MME Form 9
Rev. Mar. 59

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

OFFICIAL DOCKET FILE

Contract No. ~~xxx23~~ Idm-E1094

Docket No. ~~xxxMME~~ DMEA-4568

Application
- [ ] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [x] Certification of Discovery 1-13-61
- [ ] Closing Letter
- [x] Cost Audits 1-5-61
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [x] Contract Amendments
- [x] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and Attachments

Right Side

- [x] Project Summary (final) 1-12-61
- [x] Work Completed Analysis (final) 1-10-61
- All other material filed in chronological order including the following reports if checked:
- [ ] Field Team Semiannual Report for Certified Project
- [xxx] Final Field Team Report (Tab) Dec. 1960
- [xx] Operator's Final Report (Tab) 10-8-60** (Folder 2)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [xx] On-site Exam. Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:
Folder No. 1 - Correspondence 12/10/56 to 12/31/58
Folder No. 2- Correspondence 1/1/59 to present

Left Side

Folders No. 4, 4-A : Reports
- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

- [ ] Field Team Semiannual Report for Certified Project
- [xx] Field Team Interim Reports
- [xx] Operator's Monthly Reports with Transmittal, Narrative and Maps

** Maps received with Opr.'s final report included

Folders No. 3 ** : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty Material

52615

MME FORM 6 REFERENCE SLIP

REV. 2-59 OFFICE OF MINERAL XPLORATION

TO:	DATE	INITIALS
1. Mr. Johnson	5/5	[illegible]
2. Mr. Selfridge		
3.		
4.		
5.		ZZO
FROM: Mr. Fisher		

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS:

INT.-DUP. SEC., WASH., D.C. M56300-62

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

MAY 5 1965

Memorandum

To: Acting Field Officer, Region III

From: Contract Administration and Audit Division
/s/ C. E. Fisher

Subject: DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly or Questa Mine
Taos County, New Mexico
Contract Idm-E1094

The original and two copies of a Report of Royalty Review covering the subject contract are enclosed. If you concur in the facts stated therein, please make the following distribution:

(a) Original to the Fiscal Section, Office of Management Operations, Office of the Secretary, Department of the Interior, Washington, D. C. 20240;

(b) One copy for the Operator; and

(c) One copy for your files.

As evidence of your concurrence, a copy of your letter transmitting the copy of the report to the Operator should be furnished this Division. If for any reason you do not concur, the original and both copies of the report should be returned to this Division with your comments.

Enclosure

CEFisher:fh
5/5/65

cc: Docket
Fiscal Section
CA & A Division
Director's reading file

23263

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-E1094, Docket DMEA-4568 (Molybdenum), dated May 31, 1957, with

Molybdenum Corporation of America
P. O. Box 8
Idaho Springs, Colorado
and
280 Park Avenue
New York, New York 10017

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Moly or Questa Mine located in the Red River Mining District, Taos County, New Mexico, during the period November 4, 1961, through April 26, 1965.

A certification of discovery or development was issued on January 13, 1961, and, in accordance with Article 6, Annex II, and Amendment No. 4 of the contract, royalty is payable on all minerals produced from the land described in Article 2 of the contract as amended, or transported through any portion of workings to the cost of which the Government contributed, for a period of 16 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review dated January 5, 1961, indicated accepted costs under the exploration contract amounting to $400,679.14 with the Government's contribution on a 50 percent basis being $200,339.57.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established the total sales subject to the Government's royalty for the period to be $23,599.86. Royalty payable to the Government at the rate specified in the contract is $1,179.99.

A prior Report of Royalty Review established no sales subject to the Government's royalty for the period May 31, 1957, through November 3, 1961. Accordingly, as of November 3, 1961, the royalty account of this project was found to be:

Total Royalty Payable	$ -0-
Total Royalty Paid	-0-
Balance of Royalty Due	$ -0-

As of April 26, 1965, the royalty account of this project was found to be:

Total Royalty Payable	$1,179.99
Total Royalty Paid	1,179.95
Balance of Royalty Due	$ .04

C. E. Fisher

May 4, 1965

C. E. Fisher, OME Auditor

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

This contract provides that the Operator, as principal if the producer or as surety if not the producer, shall pay a percentage royalty on all minerals produced from the 12 patented and 24 unpatented claims located in sec. 2, T. 28 N., R. 13 E., and secs. 25, 35, and 36, T. 29 N., R. 13 E., N.M.P.M., and also on any production transported through any workings to the cost of which the Government contributed. The Operator owned all 36 of the claims; however, 8 of the patented claims were subject to a mortgage to secure promissory notes payable to the Dotson Minerals Corporation. The latter executed a Lien and Subordination Agreement on December 8, 1959.

Work under the contract was completed on June 30, 1960. Both during and after the project work, the Operator performed additional exploration work on its own account. By letter dated November 3, 1961, the Operator advised that higher grade material saved from exploration work had resulted in "production of 7,931 pounds of MoS2 in concentrates" which was stockpiled at the Questa mill for shipment upon accumulation of a car-load. However, the letter further stated that the mill was shut down on October 14, 1961.

On August 30, 1963, the stockpiled material was shipped to the Operator's plant at Washington, Pennsylvania, for processing. Subsequently, three additional shipments were made on which the Government's royalty has been computed and paid. A summary of the production and royalty computation applicable to the four shipments follows:

MoS_2	23,825 Pounds
MO	14,292 Pounds
Recovery Factor	97.7%
MO Onide	13,964 pounds
Value	$23,599.86
Royalty Due 5%	1,179.99
Royalty Paid	1,179.95
Balance Due	$ .04 *

*Computation error pertaining to September 1964 shipment.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate that all production subject to royalty since the date of the contract has been reported and royalty paid on an acceptable basis; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible additional royalty which might be disclosed.

