartz veins and pegmatite bodies in the mine area, the principal reserve is in the vein exposed in the upper and lower adits. The vein is lenticular and pinches along the strike and down dip, but averages about 1.5 feet wide. The average grade, determined by assay of samples collected during this examination, is 0.73 percent WO_3. Because the scheelite is erratically distributed throughout the quartz and because the vein is lenticular, probably not more

than 50 percent of the vein will prove to be minable. The inferred extent of the reserves above the lower adit is shown in figure 3 and is estimated to be about 2000 tons averaging .73 percent WO_3 in a block 420 feet by 125 feet and with an average thickness of 1.5 feet.

In addition, tungsten ore may extend below the lower adit level; no estimate of the grade and tonnage will be made, but it is reasonable to infer that a comparable tonnage of ore containing 0.73 percent WO_3 may be found there.

Beryl is in shoots too small to yield significant tonnages, or in quantities too low grade to mine. The ore shoot uncovered by stripping west of the lower adit is 150 feet long, 4 feet wide, and 6 inches thick. A visual estimate indicates that the ore would average about 10 percent beryl or 1.4 percent BeO.

PROPOSED EXPLORATION

The applicant has proposed the following program to explore the Apex-Tungsten mine:

Stage 1. Extend the lower drift 300 feet along the strike of the vein.

Stage 2. Sink an inclined winze 100 feet in the highest grade of ore found in the lower drift and drift 300 feet on the vein in a northerly direction at the bottom of the winze.

Stage 3. Drift 50 feet in a northwesterly direction from a point 300 feet to the east of and 50 feet lower in elevation than the lower adit.

In addition to stages 1, 2, and 3 the applicant proposed two 150-foot diamond drill holes to explore the downward continuation of the main vein,

as well as stripping on the slope 600 feet west of the lower adit, to explore the beryl ore shoot.

Stage 1, the drift 300 feet northward on the quartz vein appears to have merit as this work will permit determining the grade and size of scheelite-bearing shoots in the vein. If Stage 1 results in the discovery of minable bodies of ore, then stage 2 should be planned. In stage 2, promising ore shoots found in stage 1 can be explored by a winze to be sunk from the lower adit. The site of the winze and location of drifts from the winze is to be determined as the work progresses. Contingent on the success of stage 2, stage 3 is recommended to explore the continuation of this ore shoot by a 50-foot drift on the showings 300 feet southeast of the lower portal.

The applicant's proposal to explore the beryl showings 600 feet west of the lower portal by stripping cannot be considered exploratory, because this shoot has been exposed by enough trenches to determine its size and grade. This part of the applicant's program should not be considered.

The applicant no longer wishes to diamond drill the Apex-Tungsten property.

Costs of the Proposed Exploration

The applicant believes the work can be done on the following bases, which appear reasonable:

Stage 1 -

300 feet of drift at $30 per foot $9,000

The drift will be 5 x 7 feet in cross section and timbered where necessary for support. It is probable that little timber will be required.

Stage 2 -

100 feet of winze at $70 per foot	$7,000
300 feet of drift at $30.00 per foot	9,000

The winze will be 4 1/2 by 7 feet inside the timbers, adequate to serve as an exploratory opening.

Stage 3 -

50 feet of drift at $30 per foot	$1,500

The drift will be 5 by 7 feet in cross section. Timber will be required in establishing the portal.

Total cost	$26,500

The applicant has agreed to furnish all equipment, supplies, labor, and supervision to perform the work as described. Part of the equipment is on the property at present.

MF-200Z contract form should be used if a contract is prepared for exploration on the Baltimore Cassas Mines, Inc., property.

SUMMARY AND CONCLUSIONS

Scheelite occurs in quartz veins and associated lenticular and irregular pegmatite bodies that cut Cambrian schist and limestone. The principal quartz vein strikes northeast and dips southeast. It is exposed intermittently for about 300 feet along the strike and averages 1.5 feet wide. The ore is composed of scheelite and some beryl in a gangue of quartz and feldspar. The ore being mined averages 0.73 percent WO_3.

Inferred ore reserves are approximately 2,000 tons in the block between the lower adit and extending 200 feet north of the upper adit. The chance of additional reserves being found down the dip of the vein are good.

The program for exploration is to be divided into three stages: (1) Stage 1, drift 300 feet along the vein in the lower adit; if the ore body is of minable width and continues as inferred, then Stage (2) should be undertaken; this includes a 100-foot winze and drift or crosscut at the bottom; if Stage 2 is successful then Stage (3), a drift 50 feet long should be driven on shoddings southeast of the lower adit.

It is recommended that the government enter into contract with the applicant as outlined. The government's share on a 25-75 participating basis would be $6,750 for Stage 1, $12,000 for Stage 2, and $1,125 for Stage 3, or a total of $19,875.

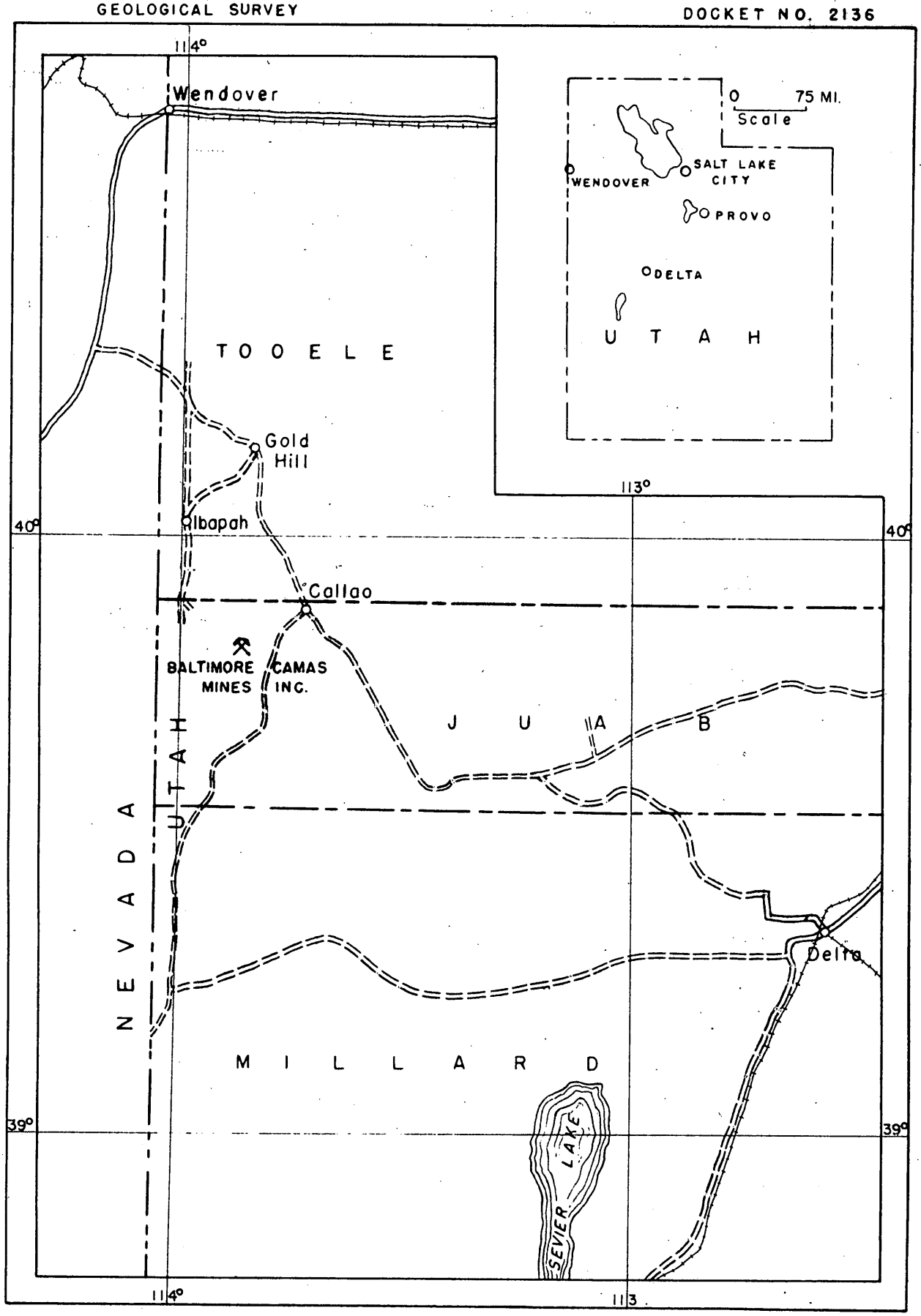
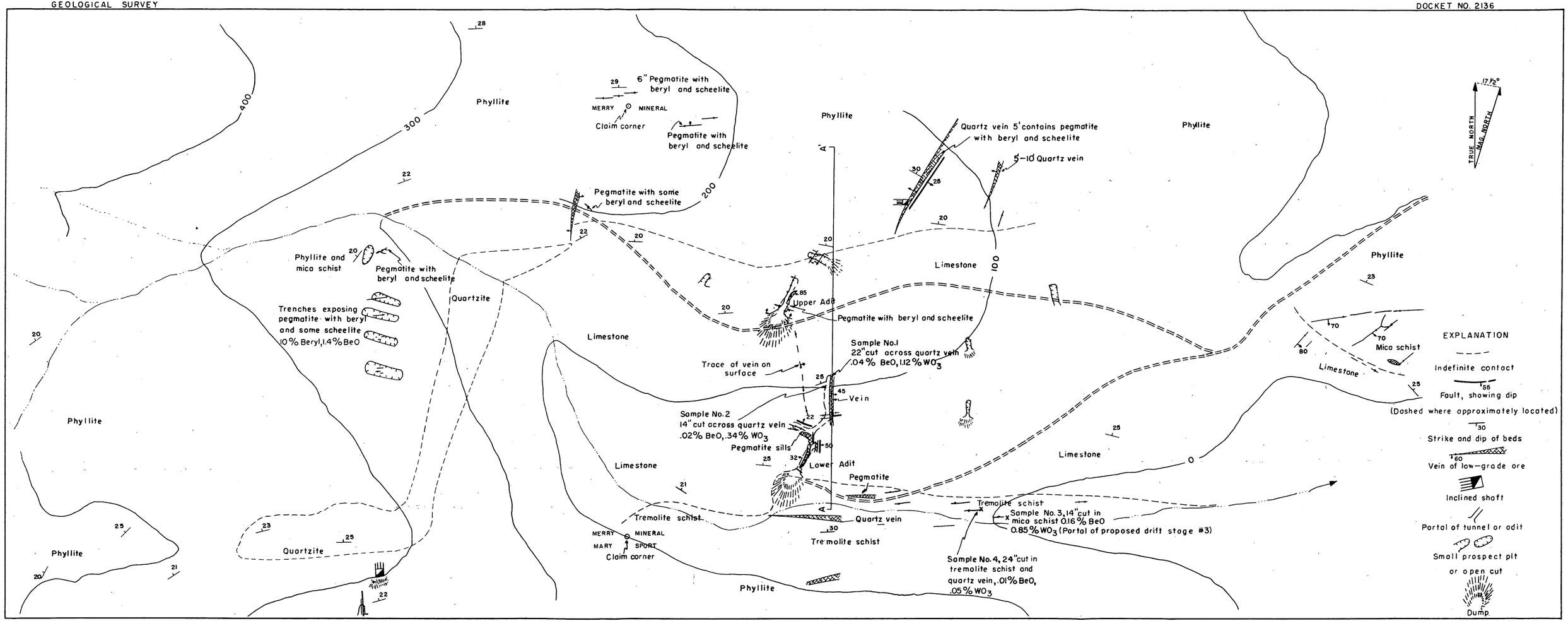