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-E1094, Docket DMEA-4568 (molybdenum), dated May 31, 1957, with

Molybdenum Corporation of America
P. O. Box 8
Idaho Springs, Colorado
and
575 Park Avenue
New York 22, New York

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Moly or Questa Mine located in the Red River Mining District, Taos County, New Mexico, during the period May 31, 1957, through November 3, 1961.

A certification of discovery or development was issued on January 13, 1961, and, in accordance with Article 6, Annex II, and Amendment No. 4 of the contract, royalty is payable on all minerals produced from the land described in Article 2 of the contract as amended, or transported through any portion of workings to the cost of which the Government contributed, for a period of 16 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review dated January 5, 1961, indicated accepted costs under the exploration contract amounting to $400,679.14 with the Government's contribution on a 50 percent basis being $200,339.57.

The status of the project, the scope of review, and the reasons therefor are stated on page 2.

This review established no sales subject to the Government's royalty for the period. Accordingly, as of November 3, 1961, the royalty account of this project was found to be:

Total Royalty Payable	$ -0-
Total Royalty Paid	-0-
Balance of Royalty Due	$ -0-

E. D. Talbert, OME Auditor

May 17, 1962

Idm-E1094 Molybdenum Corporation of America DMEA-4568

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

This contract provides that the Operator, as principal if the producer or as surety if not the producer, shall pay a percentage royalty on all minerals produced from the 12 patented and 24 unpatented claims located in sec. 2, T. 28 N., R. 13 E., and secs. 25, 35, and 36, T. 29 N., R. 13 E., N.M.P.M., and also on any production transported through any workings to the cost of which the Government contributed. The Operator owned all 36 of the claims; however, 8 of the patented claims were subject to a mortgage to secure promissory notes payable to the Dotson Minerals Corporation. The latter executed a Lien and Subordination Agreement on December 8, 1959.

Work under the contract was completed on June 30, 1960. Both during and after the project work the Operator performed additional exploratory work on its own account. By letter dated November 3, 1961, the Operator advised that higher grade material saved from exploration work had resulted in "production of 7,931 pounds of MoS_2 in concentrates" which was stockpiled at the Questa mill for shipment upon accumulation of a car-load. However, the letter further stated that the mill was shut down on October 14, 1961.

This contract grants to the Government the option of requiring computation and payment of royalty on any production remaining unsold six months after extraction from the ground.

This review was made in lieu of an on-site audit of the Operator's accounts and records for the following reasons:

(1) The files indicate that no production subject to royalty has been sold since the date of the contract; and

(2) The administrative cost to the Government of an on-site royalty audit at this time would be excessive in relation to the amount of possible royalty which might be disclosed.

Docket copy

Murphy
Gilbert
Selfridge

CERTIFICATION BY THE UNITED STATES OF AMERICA OF A DISCOVERY OR DEVELOPMENT UNDER AN EXPLORATION PROJECT CONTRACT

To: Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

Pursuant to the provisions of Exploration Project Contract No. Idm-E1094, dated May 31, 1957, (Docket No. DMEA-4568), as amended, hereinafter called the "contract," between Molybdenum Corporation of America, a Delaware corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Underground drifting and crosscutting on the 2nd Tunnel Shaft Level of the Questa mine and diamond drilling from these openings indicated significant areas of molybdenite-bearing material within or near the contact zone of Tertiary intrusive granite porphyry and andesite volcanics (locally termed green rock). The molybdenite occurs with quartz and pyrite in small veinlets, in well developed veins several inches to a foot or more in width, and as a thin veneer or paint on joint and shear surfaces.

Dated: JAN 13 1961

THE UNITED STATES OF AMERICA

By (signed) FRANK E. JOHNSON
Acting Director, Office of Minerals Exploration

FMMurphy/fw/gla
1-11-61

cc: Operator (original)
Dotson Minerals Corporation
C.A.Fredell, GSA
Contract Division
Fiscal Section
Region III (2)
Director's Reading File
F. E. Johnson
Review Committee
Harold Kirkemo, USGS
Code 500, Mr. Murphy
Chron
Docket

DOCKET COPY

Murphy
Inserted
Seller 11/2

INTERIOR DEPT.
NOV 1 - 1960
SOLICITOR

Acknowledged
Talbutt
Selfridge

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

Pursuant to the provisions of Exploration Project Contract No. Idm-E1094, dated May 31, 1957, (Docket No. DMEA-4568), as amended, hereinafter called the "contract," between Molybdenum Corporation of America, a Delaware corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

Underground drifting and crosscutting on the 2nd Tunnel Shaft Level of the Questa mine and diamond drilling from these openings indicated significant molybdenite-bearing areas within or near the transitional contact zone of Tertiary intrusive granite porphyry and andesite volcanics (locally termed green rock). The molybdenite occurs with quartz and pyrite in small veinlets, in well developed veins several inches to a foot or more in width, and as a thin veneer or paint on joint and shear surfaces.

Dated: _____

THE UNITED STATES OF AMERICA

By _____
Acting Director, Office of
Minerals Exploration

FMMurphy/fw-10/28/60
cc: Docket
Director's Read.File
Dotson Minerals Corp.
C.A.Fredell, GSA
CA&A Division
Review Committee
Fiscal Section
Reg. III (2)
H.Kirkemo, USGS
F.E.Johnson
F.M.Murphy
Chron.

MME FORM 6 REFERENCE SLIP

REV. 2-59 OFFICE OF MINERALS EXPLORATION

TO:	DATE	INITIALS
1. Mr. Johnson	1/9	[illegible]
2. ~~Mr. Selfridge~~		
3. Mr. ~~Griswold~~ Murphy	1/9	[illegible]
4.		
5.		
FROM: E. D. Talbert [illegible]	1/5	

FOR: Check items for action desired

____ Action ____ Reply for signature of ____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS:

INT.-DUP. SEC., WASH., D.C. M56300-59

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF REVIEW

I have reviewed the Monthly Reports of:

Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

pertaining to Exploration Project Contract Idm-E1094, DMEA-4568, including Amendments Nos. 1, 2, 3, and 4, for June 1957 to June 1960, inclusive, covering a molybdenum project at the Moly (Questa) Mine, Taos County, New Mexico.

My review included an examination of the Monthly Reports (Forms MF-104) and supporting documents, comparison of the claimed costs with the contract and pertinent schedules, confirmation of work performed by reference to Field Office reports and correspondence, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reason:

> All of the acceptable cost was under a contract provision for contribution by the Government on the basis of fixed unit costs of work performed.

The findings of this review are stated in the following summary and the attached schedule:

Total cost billed by Operator		$400,679.14
Exceptions:		
Prior to this review	$ -0-	
Herewith	-0-	-0-
Acceptable cost		$400,679.14

The contract calls for a 50 percent contribution of the allowable costs by the Government. Therefore, if the project is otherwise accepted as having met the terms of the contract, payments as follows are valid and proper:

Payable on audited claim	$200,339.57
Paid to date	199,839.57
Balance due Operator	$ 500.00

E. D. Talbert

E. D. Talbert, OME Auditor

JAN 5 1961

Contract Idm-E1094 Molybdenum Corp. of America DMEA-4568

Acceptable costs:

Stage I

Diamond drilling	7,507 ft. @	$ 5.00	$ 37,535.00
Reaming and casing, etc.	500 ft. @	1.00	500.00
Drill stations	71 ft. @	44.43	3,154.53
Drifts and crosscuts	1,000 ft. @	44.43	44,430.00
Timbering	932 ft. @	2.70	2,516.40
Samples analyzed	942 ea. @	3.00	2,826.00
			90,961.93

Stage II

Diamond drilling	13,912 ft. @	$ 5.00	69,560.00
Reaming and casing, etc.	1,000 ft. @	1.00	1,000.00
Drill stations	250 ft. @	44.43	11,107.50
Drifts and crosscuts	4,777 ft. @	44.43	212,242.11
Timbering	3,198 ft. @	2.70	8,634.60
Samples analyzed	2,391 ea. @	3.00	7,173.00
			309,717.21
Total			$400,679.14

AGREEMENT FOR SALE OF MINING CLAIMS

This AGREEMENT, made this 17th day of February, 1959, by and between Dotson Minerals Corporation, a New Mexico corporation, hereinafter called the Seller, and Molybdenum Corporation of America, a Delaware corporation, hereinafter called the Purchaser,

WITNESSETH:

1. The Seller agrees to sell and the Purchaser agrees to purchase all of these certain patented mining claims lying and being in the Red River Mining District of Taos County, New Mexico, and in Secs. 25, 35 and 36, T. 29 N., R. 13 E., and being known as Buena Vista Nos. 1, 2, 3, 4, 6 and 7, and Torbert No. 2, and Renegade, all as shown by U. S. Mineral Survey No. 1943, and as described in U. S. Patent No. 1013380 dated March 19, 1926, for the sum of Fifty Thousand ($50,000.00) Dollars and upon the terms and conditions as follows:

2. The Seller will furnish to Purchaser an abstract of title to said claims, or an abstract of the indices of the records of Taos County, New Mexico, and tax rolls back to the year 1932, showing all taxes and instruments affecting the title thereto with photostat copies of the instruments themselves as required by Purchaser, and after examination of said abstract or evidence of title, the Purchaser, if satisfied that Seller can deliver merchantable title to said claims will, within 15 days, pay the Seller Ten Thousand ($10,000.00) Dollars to be applied upon the purchase price.

3. Seller's attorney will then proceed to bring a suit to quiet title, if necessary, at the election and at the expense of the Purchaser (but not to exceed $400.00); and provided that should Seller's title be contested in such action, the cost and expense of such contest and any expense of acquiring any outstanding title will be borne by Seller. Purchaser's attorney shall advise

(Enclosed with Operator's letter 10/30/59 to Region III; see cy J. W. Townsend memorandum November 3, 1959, to J. W. Hasler and T. M. Romslo, in Folder No. 2, Correspondence)

Seller's attorney within 30 days after receipt of the abstract or evidence of title satisfactory to him, of Purchaser's election to require a suit to quiet title, or its acceptance of said title.

4. Should Purchaser elect not to bring a suit to quiet title, or after such suit has been completed and merchantable title delivered to Purchaser by warranty deed, Purchaser shall pay to Seller the balance of the purchase price as follows:

> Ten Thousand ($10,000.00) Dollars within one year from the date hereof and after merchantable title has been delivered, or Ten Thousand ($10,000.00) Dollars at the time of delivery of such title should it require more than one year to deliver merchantable title.
>
> Ten Thousand ($10,000.00) Dollars within two years from the date hereof and after delivery of merchantable title.
>
> Ten Thousand ($10,000.00) Dollars within three years from the date hereof and after delivery of merchantable title.
>
> Ten Thousand ($10,000.00) Dollars within four years from the date hereof and after delivery of merchantable title.

5. Upon delivery of merchantable title to Purchaser, it shall execute a note or notes for the balance of the purchase price then owing as above provided, bearing interest at the rate of two (2%) percent per annum on the unpaid balance and shall execute a first mortgage on the property above described to Seller to secure payment of said notes and shall deliver said note or notes and mortgage to Seller. The note or notes shall contain the usual provision that failure to pay any one note when due shall accelerate the due date of all outstanding notes so that each and all become then due, and shall further provide that all or any part of the outstanding balance may be paid at any time in advance of the due date at the option of the Purchaser, and upon final payment the mortgage will be released.