FIG. 1 INDEX MAP OF WESTERN UTAH

0 5 10 15 20 MILES
Scale



GEOLOGY BY R. M. SMITH AND JOHN POWERS

FIG. 2

GEOLOGIC MAP OF THE APEX TUNGSTEN DEPOSIT

JUAB COUNTY, UTAH

0 100 200' FEET
Scale
Contour interval 100 feet
(datum assumed)

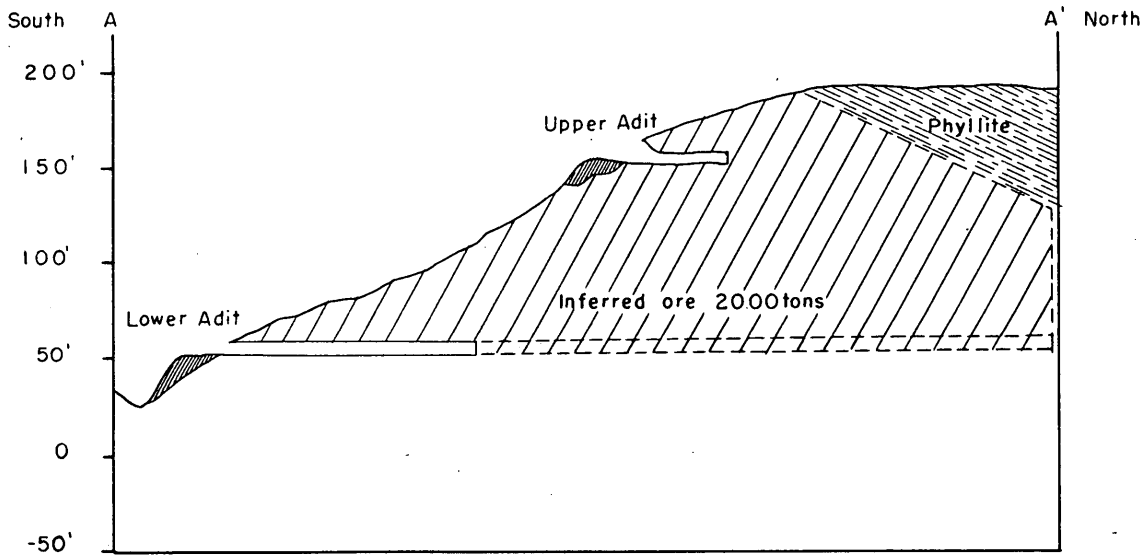


FIG. 3

PROJECTED SECTION ALONG THE PLANE OF THE VEIN

APEX TUNGSTEN DEPOSIT

JUAB COUNTY, UTAH

0 100 200 FEET
Scale

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

I-7A

224 New Customhouse
Denver 2, Colorado

January 8, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Field Appraisal, Docket DMA 2136, Ajax Tungsten Group, Juab County, Utah, Baltimore Camas Mines, Inc., Your memorandum December 29, 1951

Our field office and the field office of the Geological Survey informs us that they have been in communication with officers of the company in an attempt to schedule a time for the examination of the subject property when the mine area is free of snow. It will be necessary to make a complete study of the surface geology in order to prepare satisfactory recommendations for inclusion in the final report.

The examination will be made as soon as conditions permit.

W. H. KING

W. H. King, for
J. H. East, Jr.

WHK:ld

cc: DMA docket, chron.
Koschmann
Wilson

400

I 7-7A
File

DEC 29 1951

Mr. J. H. West, Jr.
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA 2136 - Tungsten
Ajax Tungsten Group
Juab County, Utah
Baltimore Cannon Mines, Inc.
Eastman Building, Boise, Idaho

Dear Mr. West:

A field appraisal of the above noted property was requested of your office by air mail letter dated November 2, 1951, the said letter enumerating eight principal points of interest.

Please advise us as to the progress of your investigation at this time.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

DLBrewer:lm
12/28/51

cc: Admn. Reading File
Mails and Files Br.
C. O. Mittendorf
R. W. Geehan, USBM
H. M. Lemmon, USGS
Field Team Reg. IV
Docket
G. L. Brewer
D. C. Selfridge

400's file

NOV 2 1951

Air Mail

Baltimore Lead Mines, Inc.
601 Hartman Building
Boise, Idaho

In reply please refer
to DMA-2136 - Tungsten

Gentlemen:

We are referring your application for an exploration project on the Black-Tungsten group to Mr. C. E. [illegible], Jr., Executive Officer, Field Team, Region IV, Denver Customhouse Building, Denver, Colorado, for a field examination.

Please contact Mr. [illegible] and offer your cooperation.

Very truly yours,

[illegible] Director
Supply Division

TJBallard:ec
Oct 24, 1951

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

400's file

George B. Holderer

October 17, 1951

T. P. Thayer

DMA-2136 Tungsten (& Beryl) Apex claims, Juab County, Utah
Baltimore Camas Mines, Inc., Boise, Idaho.

Information in our files on the Apex claims indicates lenticular quartz veins containing scheelite, cerargyrite and beryl, prospected at intervals from 1934-1942. In 1938-1939 concentrates containing 16 units of WO_3 were shipped.

The report by Anderson and Bida appears to be a workmanlike job, and clearly warns that distribution of the scheelite is irregular. The Geological Survey file report indicates that ore could be sorted to 1-1.5% WO_3.

The proposal to spend $39,000 on deposits that are estimated to contain about 1000 recoverable units of WO_3 seems rather ambitious, but it is on a stage basis. It is recommended that the application be referred to the field for appraisal with respect to the following main points:

1. Indicated continuity and grade of veins, in both scheelite and beryl.
2. Competence of the operators.
3. Water supply for a mill.
4. Size of beryl crystals and possibility of recovering it by hand cobbing.

TPThayer:gt

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

224 New Customhouse
Denver 2, Colorado

October 24, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Baltimore Camas Mines, Inc., Docket No. DMA 2136

We wrote Mr. G. P. Williams, President of the Baltimore Camas Mines, Inc., on August 15, 1952 requesting additional information regarding ownership of property. We wrote Mr. Williams again on September 17, 1952 and stated that we would close the application if we did not hear from him within thirty (30) days. Three copies of this letter were sent to the Secretary of the Operating Committee.

Since we have not heard from Mr. Williams we are placing his application in the inactive files.

W. H. King
W. H. King

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1952

224 New Customhouse
Denver 2, Colorado

October 24, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Baltimore Camas Mines, Inc., Docket No. DMA 2136

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W. H. King

W. H. King

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

224 New Customhouse
Denver 2, Colorado

September 17, 1952

Mr. G. P. Williams, President
Baltimore Camas Mines, Inc.
601 Eastman Building
Boise, Idaho

Dear Mr. Williams:

We wrote you on August 15, 1952 requesting additional information regarding the ownership of the property involved in your application for exploration assistance, Docket No. DMA 2136.