6. Possession of the property will be delivered and the

full right to explore, mine and dispose of ore and use all property including timber thereon for its necessary operation will be granted upon the execution of this Agreement and the payment of Ten Thousand ($10,000.00) Dollars to Seller as above provided, In the event title cannot be perfected, Seller shall return to Purchaser the Ten Thousand ($10,000.00) Dollars down payment.

7. Each party agrees to execute such documents necessary to carry out this sale, and to cooperate with the other in the perfecting of title so that transfer can be made as soon and as expeditiously as possible.

8. Merchantable title as the term is used herein shall be in accordance with the standards of the State Bar Association and shall include the provision that the lands are free and clear of all liens and taxes, except ad valorum taxes for the current year, which will be prorated between the parties hereto as of the date of this Agreement, and Purchaser will pay the taxes thereafter and during the period of its possession.

9. This AGREEMENT shall be binding and inure to the benefit of the parties hereto and their assigns.

IN WITNESS WHEREOF, the parties hereto have affixed their corporate names and seals, this day and year first above written.

DOTSON MINERALS CORPORATION. (SEAL)

By /s/ Carl E. Dotson
President

(SEAL)

MOLYBDENUM CORPORATION OF AMERICA

By /s/ Marx Hirsch
President

STATE OF NEW MEXICO }
COUNTY OF SANTA FE } ss

The foregoing instrument was acknowledged before me this

17th day of February, 1959, by Carl E. Dotson, President of Dotson Minerals Corporation, a New Mexico corporation, on behalf of said corporation.

/s/ John T Watson
Notary Public

My Commission Expires:

April 10, 1962

(SEAL)

STATE OF NEW YORK }
COUNTY OF New York } ss

The foregoing instrument was acknowledged before me this 19th day of February, 1959, by Marx Hirsch, President of Molybdenum Corporation of America, a Delaware corporation, on behalf of said corporation.

/s/ Gertrude F. Brown
Notary Public

My Commission Expires:

GERTRUDE F. BROWN
Notary Public, State of New York
No. 31-5476200
Qualified in N. Y. County
Commission Expires March 30, 1960
(SEAL)

STATE OF NEW MEXICO }
COUNTY OF TAOS } SS.

This instrument was filed for record on the 24 day of February A. D. 1959, at 1:40 O'clock P. M. and duly recorded in book 8-34 Page 150-151 on 26 day of Feb. 1959.

Jose Teodoro Montoya (SEAL)
County Clerk Office
Taos, New Mexico

By /s/ A. Montoya Deputy

Compared from A M
To J.T.M
Indexed

7386
11:30
10/16/59

Recorded
Taos Co. Rec
Bk. A58 pg 391-392

WARRANTY DEED

DOTSON MINERALS CORPORATION, a New Mexico corporation, for consideration paid, grants to MOLYBDENUM CORPORATION OF AMERICA, a Delaware corporation, the following described real estate in Taos County, New Mexico:

> Those certain patented mining claims in the Red River Mining District of such county and state and in Secs. 25, 35, and 36, T. 29 N., R 13 E., more particulary described as follows:
>
> Buena Vista No. 1, Buena Vista No. 2, Buena Vista No. 3, Buena Vista No. 4, Buena Vista No. 6, Buena Vista No. 7, Torbert No. 2, and Renegade, all as shown by U. S. Mineral Survey No. 1943, and as described in U. S. Patent No. 1013380, dated March 10, 1928;

with warranty covenants.

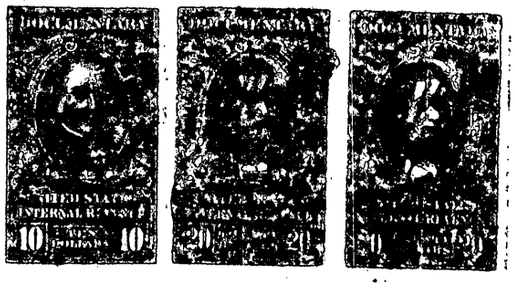
WITNESS its hand and seal this 15th day of October, A. D. One Thousand, Nine Hundred and Fifty Nine.

DOTSON MINERALS CORPORATION,

By: Carl E. Dotson
President.

Attest:

William R. Noonan
Secretary.

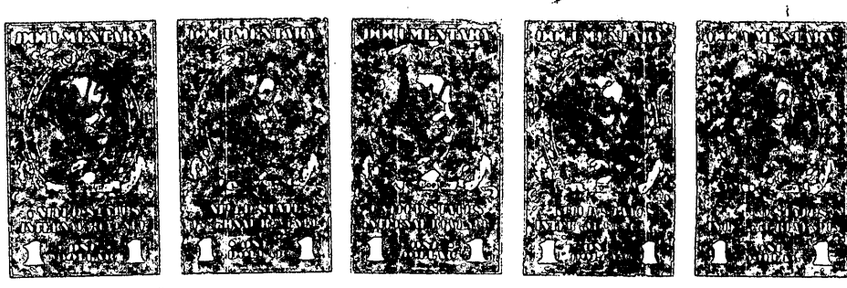


STATE OF NEW MEXICO)
) ss.
County of Socorro)

The foregoing instrument was acknowledged before me this 15 day of October, 1959, by Carl E. Dotson, president of Dotson Minerals Corporation, a New Mexico corporation on behalf of said corporation.

Carl E. Dotson
Notary Public.