We also requested that certain documents be completed and sent to this office.

Will you please inform this office within the next 30 days as to what you plan regarding your request for exploration assistance. Otherwise, it will be assumed that you are no longer interested and the file will be closed.

Very truly yours,

W. H. King

W. H. King
Executive Officer
Field Team, Region IV

JFS:es

cc: Docket
Wilson
Chron.
Koschmann (2)
Secretary to the Operating Committee (3)

400

FILE COPY
SURNAME:
Sa
Selfridge

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

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

AUG 4 1952

Re: Docket No. DMA 2136 - Tungsten
Baltimore-Gamas Mines, Inc.
Apex-Tungsten Mine
Juab County, Utah

Dear Mr. King:

This is to acknowledge receipt of your letter of July 16, 1952, with which you forwarded copies of the field examination report and a proposed exploration project contract.

Previously we informed you that we had some doubt concerning the integrity of Mr. Williams. After due consideration, we are willing that you proceed with the proposed contract, regardless of our confidential information, since the contract is to be written on the short form and payments will be made based on actual footage of advance and nothing more. Probably in this particular case the Operator should be held to the terms of the contract, thereby avoiding the writing of amendments.

Enclosed is one copy of Assignment of Leases, six copies of the Landlord's Subordination Agreement which relates to the subject property, and one copy of an Escrow Agreement. You will note that the assignment covers three separate properties and that the Landlord's Subordination Agreement carries an October 5, 1951, date for the exploration project contract. We have not reviewed any of the three documents from a legal standpoint. They were not sent you previously because they had been filed away in the applicant's docket No. DMA 2138.

In looking over the field report, we can see no connection between Stage III and Stages I and II. We further note that under Stage I drifting on the adit level is quoted at $30 a foot and that under Stage II drifting is quoted at the same figure although the exploration rock must be hoisted. It would seem that the work in the adit should be quoted at a figure somewhat less than that for the work down in the winze.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

Enclosures

Approved:

J. H. Hedges

Member, Bureau of Mines

J. M. Lemmon

Member, Geological Survey

cc: D. M. Lemmon, USGS
R. W. Geehan, USBM

cc: Admn. Reading File
Field Team, Reg. IV
Operating Committee
G. C. Selfridge

cc: Docket

GCSelfridge:ls
7/30/52

CC 8/4/52

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

224 New Customhouse
Denver 2, Colorado

July 16, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket DMA 2136, (Tungsten), Baltimore Camas Mines, Juab County, Utah

This is in reply to your letter dated July 7, 1952, in which you state you had access to confidential information that was quite disturbing regarding the personal character of Mr. Williams.

We wrote Mr. Williams requesting signed copies of Owner's Consent to Lien, Form MF-203, and a copy of his lease. We have received six signed copies of Form MF-203. In a letter dated July 1, 1952, Mr. D. E. Anderson stated that a copy of the Lease and Transfer Agreement, as well as six signed copies of Landlord's Subordination Agreement, were submitted to the DMA Ferro-Alloys Division, Washington, D. C., last fall when the application was originally made, and must be on file under DMA Docket 2136.

Since you have information regarding Mr. Williams that might influence granting him another contract, we are enclosing four copies of our final report on this project and one copy of a proposed contract prepared on the short form. The copy of the contract is not accompanied by maps or Owner's Consent to Lien, Form MF-203. We believe that you should determine if it would be advisable for the Government to enter into the enclosed contract with Mr. Williams because you have information which is not available to us.

If this contract is satisfactory, kindly send us the Lease and Transfer Agreement which Mr. Anderson states was sent to Washington last fall. If the Lease is valid, we will be in a position to complete the contract and send it to the applicant for signature.

W. H. King

W. H. King

Enclosures

BL

Copy retained 400

FILE COPY
SURNAME:

Selfridge

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

JUL 7 - 1952

Mr. W. H. King
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA 2136 - Tungsten
Baltimore Camas Mines
Apex-Tungsten Group of Claims
Juab County, Utah

Dear Mr. King:

This is to acknowledge receipt of your letter of June 24, 1952, informing us that the subject property has been examined and that a contract will be prepared by your office.

Since the application requested assistance for a project in the amount of $44,238.00, it was assumed that a contract, if warranted, would be considered and prepared in this office. Thus, no data regarding the applicant was passed on to your office.

Recently we had access to confidential information that was quite disturbing regarding the personal character of Mr. Williams in his business dealings and promotions. Before granting him another contract, our intentions were to give serious consideration to his reported character and competence. This is for your information.

Sincerely yours,

(signed) FRANK E. JOHNSON (HB) 7/7/52

Chairman, Operating Committee
Defense Minerals Exploration
Administration

GCSelfridge'lm
7/2/52

Approved:

J. H. Hedges (HB)
Member, Bureau of Mines

D. M. Lemmon (HB)
Member, Geological Survey

cc: Admn. Reading File
Docket
R. W. Seehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
Operating Committee
G. C. Selfridge

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

224 New Customhouse
Denver 2, Colorado

June 24, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2136, (Tungsten) Baltimore Camas Mines, Inc., Juab County, Utah

Exploration assistance in the amount of $26,500 has been approved and the contract will be prepared by this office.

Four copies of the report will be forwarded you when the contract is signed.

The original and one copy of Form 3b is attached.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enc.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 30 1951

Copy of memo. to Iron & Ferro Alloys Div. - 6/30/52 - BL

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2136

Name of Applicant Baltimore Camas Mines, Inc.

Change:	From		To	
	III 1	☐	III 1	☒ 6-24-52
	III 2	☐	III 2	☐
	III 3	☐	III 3	☐
	III 4	☒	III 4	☐
	III 5	☐	III 5	☐

Add:

II 7 $ 44,238

II 8 $ 26,500

II 8a % 75

Remarks:

Initials of person preparing sheet H.M.C.

Date sheet prepared 6-24-52

17367

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 2136

Name of Applicant Baltimore Camas Mines, Inc.

Change:	From		To	
	III 1	☐	III 1	☒ 6-24-52
	III 2	☐	III 2	☐
	III 3	☐	III 3	☐
	III 4	☒	III 4	☐
	III 5	☐	III 5	☐

Add:

II 7 $ 44,238

II 8 $ 26,500

II 8a % 75

Remarks:

Initials of person preparing sheet H.M.C.

Date sheet prepared 6-24-52

17367

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

224 New Customhouse
Denver 2, Colorado

June 24, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration
Attention: Code 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2136, (Tungsten) Baltimore Camas Mines, Inc., Juab County, Utah

Exploration assistance in the amount of $26,500 has been approved and the contract will be prepared by this office.

Four copies of the report will be forwarded you when the contract is signed.

The original and one copy of Form 3b is attached.

W. H. King
W. H. King

A. H. Koechmann
A. H. Koechmann

Enc.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 30 1951

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

June 23, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2136, Baltimore Camas Mines, Inc., Apex-Tungsten Mine, Juab County, Utah

Enclosed are 8 copies of a geologic report by J. F. Powers and R. M. Smith of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be approved.

No report will be prepared by the U. S. Bureau of Mines.

The brochure is enclosed.

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

Enclosures (9)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

Reviewed by
DMEA OPERATING COMMITTEE
7-25-52
(date)

Room 206, 222 So. West Temple
Salt Lake City 1, Utah
18 June 1952

Memorandum

To: A. H. Koschmann, Field Team, Region IV

From: Ralph J. Roberts

Subject: DMA Docket 2136, Baltimore Comax Mines, Inc., Apex-Tungsten Mine, Juab County, Utah.

Enclosed are eight copies of a geologic report on the Apex-Tungsten Mine, Juab County, Utah.

The geologic report was prepared in response to a request from the Field Team, Region IV, for an examination to determine the possibility of finding tungsten ore of commercial grade in the Apex-Tungsten mine, Juab County, Utah.

The mine area is underlain by sedimentary rocks of Cambrian age, which have been intruded by granite about 3 miles to the north of the mine. The rocks are cut by two sets of faults; quartz veins that contain scheelite and beryl occupy the most prominent set, which strikes north. It is proposed to explore the most promising scheelite-bearing vein by drifting and sinking an inclined winze.

The suggested exploration program has been set up in three stages, each contingent on the success of the previous stage. It is recommended that the government enter into a contract with the applicant to do the proposed work amounting to $26,500 herein outlined. On a participating basis under the Defense Production Act for Tungsten of 75 percent - 25 percent respectively, the government's share will be $19,875.

I concur with the recommendation of the examining geologists that the proposed work be done. No engineering report by the U. S. Bureau of Mines will be prepared on this Docket.

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA Docket 2136, Baltimore Camas Mining Inc.,

Apex-Tungsten Mine, Juab Co., Utah

J. F. Powers and R. M. Smith, Geologists
U. S. Geological Survey

June 18, 1952

CONTENTS

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Geology	2
Ore Deposits	3
Ore Reserves	4
Proposed Exploration	5
Cost of the Proposed Exploration	6
Summary and Conclusions	7

ILLUSTRATIONS

Figure 1. Index map of Western Utah.

Figure 2. Geologic map of the Apex Tungsten Deposit, Juab County, Utah.

Figure 3. Projected section along the plane of the vein, Apex Tungsten Deposit, Juab County, Utah

DMA Docket 2136, Baltimore Camas Mining Inc.,

Apex-Tungsten Mine, Juab County, Utah

INTRODUCTION

The Baltimore Camas Mining Inc., DMA Docket 2136, has applied to the Defense Minerals Exploration Administration for a loan to be used for the exploration of tungsten and beryl at the Apex-Tungsten mine in the Deep Creek Range near Trout Creek, Juab County, Utah.

A field examination was requested by the Field Team, Region IV, to determine the feasibility of an exploration program on the Merry and Mineral claims of the Baltimore Camas Mining Co. The examination was made on April 21-23, 1952 by John F. Powers and Roscoe M. Smith of the U. S. Geological Survey.

Location and Accessibility

The Apex-Tungsten mine is located on the east side of the Deep Creek Range in Sec. 21, T. 12 S., R. 18 W., 6 miles northeast of Trout Creek, Juab County, Utah (fig. 1). The mine can be reached from Wendover, Nevada, by driving 25 miles south on U. S. Highway 50, then driving 55 miles southeast on a dirt road through Gold Hill, Utah to Callao, Utah. The mine is readily accessible from Callao by driving 12 miles south on an unimproved road, then driving 6 miles ~~east~~ west into the Deep Creek Range.

History and Production

The Apex-Tungsten property includes the following nine unpatented lode claims: Metal, Battle, Bear, Mineral, Merry, Sun, and three other

recent locations. They are part of the Johnson Peak mining district, Juab County, Utah.

For 15 years the property has been held by John and Michael Babick of Phoenix, Arizona. The owners acquired the property partly by location and partly by warranty deed in 1937. In 1943 the Babick brothers applied for and were granted an RFC loan for a mill, but due to circumstances beyond their control, they were not able to take advantage of the loan. The Baltimore-Camas Mining Company is operating under a contract purchase agreement with the Babick brothers.

There has been no production of tungsten from the Apex-Tungsten claims to date.

GEOLOGY

The area is underlain by sedimentary rocks of probable Cambrian age that have been intruded by a granite stock about 3 miles north of the mine 1/.

1/ Butler, B. S., 1920, The ore Deposits of Utah: U. S. Geol. Survey Prof. Paper 111, p. 472.

The sedimentary rocks are part of a broad anticline that plunges northwest.

The tungsten deposits are in quartz veins and associated pegmatite dikes and sills. Small amounts of beryl accompany some of the pegmatites.

The oldest bed in the mine area is a dark phyllite several hundred feet thick, which is overlain unconformably by a unit that includes a lenticular bed of fine-grained quartzite 5 to 25 feet thick, gray recrystallized limestone about 200 feet thick, and an upper bed of phyllite several hundred feet thick. The rocks in the mine area are on the north limb of an anticline, and in general strike west and dip 15° to 20° N.

Beds of tremolite schist that contain small stringers of quartz as well as small pegmatite bodies are interbedded with the phyllite. Pods of tremolite schist also occur in the limestone.

In the mapped area, the rocks are cut by many faults of small displacement. The faults can be divided into two sets: faults of the most prominent set strike north and dip either east or west; faults of the other set trend from northeast to east. Many bedding faults have also been recognized. The faults that strike north contain quartz veins, which range from a few inches to several feet in thickness and may cut or parallel bedding. Small petmatite bodies of lenticular and irregular shape that contain beryl and scheelite are distributed erratically along the strike and dip of the quartz veins.

ORE DEPOSITS

The tungsten ore bodies in the Apex Tungsten mine are in quartz veins and associated pegmatite bodies. The ore bodies thus far discovered range from a few inches to 4 feet in width and average about 0.73 percent WO_3.

The tungsten mineral is coarse grained scheelite which is erratically disseminated throughout the quartz veins and to a lesser extent in the pegmatites. Locally, scheelite is in the wall rock immediately adjacent to the veins, but generally the wall rock is too low grade to be mined. In places the scheelite is accompanied by small amounts of beryl.

Two scheelite-bearing quartz veins have been explored in the lower adit (fig. 2). One is crescentic in plan and extends 30 feet northeast from the portal. The other vein has been explored for a strike length of 60

feet; a sample 22 inches wide cut at the face assayed 0.04 percent BeO and 1.12 percent WO_3. The vein crops out intermittently on the slope between the lower and upper adits. In the upper adit the vein splits into two pegmatite bodies that can be traced intermittently northeastward into an open cut. Further exploratory work on these veins is proposed in Stages 1 and 2 of the applicant's program.

Stripping on the hill-slope 600 feet west of the lower adit disclosed a thin lens-like, beryl-bearing body of pegmatite in phyllite. The pegmatite is exposed for a strike length of 4 feet, is 6 inches wide, and extends down dip for 150 feet. The beryl content is estimated to be about 10 percent. Only about 40 tons of pegmatite containing beryl can be inferred, therefore the showing does not constitute a minable ore body.

Some scheelite-bearing quartz veins in tremolite schist are exposed about 300 feet east of the portal of the lower adit. The veins are small, but one assayed 0.85 percent WO_3 over a width of 14 inches. Further work on these showings is contemplated in exploration work of Stage 3.

ORE RESERVES

Although there are many small scheelite-bearing quartz veins and pegmatite bodies in the mine area, the principal reserve is in the vein exposed in the upper and lower adits. The vein is lenticular and pinches along the strike and down dip, but averages about 1.5 feet wide. The average grade, determined by assay of samples collected during this examination, is 0.73 percent WO_3. Because the scheelite is erratically distributed throughout the quartz and because the vein is lenticular, probably not more

than 50 percent of the vein will prove to be minable. The inferred extent of the reserves above the lower adit is shown in figure 3 and is estimated to be about 2000 tons averaging .73 percent WO_3 in a block 420 feet by 125 feet and with an average thickness of 1.5 feet.

In addition, tungsten ore may extend below the lower adit level; no estimate of the grade and tonnage will be made, but it is reasonable to infer that a comparable tonnage of ore containing 0.73 percent WO_3 may be found there.

Beryl is in shoots too small to yield significant tonnages, or in quantities too low grade to mine. The ore shoot uncovered by stripping west of the lower adit is 150 feet long, 4 feet wide, and 6 inches thick. A visual estimate indicates that the ore would average about 10 percent beryl or 1.4 percent BeO.

PROPOSED EXPLORATION

The applicant has proposed the following program to explore the Apex-Tungsten mine:

Stage 1. Extend the lower drift 300 feet along the strike of the vein.

Stage 2. Sink an inclined winze 100 feet in the highest grade of ore found in the lower drift and drift 300 feet on the vein in a northerly direction at the bottom of the winze.

Stage 3. Drift 50 feet in a northwesterly direction from a point 300 feet to the east of and 50 feet lower in elevation than the lower adit.

In addition to stages 1, 2, and 3 the applicant proposed two 150-foot diamond drill holes to explore the downward continuation of the main vein,

as well as stripping on the slope 600 feet west of the lower adit, to explore the beryl ore shoot.

Stage 1, the drift 300 feet northward on the quartz vein appears to have merit as this work will permit determining the grade and size of scheelite-bearing shoots in the vein. If Stage 1 results in the discovery of minable bodies of ore, then stage 2 should be planned. In stage 2, promising ore shoots found in stage 1 can be explored by a winze to be sunk from the lower adit. The site of the winze and location of drifts from the winze is to be determined as the work progresses. Contingent on the success of stage 2, stage 3 is recommended to explore the continuation of this ore shoot by a 50-foot drift on the showings 300 feet southeast of the lower portal.

The applicant's proposal to explore the beryl showings 600 feet west of the lower portal by stripping cannot be considered exploratory, because this shoot has been exposed by enough trenches to determine its size and grade. This part of the applicant's program should not be considered.

The applicant no longer wishes to diamond drill the Apex-Tungsten property.

Costs of the Proposed Exploration

The applicant believes the work can be done on the following bases, which appear reasonable:

Stage 1 -

300 feet of drift at $30 per foot	$9,000

The drift will be 5 x 7 feet in cross section and timbered where necessary for support. It is probable that little timber will be required.

Stage 2 -

100 feet of winze at $70 per foot	$7,000
300 feet of drift at $30.00 per foot	9,000

The winze will be 4 1/2 by 7 feet inside the timbers, adequate to serve as an exploratory opening.

Stage 3 -

50 feet of drift at $30 per foot	$1,500

The drift will be 5 by 7 feet in cross section. Timber will be required in establishing the portal.

Total cost	$26,500

The applicant has agreed to furnish all equipment, supplies, labor, and supervision to perform the work as described. Part of the equipment is on the property at present.

MF-200Z contract form should be used if a contract is prepared for exploration on the Baltimore Camas Mines, Inc., property.

SUMMARY AND CONCLUSIONS

Scheelite occurs in quartz veins and associated lenticular and irregular pegmatite bodies that cut Cambrian schist and limestone. The principal quartz vein strikes northeast and dips southeast. It is exposed intermittently for about 300 feet along the strike and averages 1.5 feet wide. The ore is composed of scheelite and some beryl in a gangue of quartz and feldspar. The ore being mined averages 0.73 percent WO_3.

Inferred ore reserves are approximately 2,000 tons in the block between the lower adit and extending 200 feet north of the upper adit. The chance of additional reserves being found down the dip of the vein are good.