My commission expires:
June 21, 1961



MORTGAGE

MOLYBDENUM CORPORATION OF AMERICA, a Delaware Corporation, for consideration paid, grants to DOTSON MINERALS CORPORATION, a New Mexico Corporation, the following described real estate, in Taos County, New Mexico.

> Buena Vista, No. 1, Buena Vista No. 2, Buena Vista No. 3, Buena Vista No. 4, Buena Vista No. 6, Buena Vista No. 7, Torbert No. 2, and Renegade, patented lode mining claims, all as shown by U. S. Mineral Survey No. 1943, and as described in U. S. Patent No. 1013380, Dated March 10, 1928, lying in the Red River Mining District and in Sections 25, 35, and 36 (unsurveyed), Township 29 North, Range 13 East.

with mortgage covenants.

This mortgage secures the performance of the following obligation:

> Four (4) Promissory Notes, all of date hereof and bearing interest at the rate of 2% per annum from February 17, 1959, said notes being in the principal sum, and due as follows:
>
> Promissory Note 1, $10,000.00 due February 17, 1960
> Promissory Note 2, $10,000.00 due February 17, 1961
> Promissory Note 3, $10,000.00 due February 17, 1962
> Promissory Note 4, $10,000.00 due February 17, 1963
>
> All notes contain an accelaration clause in the event of default, and provide that payment may be made in advance if applied on the note next due in order, and for attorneys' fees in the event of suit thereon.

and is upon the statutory mortgage condition for the breach of which it is subject to foreclosure as provided by law.

WITNESS its hand and seal thie 14th day of October 1959.

MOLYBDENUM CORPORATION OF AMERICA

By Marx Hirsch
President

ATTEST:

Wm. B. Kuntz
Ass. Secretary

STATE OF NEW YORK)
) ss
COUNTY OF NEW YORK)

The foregoing instrument was acknowledged before me this 14th day of October, 1959, by Marx Hirsch, President of Molybdenum Corporation of America, a Delaware corporation, on behalf of said corporation.

Gertrude F. Brown
Notary Public

My Commission expires:
March 30, 1960

Recorded: Records of County Clerk, Taos, N.M.
October 16, 1959 at 11:34 a.m.

Government's Copy

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

11/19 J. Lynch
Hoffman
Seller 11-23
Murphy
Grundy
Talbut
Selfridge

AMENDMENT NO. 4

It is agreed this 25th day of November, 1959, between the United States of America, acting through the Office of Minerals Exploration, hereinafter called the "Government," and Molybdenum Corporation of America, hereinafter called the "Operator," that Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, as amended, is further amended, effective November 1, 1959, as follows:

1. The date fixed in Article 1 (a) of the contract for completion of the work is extended from 30 months to 37 months.

2. In Annex II, Item (b) is changed to read as follows: In Article 6 (b) of the contract the period "15 years" is changed to "16 years."

3. It is the essence of this Contract that the work be completed on or before June 30, 1960, in the manner required by the Contract, and if it is not so completed, the following provisions shall thereupon become effective:

(a) The Contract and all obligations of the parties thereunder, except as otherwise herein provided, shall be and are hereby terminated.

(b) The Government will contribute only to the allowable costs incurred prior to June 30, 1960, except the costs for assays of samples shipped to laboratories on or prior to that date, which may be billed subsequently.

(c) The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of a final report and final account.

(d) The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer (for example, if the Operator either transfers or fails to retain its interest in the land), shall pay to the Government the royalty on production provided for in the Contract (as amended herein), as if [certification of discovery or development] had been made, such certification being hereby waived by the Operator.

For OME
[certification of possible production]

In addition, all rights of the Government provided for in the Contract with respect to a certification of discovery or development, percentage royalty and liens to secure payment thereof, reports (including preservation of the Operator's records), accounts, audits, and the right to recover any overpayments are hereby preserved.

(e) The Operator hereby agrees to save the Government harmless from all claims or demands under or arising out of the Contract, except as otherwise provided by this amendment.

4. In Annex I of the Contract the following claims are added:

Buena Vista Nos. 1, 2, 3, 4, 6, and 7, Torbert No. 2, and Renegade, situate in secs. 25, 35, and 36, T. 29 N., R. 13 E., Red River Mining District, Taos County, New Mexico. The claims are as shown by U. S. Mineral Survey No. 1943, and as described in U. S. Patent No. 1013380, dated March 10, 1928.

The approximate locations of the above-mentioned claims with reference to the other claims mentioned in Annex I are shown on the claim map attached to and described in Amendment No. 3 to the Contract, and made a part hereof by reference. These claims are in Area A of the project area as described by the terms of the Contract.

The Operator has rights of possession of the above-named claims under the terms of a "Warranty Deed," dated October 15, 1959, by Dotson Minerals Corporation, which is recorded in Book A-58, pages 391-392, in the official records of Taos County, New Mexico.

A Lien and Subordination Agreement covering the claims, executed by Dotson Minerals Corporation, is attached hereto and made part hereof.

5. In Annex I the following claims owned by the Operator are added:

Phyllis Nos. 5 and 7, situate in secs. 35 and 36, T. 29 N., R. 13 E. Taos County, New Mexico. The claims are recorded in Book F13, pages 238 239, respectively, in the official records of Taos County, New Mexico.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the date and year first above written.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
Acting Director, Office of
Minerals Exploration

MOLYBDENUM CORPORATION OF AMERICA

By Max Rand

Title Pres

Government's Copy

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Taos, State of New Mexico;

described ~~as follows~~:[2] in a Warranty Deed, dated October 15, 1959 recorded in Book A-58, pp 391-392, in the official records of Taos County, New Mexico.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Molybdenum Corporation of America[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

None

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page _____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions _____ (State "None" or "See Annex No. _____".)