The program for exploration is to be divided into three stages: (1) Stage 1, drift 300 feet along the vein in the lower adit; if the ore body is of minable width and continues as inferred, then Stage (2) should be undertaken; this includes a 100-foot winze and drift or crosscut at the bottom; if Stage 2 is successful then Stage (3), a drift 50 feet long should be driven on showings southeast of the lower adit.

It is recommended that the government enter into contract with the applicant as outlined. The government's share on a 25-75 participating basis would be $6,750 for Stage 1, $12,000 for Stage 2, and $1,125 for Stage 3, or a total of $19,875.

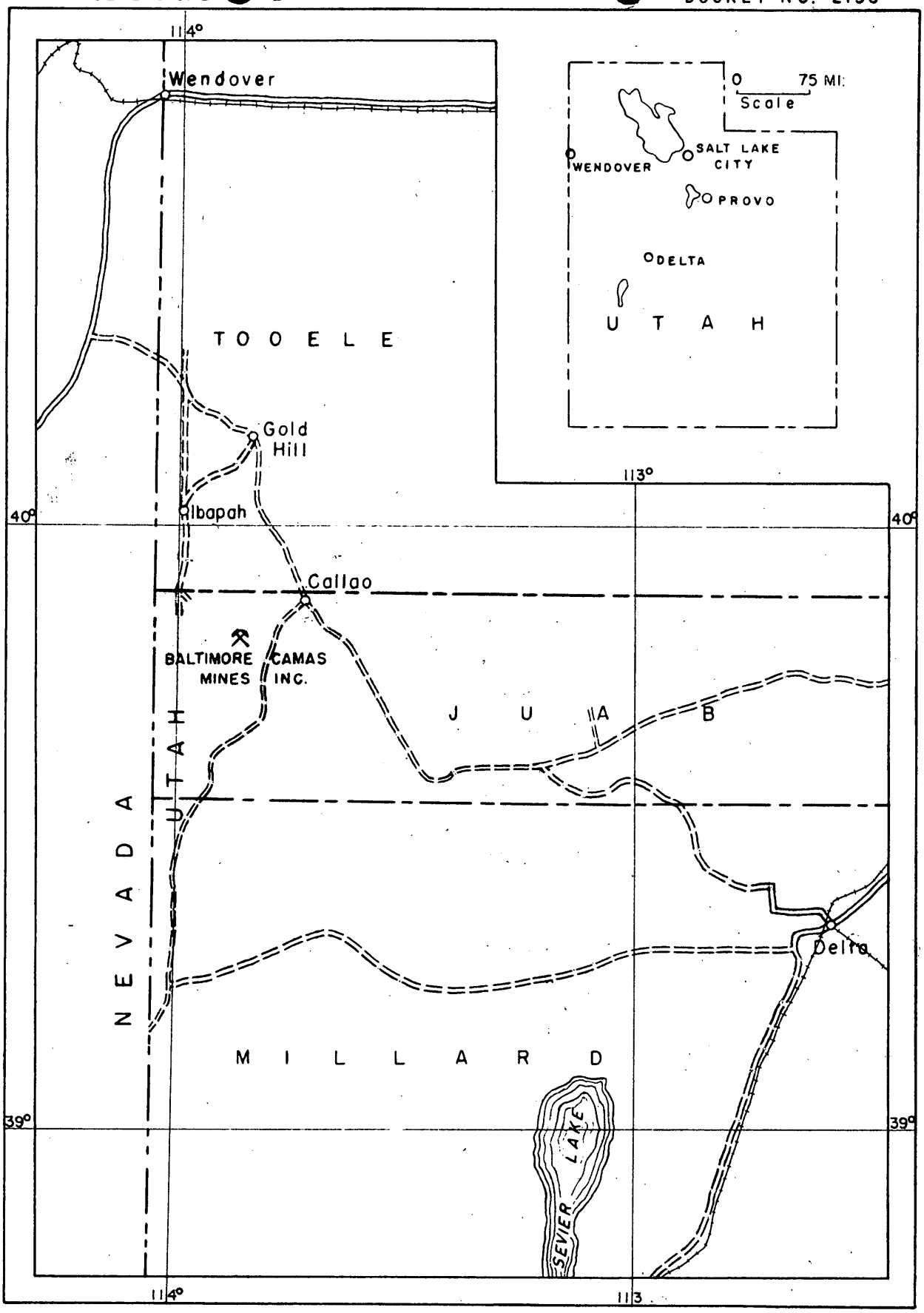
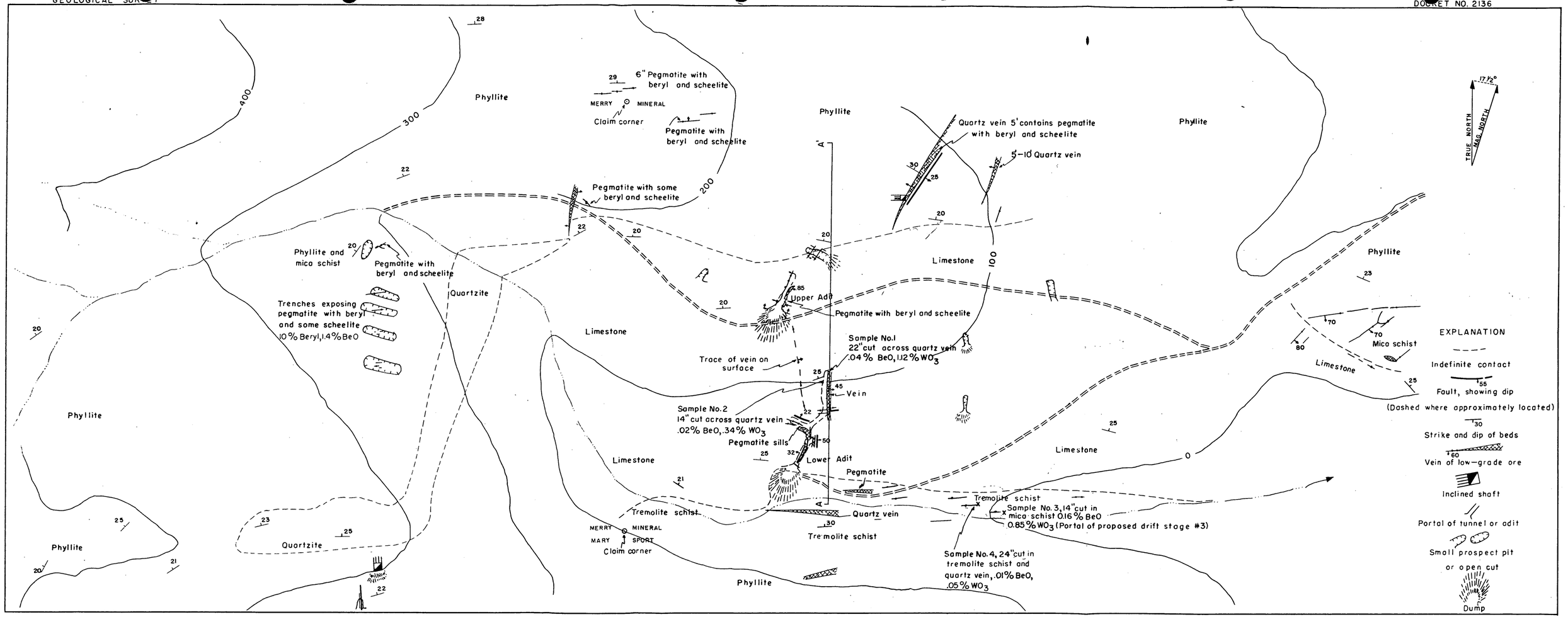


FIG. I INDEX MAP OF WESTERN UTAH

0 5 10 15 20 MILES
Scale



GEOLOGY BY R. M. SMITH AND JOHN POWERS

FIG. 2

GEOLOGIC MAP OF THE APEX TUNGSTEN DEPOSIT
JUAB COUNTY, UTAH

0 100 200 FEET
Scale
Contour interval 100 feet
(datum assumed)

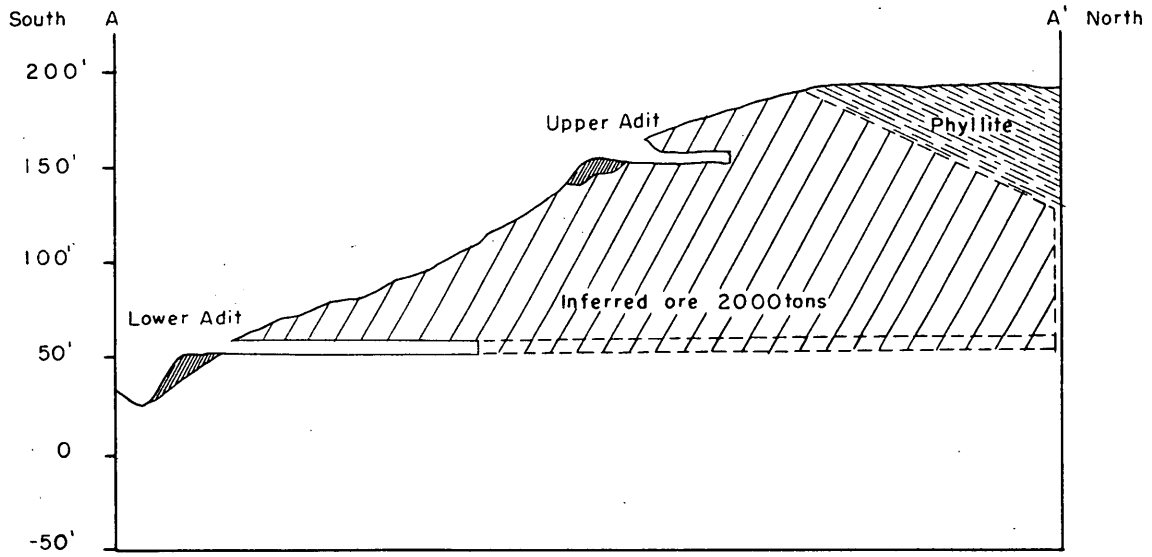


FIG. 3

PROJECTED SECTION ALONG THE PLANE OF THE VEIN

APEX TUNGSTEN DEPOSIT

JUAB COUNTY, UTAH

0 100 200 FEET
Scale

Excerpt from Monthly Report, Region IV, March 21 to April 20, 1952

DMA 2136 - Baltimore Camas Mines, Inc., Apex property (Tungsten-beryl), Juab County, Utah

The property was examined by a Survey engineer April 22 and 23, 1952.

Excerpt from "DMEA Dockets Pending in Region IV Office for the Period Ending February 29, 1952", page 2

DMA 2136 - Utah - Baltimore Camas Mine, Inc. Apex-Tungsten Beryl Claims (Beryl), Juab County. January 11, 1952.

An examination of the property will be arranged as soon as weather conditions permit. The operator will notify the Survey when the area is free of snow.

Excerpt from Monthly Report, Region IV, January 21, 1952 to February 20, 1952

DMA 2136 - Baltimore Camas Mines, Inc., Apex property (Tungsten-beryl), Juab County, Utah

The applicant has requested funds for diamond drilling and underground exploration. Examination delayed because of weather conditions. Operator on property will notify the Survey when area is free of snow.

Excerpt from Monthly Report, 12/21/51 - 1/20/52, Region IV, page 16

DMA 2136 - Baltimore Camas Mines, Inc., Apex property, (Tungsten-beryl), Juab County, Utah

Examination delayed because of weather conditions. Operaton on property will notify the Survey when area is free of snow.

Excerpt from page 18, Monthly Report, Reb. IV, Mining Div., dated 11/21/51 - 12/20/51.

DMA-2136 - Apex property, (Tungsten-beryl), Juab County, Utah

Examination pending.

2/6 - held till Spring on next weather

DMA-2138-T

COPY

January 18, 1952

Mr. C. P. Williams, President
Baltimore Camas Mines
601 Eastman Building
Boise, Idaho

Dear Mr. Williams:

This will confirm my phone conversation of this date in which I advised that the field team expects to make an examination of the Ajax Tungsten property in Juab County, Utah, just as soon as snow conditions will permit.

Reports on the Shafer Mine and Hilltop Mine in White Pine County, Nevada, we understand have been finished by the field team and those reports should be received here in Washington at an early date. Just as soon as Mr. Holderer has received the analysis we will contact you and then you can come on here for the purpose of discussing these properties and the question of financial aid you have requested in connection with the moving of a mill from Idaho to Nevada.

As I have advised you, arrangements are being considered for taking concentrates to a central digester. This will eliminate part of the expenditure you have considered heretofore.

Very truly yours,

/Signed/ HOWARD I. YOUNG

Howard I. Young
Deputy Administrator

HIY:owb
cc: Mr. Larson
Senator Dworshak
Congressman Baring
Mr. Douglas
Mr. Lyon
Mr. Holderer
DMPA Files
Admin. Files

OFFICE OF THE ADMINISTRATOR

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

224 New Customhouse
Denver 2, Colorado

January 8, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Field Appraisal, Docket DMA 2136, Ajax Tungsten Group, Juab County, Utah, Baltimore Camas Mines, Inc., Your memorandum December 29, 1951

Our field office and the field office of the Geological Survey informs us that they have been in communication with officers of the company in an attempt to schedule a time for the examination of the subject property when the mine area is free of snow. It will be necessary to make a complete study of the surface geology in order to prepare satisfactory recommendations for inclusion in the final report.

The examination will be made as soon as conditions permit.

W. H. King
W. H. King, for
J. H. East, Jr.

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
JAN 11 8 46 AM '52

FILE COPY 400
SURNAME:

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

Brewer
Selfridge

DEC 29 1951

Mr. J. H. East, Jr.
Executive Officer, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMA 2136 - Tungsten
Ajax Tungsten Group
Juab County, Utah
Baltimore Gamma Mines, Inc.
Eastman Building, Boise, Idaho

Dear Mr. East:

A field appraisal of the above noted property was requested of your office by air mail letter dated November 2, 1951, the said letter enumerating eight principal points of interest.

Please advise us as to the progress of your investigation at this time.

Sincerely yours,

C. O. Mittendorf (for) S.N. 12-29

Acting Administrator
Defense Minerals Exploration
Administration

QLBrewer:lm
12/28/51

cc: Admn. Reading File
Mails and Files Br.
C. O. Mittendorf
R. W. Geehan, USBM
D. M. Lemmon, USGS
Field Team Reg. IV
Docket
Q. L. Brewer
G. C. Selffidge

BU

DMA Docket file

FILE COPY
SURNAME:

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

Holbrook
Bradford
Hyman
Thayer

Air Mail

NOV 2 1951

Q, E, R

Mr. J. H. East, Jr.
224 New Customhouse Building
Denver 2, Colorado

Subject: [illegible]-2136 - Tungsten, Exploration project $44,238
Apex-Tungsten group of claims in
Juab County, Utah
Baltimore Camas Mines, Inc., 601
Eastman Building, Boise, Idaho.

Dear Mr. East:

We are referring the subject application to you for a field appraisal. Please investigate the following principal points:

1. Due to the lack of a suitable topographic map, we are unable to determine much about the applicant's proposal. However, the first two drill holes should be drilled from the surface to intersect the vein and not down dip as applicant's statement infers.

2. The proposed 300-foot drift along the main vein is allright, if surface indications justify it.

3. Sinking a winze 100 feet and drifting 300 feet at the bottom is rather awkward and expensive. Perhaps, drill holes from the surface would suffice.

4. Investigate the proposed bulldozing on the beryl orebody and the possibility of recovering the beryl by hand cobbing.

5. The continuity of the veins in both scheelite and beryl.

6. Water supply for a mill and any plans for milling the ore.

7. Competence of the operator.

8. Check applicant's cost figures.

Field Inspn noted 2/29/52 ✓

If the property merits exploration, please assist the applicant in compiling the necessary exhibits for the contract.

Very truly yours,

Signed
CC 12/2

A. F. Parsons, Acting Chairman
Coordinating Committee

Enclosure

Geological Survey

Bureau of Mines

P. S. The "Trout Creek Tungsten Mine" is file No. 80.7516.

TJBallard:ec
10/24/51

CC: DMA Docket File
Adm. Reading File
Coord. Comm.
Mr. Lemmon
Mr. Geehan
Mr. Holderer

FILE COPY
SURNAME:

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

Holderer
Bonham
Thayer
Wyoom

Air Mail

NOV 2 1951

Baltimore Camas Mines, Inc.
601 Eastman Building
Boise, Idaho

In reply please refer
to DMA-2136 - Tungsten

Gentlemen:

We are referring your application for an exploration project on the Apex-Tungsten group to Mr. J. R. East, Jr., Executive Officer, Field Team, Region IV, 234 New Customhouse Building, Denver 2, Colorado, for a field appraisal.

Please contact Mr. East and offer your cooperation.

Very truly yours,

Signed cc 11/2

A. B. Persons, Acting Director
Supply Division

TJBallard:ec
Oct 24, 1951

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

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : George B. Holderer DATE: October 17, 1951

FROM : T. P. Thayer Thayer

SUBJECT: DMA-2136 Tungsten (& Beryl) Apex claims, Juab County, Utah
Baltimore Camas Mines, Inc., Boise, Idaho.

Information in our files on the Apex claims indicates lenticular quartz veins containing scheelite, cerargyrite and beryl, prospected at intervals from 1934-1942. In 1938-1939 concentrates containing 16 units of WO_3 were shipped.

The report by Anderson and Bida appears to be a workmanlike job, and clearly warns that distribution of the scheelite is irregular. The Geological Survey file report indicates that ore could be sorted to 1-1.5% WO_3.

The proposal to spend $39,000 on deposits that are estimated to contain about 1000 recoverable units of WO_3 seems rather ambitious, but it is on a stage basis. It is recommended that the application be referred to the field for appraisal with respect to the following main points:

1. Indicated continuity and grade of veins, in both scheelite and beryl.
2. Competence of the operators.
3. Water supply for a mill.
4. Size of beryl crystals and possibility of recovering it by hand cobbing.

October 9, 1951

Mr. G. P. Williams, President
Baltimore Camas Mines, Inc.
601 Eastman Building
Boise, Idaho

Subject: Exploration
Re: DMA-2136

My dear Mr. Williams:

This will acknowledge receipt of your application dated October 5, 1951 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMA-2136 and referred to the Ferro-Alloys Branch.