Dated this 8 day of Dec., 1959.

Carl E. Dotson (Seal)	440 Park	(Street)
Dotson Minerals Corporation	Socorro, N.M.	(City & State)
President		(Street)
(Seal)		(City & State)
		(Street)
(Seal)		(City & State)
		(Street)
(Seal)		(City & State)
		(Street)
(Seal)		(City & State)
		(Street)
(Seal)		(City & State)

I, William R. Noonan (Name) certify that I am the Secretary-Treasurer (Title—Secretary, etc.) of the corporation named herein; that Carl E. Dotson (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

William R. Noonan
(Corporate Seal)

Arnold

November 24, 1959

Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Taos County, New Mexico
Contract No. Idm-E1094

JUSTIFICATION FOR AMENDMENT NO. 4

In a memorandum, dated November 9, 1959, the Field Team recommended that the Government participate in the cost of driving a drift 1,000 feet easterly from No. 1 Crosscut North, and also submitted supporting memoranda from the field examiners.

No. 1 Crosscut North has been driven about 2,000 feet on the Operator's sole account. The last 200 feet of the crosscut has penetrated rock carrying the best persistant showing of molybdenum so far opened. The Operator on its own account is crosscutting into the same northerly area some distance to the west.

The area east of the No. 1 North crosscut has not been explored; however, it is toward the old mine workings and under the most favorable area indicated by the surface chemical work performed by the Operator.

The Field Team and field examiners recommend that the east drift should be 1,000 feet in length. However, it appears that if the drift was extended 500 east, then from the face of the drift diamond drill holes could be fanned out to explore the area further east, both laterally and vertically. Also, 1,000 feet of drifting and the required diamond drilling to explore the east area would extend the contract period beyond June 30, 1960.

F M Murphy

F. M. Murphy

Government's copy

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~~Murphy~~ | | 500

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

AMENDMENT NO. 3

It is agreed this 23d day of June, ~~1959~~, between the United States of America, acting through the Office of Minerals Exploration, and Molybdenum Corporation of America, that Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, as amended, is further amended, effective May 15, 1959, as follows:

In Exhibit "A", Description of the Work, the subtitle "Stage II (Area B)" is changed to read "Stage II (Areas A and B)"; in the first paragraph under the same subtitle the first sentence is deleted; the third paragraph is changed to read "Favorable areas disclosed by work under Stage I and Stage II in Areas A and B shall be further explored by not more than 19,500 feet of diamond drilling." Also, under Fixed Unit Costs the subtitle "Stage II - Area B" is changed to "Stage II - Areas A and B".

In Annex I of the contract the following claims are added:

Name of Claim	Section	Township	Range	Book	Page
Summit No. 4	35	29N	13E	S-33	405
Summit No. 5	35	29N	13E	S-33	406
Summit No. 7	35	29N	13E	S-33	408
Summit No. 8	35	29N	13E	S-33	409
Summit No. 16	35	29N	13E	S-33	417

The operator is the owner of the claims.

The approximate locations of the above-mentioned claims with reference to the other claims mentioned in Annex I are shown on the map entitled "Molybdenum Corporation of America, 375 Park Avenue, New York 22, N. Y., Moly Mine Questa, New Mexico, Claim Map and Adjacent Claims, Scale - 1 inch = 500 feet, drawn by T.D.R. 9/11/58, Revised by T.D.R. 12/31/58", attached hereto and made part hereof.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, or the amount of any item designated as maximum.

J. Lynch
Hoffman
App'd. Sol. Off.
Murphy
Talbot
Martin

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Frank E. Johnson
Acting Director, Office of
Minerals Exploration

MOLYBDENUM CORPORATION OF AMERICA

By Max Mirsch

Title President

Knowlt

June 12, 1959

JUSTIFICATION FOR AMENDMENT NO. 3

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Taos County, New Mexico

The operator at its own expense advanced No. 1 Crosscut North about 1000 feet to approximately coordinates N1850-E1000, and No. 7 Crosscut North to about coordinates 150N-1300W.

In a letter dated April 23, 1959, to the Field Team, the operator requested Government participation in extending No. 7 XCN and to drift 1000 feet on a bearing of S. 82° W. from coordinate N1850 in No. 1 XCN.

In a memorandum dated May 19, 1959, to the Operating Committee, the Field Team recommended that the extension of No. 7 XCN be denied; and that approval be granted for drifting 1000 feet both easterly and westerly from No. 1 XCN along coordinate N2000. These recommendations are in accordance with the recommendations in a memorandum dated May 14, 1959, by R. U. King and Carl Belser to the Executive Officer, Region III.

They state that contrary to the operator's contention, the grade of MoS_2 has not increased significantly toward the face of No. 7 XCN. Also, there is no evidence at this time to indicate that ore-grade material occurs along the contact of the green rock with the porphyry (which would be the target for the crosscut).

With regard to No. 1 XCN, they note that (1) the grade of mineralization over the last 500 feet is about twice that of the first 1500 feet and about equal to that found in the higher-grade zone (0.25% MoS_2) along the West drift, and (2) the proximity of the crosscut to the area of highest geochemical soil anomalies, the area of high-grade surface deposits, and the Granite-Green rock contact, still the best ore guide available, all point to the conclusion that higher-grade material is more likely to be discovered in this area than elsewhere.

The writer agrees with Messrs. King and Belser in their conclusions.

In a memorandum dated June 10, 1959, to the Operating Committee the Field Team, in accordance with recent information, recommend approval to drift from No. 1 XCN in a direction S. 82° W. from approximately coordinate N1850. It notes that its previous recommendation to drift east from

No. 1 XCN must be omitted because this work would enter the Hercules Group, which the operator has purchased, but has not definitely cleared title to the claims. The writer concurs in the Field Team's recommendations.