Kindly refer to DMA- 2136 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams

Robert E. Adams, Chief
Reports and Records Unit

2463

MA-2136

Oct. 6, 1951

Dear Mr. Holderer:

Mr. New has kindly consented to deliver all the application forms and reports to your office. This material covers three projects designated as SHAFER, HILLTOP, and APEX-TUNGSTEN.

As you know, Mr. Selfridge went over the material with me the other day and designated certain corrections. These have been made and the material submitted as directed.

Thank you for your cooperation and best of luck to you.

Don Anderson

D. E. Anderson

Mr. Holderer's office — Room 3624

Phone Extension 2376
REpublic 1820

J. G. P. Williams
Baltimore Commercial Co.
Baird Building

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. dma 2136
Metal or Mineral
Date Received 10-9-51
Amount $
Participation (Government %)

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D. C.
OCT 9 2 50 PM

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

Name and address of applicant

Date Oct. 5, 1951

Exploration loan

If you have already filed MF-100, give date filed _____, type of assistance requested _____,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

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

CERTIFICATION

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

Baltimore Camas Mines, Inc.
(Name of company)

By D. E. Anderson
(Signature of authorized official)

Oct. 5, 1951
(Date)

for G. P. Williams, Pres.
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Baltimore Owens Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

1. (a) The property involved in this exploration project is the APEX-TUNGSTEN group of 9 unpatented lode mining claims located in the Johnson Park (unorganized) district of Juab County , Utah. Claims are named as follows: MERRY; MINERAL; SUN; METAL; BATTLE; BEAR; and APEX 1,2,3 . Claims are in Sec. 21, T12S, R10W, and are five miles from the Trout Creek ranch (west). The shipping and supply point is Ely, Nevada, 120 miles to the southwest.

(b)Copy of purchase contract to be submitted.

(c) The exploration program here laid out will be specifically conducted on the MERRY and MINERAL claims.

There are no loans or other encumberances against the property and purchase contract specifies that a Government Loan agreement may be entered into.

2. (a) Tungsten and Beryl.

(b) Complete engineering report and map submitted with this application. (Report and maps need not be returned.)

Baltimore Comm Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

3. (a) The proposed work will be as follows: Extend present lower level drift 300 feet northward along the main ore body, drill two 150 foot core drill holes to probe the downward extent of this same ore body, then (dependent on results of drilling) sink a 100 foot winze inclined along the strongest section of ore exposed in the drift level, then drive 300 feet of drift along the ore body from the bottom of this winze.

In addition, the following program will be carried to explore the flat-bedded, beryl bearing ore body exposed on the MERRY claim. Two weeks bulldozer stripping will be required to expose the extent of the deposit on the flat hillside on the south side of the gulch and expose the end of the same bed where it is presumed to enter the hillside on the north side of the same guldh. See map for locations. Then 500 feet of core drilling (4 holes) will be undertaken to outline the ore body on the north side of the gulch.

	Tungsten exploration	$39,038.00
✓	Beryl Exploration	5,200.00
	Project total	$44,238.00

(b) This project can be started within one week after approval and completed within ten months after that date.

4. Maps attached

5. There are no existing facilities, buildings, installations or fixtures.

6. Compressor house and work shop —labor 400.00
Material 1000.00

Total $1,400.00

Baltimore Canas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

7. (a) None

(b)

1200 feet of 16# rail Used	400.00	
700 feet of 2" and 3" air pipe (used)	350.00	
Air jackleg and hammer complete	950.00	
Tank truck	750.00	
Trailer house for crew housing	950.00	
Total		$3,400.00

(c) Baltimore Canas will provide an H. D. 15 tractor with dozer and driver for 12 days to strip beryl vein @ 100.00/day — Rental 1200.00

	Unit cost	Rental
Lynor and Jackhammer (Cleveland)	700.00	116.60
Sullivan macking machine	2400.00	400.00
Hendrie Hoist	600.00	100.00
1947 Ford, 1½ ton flatbed truck	900.00	150.00
440 cu. ft. compressor with D-13000 diesel power unit	9000.00	1500.00
3 mine cars	450.00	75.00
Hoses, shop equipment, etc.	500.00	83.40
Total rentals		$3525.00

Baltimore Comstock Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

8. Before entering a statement of labor cost it may be well to state that as much of the project as possible will be handled on a contract basis since experience in the area entailing a comparison of costs indicates that both from a standpoint of speed and efficiency the contract system is the most satisfactory and economical.

A maximum of 13.00/ft. is allowed for labor cost of all drifting.

Drifts will be 5 x 7 with but little timber required.

600 feet of drift at 15.00 per foot $9,000.00

Upper drift will be driven requiring 4 miners on a two shift daily basis @13.00/day

Lower drifts will require three miners (2 headings) and one hoistman on one shift also @ 13.00/day

Monthly cost of drifting on this basis and estimating an average advance of 95 feet per month will be:

	4 men	1300.00
	Add 10% comp. etc.	130.00
		1430.00

A maximum of 50.00/ft. is allowed for winze sinking labor cost. Winze calculated to complete in a little over two months.

Winze sinking will require 1 hoistman @13.00/day
2 timbermen @16.00/day
2 miners @16.00/day
1 trammer @13.00/day

25 days per month	6 men	2250.00
	Add 10% comp.etc.	225.00
	Monthly cost	2475.00

Sinking will be on a two shift basis

1—general Supt. @500.00/mo.
1—Foreman @15.00/day
1—Engineer @500.00/mo.
1—Project accountant @250.00/mo.
(Note: Supt., engineer, and accountant will serve three projects, hence only 1/3 of the total cost charged to this project)

Total supervisory, engineering, and accounting at 1/3 of above rates $8,063.80

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

9. Material and supplies, including explosives, steel, bits, fuel, hand tools, machinery upkeep and repair, and timber have been computed on a basis of 7.50 per foot for drifts.

The breakdown of this per foot figure is as follows:

Explosives	4.15
Bits	1.15
Steel	0.25
Fuel	1.10
Misc.	0.85
	7.50

600 feet of drifts at 7.50 per foot $4,500.00

Material and supplies for winze sinking computed on a basis of 30.00 per foot as follows:

* Timber	19.00
Explosives	6.00
Bits	1.50
Steel	0.40
Fuel	1.50
Misc.	1.60
	30.00

*Timber to be used will be 6 x 6, 2ª logging, 3 x 5 guides, and ladder stock.

100 foot winze at 30.00 per foot $3,000.00

800 feet of core drilling to be contracted with costs as follows: Drilling @ 6.00/ft., casing @2.50/ft., and $250.00 in and out. $6,250.00

10. (a) $10,279.50 which includes 25% of the tungsten exploration cost and 10% of the beryl exploration cost, and of which $3625.00 will be paid by equipment rental or depreciation.
(b) Yes

11. This property is now being put into operation by Baltimore Camas Mines with the immediate objective of mining an ore body already blocked out at the lower drift level. This exploration program is designed to explore the extensions of this same ore body and also to determine the significance of the beryl-tungsten ore bed exposed on the MERRY claim. Samples of this ore will be sent to the Bureau of Mines in Reno, Nevada to determine the most feasible method of separation and concentration. This beryl deposit is unusual in type and may assume considerable importance with added exploration .

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. Appl 2136
Metal or Mineral
Date Received 10-9-51
Amount $
Participation (Government %)

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
OCT 9 2 51

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

Name and address of applicant

Date Oct. 5, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested Exploration Loan,

DMA Docket Number (if available) _____

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

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

CERTIFICATION

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

Baltimore Camas Mines, Inc.
(Name of company)

By D. E. Anderson
(Signature of authorized official)

October 5, 1951
(Date)

for G. P. Williams, Pres.
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

1. (a) The property involved in this exploration project is the APEX-TUNGSTEN group of 9 unpatented lode mining claims located in the Johnson Peak (unorganized) district of Juab County , Utah. Claims are named as follows: MERRY; MINERAL; SUN; METAL; BATTLE; BEAR; and APEX 1,2,3 . Claims are in Sec. 21, T12S, R18W, and are five miles from the Trout Creek ranch (west). The shipping and supply point is Ely, Nevada, 120 miles to the southwest.

(b)Copy of purchase contract to be submitted.

(c) The exploration program here laid out will be specifically conducted on the MERRY and MINERAL claims.

There are no loans or other encoumberances against the property and purchase contract specifies that a Government Loan agreement may be entered into.

2. (a) Tungsten and Beryl.

(b) Complete engineering report and map submitted with this application. (Report and maps need not be returned.)

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

3. (a) The proposed work will be as follows: Extend present lower level drift 300 feet northward along the main ore body, drill two 150 foot core drill holes to probe the downward extent of this same ore body, then (dependent on results of drilling) sink a 100 foot winze inclined along the strongest section of ore exposed in the drift level, then drive 300 feet of drift along the ore body from the bottom of this winze.

In addition, the following program will be carried to explore the flat-bedded, beryl bearing ore body exposed on the MERRY claim; Two weeks bulldozer stripping will be required to expose the extent of the deposit on the flat hillside on the south side of the gulch and expose the end of the same bed where it is presumed to enter the hillside on the north side of the same guldh. See map for locations. Then 500 feet of core drilling (4 holes) will be undertaken to outline the ore body on the north side of the gulch.

Tungsten exploration	$39,038.00	
Beryl Exploration	5,200.00	
Project total		$44,238.00

(b) This project can be started within one week after approval and completed within ten months after that date.

4. Maps attached

5. There are no existing facilities, buildings, installations, or fixtures.

6. Compressor house and work shop --labor 400.00
Material 1000.00

Total $1,400.00

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

7. (a) None

(b)

1200 feet of 16# rail Used	400.00	
700 feet of 2" and 3" air pipe (used)	350.00	
Air jackleg and hammer complete	950.00	
Tank truck	750.00	
Trailer house for crew housing	950.00	
total		$3,400.00

(c) Baltimore Camas will provide an H. D. 15 tractor with dozer and driver for 12 days to strip beryl vein @ 100.00/day — Rental 1200.00

	Unit cost	Rental
Lyner and Jackhammer (Cleveland)	700.00	116.60
Sullivan mucking machine	2400.00	400.00
Hendrie Hoist	600.00	100.00
1947 Ford, 1½ ton flatbed truck	900.00	150.00
440 cu. ft. compressor with D-13000 diesel power unit	9000.00	1500.00
3 mine cars	450.00	75.00
Hoses, shop equipment, etc.	500.00	83.40
Total rentals		$3625.00

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

8. Before entering a statement of labor cost it may be well to state that as much of the project as possible will be handled on a contract basis since experience in the area entailing a comparison of costs indicates that both from a standpoint of speed and efficiency the contract system is the most satisfactory and economical.

A maximum of 15.00/ft. is allowed for labor cost of all drifting.

Drifts will be 5 x 7 with but little timber required.

600 feet of drift at 15.00 per foot $9,000.00

Upper drift will be driven requiring 4 miners on a two shift daily basis @13.00/day

Lower drifts will require three miners (2 headings) and one hoistman on one shift also @ 13.00/day

Monthly cost of drifting on this basis and estimating an average advance of 95 feet per month will be:

4 men	1300.00
Add 10% comp.	130.00
etc.	1430.00

A maximum of 50.00/ft. is allowed for winze sinking labor cost. Winze calculated to complete in a little over two months.

Winze sinking will require 1 hoistman @13.00/day
2 timbermen @16.00/day
2 miners @16.00/day
1 trammer @13.00/day

25 days per month	6 men	2250.00
	Add 10% comp.etc.	225.00
	Monthly cost	2475.00

Sinking will be on a two shift basis

1--general Supt. @500.00/mo.
1--Foreman @15.00/day
1--Engineer @500.00/mo.
1--Project accountant @250.00/mo.
(Note: Supt., engineer, and accountant will serve three projects, hence only 1/3 of the total cost charged to this project)

Total supervisory, engineering, and accounting at 1/3 of above rates $8,063.00

9. Material and supplies, including explosives, stee, bits, fuel, hand tools, machinery upkeep and repair, and timber have been computed on a basis of 7.50 per foot for drifts.

The breakdown of this per foot figure is as follows:

Explosives	4.15
Bits	1.15
Steel	0.25
Fuel	1.10
Misc.	0.85
	7.50

600 feet of drifts at 7.50 per foot $4,500.00

Material and supplies for winze sinking computed on a basis of 30.00 per foot as follows:

* Timber	19.00
Explosives	6.00
Bits	1.50
Steel	0.40
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Misc.	1.60
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*Timber to be used will be 6 x 6, 2" lagging, 3 x 5 guides, and ladder stock.

100 foot winze at 30.00 per foot $3,000.00

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10. (a) $10,279.50 which includes 25% of the tungsten exploration cost and 10% of the beryl exploration cost, and of which $3625.00 will be paid by eq ipment rental or depreciation.
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11. This property is now being put into operation by Baltimore Camas Mines with the immediate objective of mining an ore body already blocked out at the lower drift level. This exploration program is designed to explore the extensions of this same ore body and also to determine the significance of the beryl-tungsten ore bed exposed on the MERRY claim. Samples of this ore will be sent to the Bureau of Mines in Reno, Nevada to determine the most feasible method of separation and concentration. This beryl deposit is unusual in type and may assume considerable importance with added exploration .

Form MF-103
(Revised June 1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. dma/ 2136
Metal or Mineral
Date Received 10-9-51
Amount $
Participation (Government %)

DEFENSE MINERALS ADMINISTRATION WASHINGTON, D.C.
OCT 9 2 50 PM '51

Name and address of applicant

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

Date October 5, 1951

If you have already filed MF-100, give date filed _____, type of assistance requested Exploration loan,

DMA Docket Number (if available) _____

INSTRUCTIONS

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1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

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   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

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3. (*a*) Describe fully the proposed work and give the total cost of the project.

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4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

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   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

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

CERTIFICATION

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

Baltimore Camas Mines, Inc.
(Name of company)

By D. E. Anderson
(Signature of authorized official)

October 5, 1951
(Date)

for G. P. Williams, Pres.
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

1. (a) The property involved in this exploration project is the APEX-TUNGSTEN group of 9 unpatented lode mining claims located in the Johnson Peak (unorganized) district of Juab County , Utah. Claims are named as follows: MERRY; MINERAL; SUN; METAL; BATTLE; BEAR; and APEX 1,2,3 . Claims are in Sec. 21, T12S, R18W, and are five miles from the Trout Creek ranch (west). The shipping and supply point is Ely, Nevada, 120 miles to the southwest.

(b)Copy of purchase contract to be submitted.

(c) The exploration program here laid out will be specifically conducted on the MERRY and MINERAL claims.

There are no loans or other encoumberances against the property and purchase contract specifies that a Government Loan agreement may be entered into.

2. (a) Tungsten and Beryl.

(b) Complete engineering report and map submitted with this application. (Report and maps need not be returned.)

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

3. (a) The proposed work will be as follows: Extend present lower level drift 300 feet northward along the main ore body, drill two 150 foot core drill holes to probe the downward extent of this same ore body, then (dependent on results of drilling) sink a 100 feet winze inclined along the strongest section of ore exposed in the drift level, then drive 300 feet of drift along the ore body from the bottom of this winze.

In addition, the following program will be carried to explore the flat-bedded, beryl bearing ore body exposed on the MERRY claim; Two weeks bulldozer stripping will be required to expose the extent of the deposit on the flat hillside on the south side of the gulch and expose the end of the same bed where it is presumed to enter the hillside on the north side of the same guldh. See map for locations. Then 500 feet of core drilling (4 holes) will be undertaken to outline the ore body on the north side of the gulch.

Tungsten exploration	$39,038.00	
Beryl Exploration	5,200.00	
Project total		$44,238.00

(b) This project can be started within one week after approval and completed within ten months after that date.

4. Maps attached

5. There are no existing facilities, buildings, installations or fixtures.

6. Compressor house and work shop --labor 400.00
Material 1000.00

Total $1,400.00

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

7. (a) None

(b)

1200 feet of 16# rail Used	400.00	
700 feet of 2" and 3" air pipe (used)	350.00	
Air jackleg and hammer complete	950.00	
Tank truck	750.00	
Trailer house for crew housing	950.00	
total		$3,400.00

(c) Baltimore Camas will provide an H. D. 15 tractor with dozer and driver for 12 days to strip beryl vein @ 100.00/day — Rental 1200.00

	Unit cost	Rental
Lyner and Jackhammer (Cleveland)	700.00	116.60
Sullivan mucking machine	2400.00	400.00
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1947 Ford, 1½ ton flatbed truck	900.00	150.00
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3 mine cars	450.00	75.00
Hoses, shop equipment, etc.	500.00	83.40
Total rentals		$3625.00

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

8. Before entering a statement of labor cost it may be well to state that as much of the project as possible will be handled on a contract basis since experience in the area entailing a comparison of costs indicates that both from a standpoint of speed and efficiency the contract system is the most satisfactory and economical.

A maximum of 15.00/ft. is allowed for labor cost of all drifting.

Drifts will be 5 x 7 with but little timber required.

600 feet of drift at 15.00 per foot $9,000.00

Upper drift will be driven requiring 4 miners on a two shift daily basis @13.00/day

Lower drifts will require three miners (2 headings) and one hoistman on one shift also @ 13.00/day

Monthly cost of drifting on this basis and estimating an average advance of 95 feet per month will be:

4 men	1300.00
Add 10% comp. etc.	130.00
	1430.00

A maximum of 50.00/ft. is allowed for winze sinking labor cost. Winze calculated to complete in a little over two months.

Winze sinking will require 1 hoistman @13.00/day
2 timbermen @16.00/day
2 miners @16.00/day
1 trammer @13.00/day

25 days per month	6 men	2250.00
	Add 10% comp. etc.	225.00
	Monthly cost	2475.00

Sinking will be on a two shift basis

1--general Supt. @500.00/mo.
1--Foreman @15.00/day
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1--Project accountant @250.00/mo.
(Note: Supt., engineer, and accountant will serve three projects, hence only 1/3 of the total cost charged to this project)

Total supervisory, engineering, and accounting at 1/3 of above rates $8,063.00

Baltimore Camas Mines, Inc.
601 Eastman Bldg.
Boise, Idaho

9. Material and supplies, including explosives, stee, bits. Fuel, hand tools, machinery upkeep and repair, and timber have been computed on a basis of 7.50 per foot for drifts.

The breakdown of this per foot figure is as follows:

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600 feet of drifts at 7.50 per foot $4,500.00

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