The proposed new work will benefit Summit claims Nos. 4, 5, 7, 8, and 16; therefore, they are added to the claims in Annex I by this amendment.

Under the contract all Stage II work must be performed in Area B. Since the proposed work is mostly in Area A, the contract must be amended to permit driving the drift and also any additional work, such as drilling, crosscutting, or raising that might be approved to explore favorable ground.

In Exhibit A, under General Provisions, the last paragraph states that all Stage II work must be approved in advance in writing. The Field Team can approve the proposed work if Area A is included under Stage II, subject to confirmation from the Washington office; therefore, to set out definite units of work in the proposed amendment No. 3 is not necessary.

F M Murphy

F. M. Murphy

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DATE	INITIALS	CODE

Government's copy

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

AMENDMENT NO. 2

~~It~~ is agreed this 6th day of January, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Molybdenum Corporation of America, that Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, is amended effective May 31, 1957, as follows:

1. In Exhibit "A", Description of the Work, under the heading General Provisions, the following sentence is added to paragraph four:

> "In the event insufficient core is recovered to make a representative sample from a section of any drill hole, then in lieu of a core sample the sludge from such section of hole shall be recovered and assayed for its MoS_2 content."

2. In Exhibit "A", Description of the Work, Stage II, (Area B), the second paragraph is revised to read:

> "The work consists of extending the Second Tunnel Shaft Level westward to a point approximately 400 feet west of coordinate W. 400 shown on map, Figure 4. With prior written Government approval crosscuts shall be driven north and/or south (from this drift) to explore for possible occurrences of molybdenum-bearing rock near the contact zones of the granite and 'Green rock' or volcanics; and additional exploratory drifts may be driven from the north-south crosscuts to follow the strike of favorable zones encountered. No crosscut driven from the Second Tunnel Shaft Level in Area B shall be closer than 400 feet to any crosscut driven in the same direction."

Long
Lanigan
Murphy
Taft
Selfridge

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the amount of any item designated as maximum.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mitchendorf
Administrator, Defense Minerals
Exploration Administration

MOLYBDENUM CORPORATION OF AMERICA

By Marc Hardy

Title President

Ellis

Ellis

January 6, 1958

JUSTIFICATION FOR AMENDMENT NO. 2

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Taos County, New Mexico

Item 1 of amendment:

On December 14, the Operator asked for approval to include sludge analyses in its monthly reports where not enough core could be recovered in a given footage to make a fair sample.

In view of the past record of poor core recovery (10 to 30%), the field examiners recommended that the Operator's request be approved (memo dated December 19, 1957). They also suggested that plug drilling might be worthwhile. The Field Team (memo December 26 to the Operating Committee) agrees that the Operator's request should be approved. However, it recommended that the provision for core drilling be retained to provide such core as possible for visual inspection.

Item 2 of amendment:

In a letter, dated December 10, 1957, the Operator requested approval to advance the west tunnel to coordinate W 800. The face of the west tunnel at that date was in molybdenum-bearing porphyry at coordinate W 300. Advancing this drift would explore for the west porphyry-green rock contact. The drift cut green rock that contained visible ~~uranium~~ molybdenum over a section of several hundred feet. At about coordinate W 100 the green rock trends upward. However, it is estimated that it will again be intersected by the drift further west.

The drift will enter an area indicated to be bounded by porphyry on the north, west, and south. Favorable fracturing is expected here. Also, the chances for greater depth in the overlying transition rock (silicified and otherwise altered green rock) appear favorable.

F M Murphy

F. M. Murphy

Government's copy

Lamy
Murphy
Everett
Chambers
Selfridge
Johnson

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

AMENDMENT NO. 1

It is agreed this 4th day of October, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and the Molybdenum Corporation of America, hereinafter called the "Operator," that Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, hereinafter called the "Contract," is amended effective May 31, 1957, as follows:

In Exhibit "A," Description of the Work, Stage I, the second paragraph under Project Area B is revised as follows:

> "From the west face of the Second Tunnel Shaft Level at the time work under this contract begins, continue the tunnel westward a distance of approximately 500 feet, or to a point where the tunnel has penetrated rock which does not contain visible molybdenum over a section measuring approximately 50 feet in length. At the west end of such a barren section a hole shall be drilled approximately horizontal westward until rock containing visible molybdenum has been penetrated, or the bottom of the hole has reached the approximate intersection of coordinate W. 400 shown on map Figure 4."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By O. Meadors
Administrator, Defense Minerals
Exploration Administration

MOLYBDENUM CORPORATION OF AMERICA

By Wm B Stennett

Title TREASURER

MF-200A
(Rev. April 1956)

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RECEIVED JUN 20 1957

DATE	INITIALS	CODE

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT
(Short Form)

DMEA No.	Commodity	Contract No.	County	State
4568	Molybdenum	Idm-E 1094	Taos	New Mexico

It is agreed 31 MAY 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and MOLYBDENUM CORPORATION OF AMERICA, a Delaware Corporation.

whose mailing address is ~~500 Fifth Avenue~~ 375 Park Avenue
New York ~~18~~ 22, New York
hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority and project.*—(a) This contract is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200A), the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed therein. The project work is a search for indicated or undeveloped deposits of the commodity designated above. The Operator shall begin the work on or before June 15, 1957, and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 30 months from the date of the contract.

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the project work is $ 510,500.00. The Government will contribute 50 percent of the fixed unit cost of the work performed, not exceeding $ 255,250.00, in accordance with the provisions of Articles 4 and 5.

(c) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's rights of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances: None

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached, as follows: None

(c) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing

in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. Two copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. *Performance of the work.*—(a) Operator's responsibility.—The work shall be performed diligently, efficiently, expertly, in a workmanlike manner, and in accordance with good mining standards and State regulations governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work, as specified in Article 1 (a).

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after certification of discovery or development, to inspect production operations and underground workings. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. *Contribution by the Government.*—The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5 (b); but all payments by the Government are provisional only, subject to audit, and until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been rendered, the Government may withhold such sums as it sees fit but not in excess of 10 percent of the estimated total cost of the work. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) Operator's records.—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered a sufficient final report (see Article 5), may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development. **See Article 10 and Annex II.**

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer or as surety if the Operator is not the producer (for example, if the Operator either transfers or fails to retain his interest in the land), shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. **See Article 10, and Annex II.**

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling, assaying, or transportation performed or paid by the Operator or by anyone other than the buyer are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent) after the lapse of six months from the date the ore was extracted from the ground remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this Article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 7. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and liens to secure the payment thereof, and such rights shall be fully preserved.

ARTICLE 8. *Notices to be given by the Government* may be delivered to the Operator or may be sent by registered mail addressed to the Operator at the mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. *Changes and added provisions.*—

See Annex II.

Butler
Sawyer
"Appd. Sol. Off."
Murphy
Ellis
Chambers
Selfridge

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. W. Mitteudorf
Administrator, Defense Minerals
Exploration Administration

MOLYBDENUM CORPORATION OF AMERICA
(Operator)

By Marx Hirsch

Title President

I, James S. Crawford, certify that I am the secretary of the corporation named as Operator herein; that Marx Hirsch, who signed this contract on behalf of the Operator, was then President 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.

James S. Crawford

[CORPORATE SEAL]

U. S. GOVERNMENT PRINTING OFFICE: 1956—O-383069

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EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

ANNEX I

The land referred to in Article 2 of the Contract consists of twenty-one (21) contiguous lode mining claims, 2 patented and 19 unpatented. Notices of the locations of the claims are recorded in the County Clerk's Office, Taos, New Mexico, as follows:

Name of Claim	Section	Township	Range	Book	Page
Rhyolite No. 2	36	29 N	13 E	F-15	37-38
Rhyolite No. 3	35, 36	29 N	13 E	F-15	38
Rhyolite No. 4	35, 36	29 N	13 E	F-28	232
	2	28 N	13 E		
Rhyolite No. 5	35	29 N	13 E	F-28	233
	2	28 N	13 E		
Rhyolite No. 6	35	29 N	13 E	F-28	234
Rhyolite No. 7	35	29 N	13 E	F-28	250
Rhyolite No. 8	35	29 N	13 E	F-28	251
	2	28 N	13 E		
Rhyolite No. 9	35	29 N	13 E	F-28	252
	2	28 N	13 E		
Rhyolite No. 10	35	29 N	13 E	F-28	253
	2	28 N	13 E		
Aplite No. 1	2	28 N	13 E	5-33	6
Aplite No. 2	2	28 N	13 E	5-33	7
Aplite No. 3	2	28 N	13 E	5-33	8
Aplite No. 4	2	28 N	13 E	5-33	9
Aplite No. 5	2	28 N	13 E	5-33	10
Aplite No. 6	2	28 N	13 E	5-33	11
Aplite No. 7	2	28 N	13 E	5-33	12
Aplite No. 8	2	28 N	13 E	5-33	13
Aplite No. 9	2	28 N	13 E	5-33	14
Aplite No. 10	2	28 N	13 E	5-33	15
Sargent No. 6	35, 36	29 N	13 E	Patent No. 1909	
Sargent No. 7	35, 36	29 N	13 E	Patent No. 1909	

The approximate locations of the above claims with reference to section, Township, and Range lines are shown on the map entitled "Figure 5. Claim Map, Moly or Questa Mine, Molybdenum Corporation of America, Taos County, New Mexico," attached hereto and made part hereof.

The Operator is the owner of the mining claims.

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EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

ANNEX II

(Article 10. Changes and Added Provisions.)

(a) Annex II is added to the items listed in Article 1 as a part of this contract.

(b) In Article 6(b), the period "10 years" is changed to "15 years." 16

(c) A Special Agreement Concerning Royalty is added as follows:

Notwithstanding the certification provisions of Article 6, and with no further action required on the part of the Government, the Operator, as principal if the Operator is the producer or as surety if the Operator is not the producer, shall pay to the Government a royalty on any production, regardless of where it comes from, that is transported through any shaft, winze, raise, crosscut, drift, or other working to the cost of which the Government has contributed, or any portion of said workings, for the same period as is described in Article 6(b)(2) of the contract and pursuant to the terms of Article 6(c) et seq. However, in no event shall more than one royalty be due on or paid on the same production.

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

EXHIBIT A

Description of the Work

General Provisions

The object of this project is to explore for deposits of molybdenum ore by means of diamond drilling, drifting, and crosscutting.

The Government will not contribute to the cost of a diamond drill hole that bottoms less than AX size, or to one that is not completed, excepting individual holes where the Government, in writing, waives these provisions because of unforeseen drilling conditions. Drill holes shall be cemented and drilled out or reamed and cased as necessary.

All drifts and crosscuts shall be timbered as necessary, and shall be not less than 5 feet by 7 feet in cross section clear of the timber. Drill stations shall be of sufficient size to permit breaking the drill rods in at least 10-foot sections.

Mineralized core shall be split over 10-foot sections. In mineralized areas the drifts and crosscuts shall be sampled by cutting a continuous 5-foot horizontal channel approximately three inches wide and one inch deep along one wall. In case it is impractical to cut a continuous 5-foot channel along the same wall, the other wall may be sampled opposite the interval where the channel cut was interrupted and the two samples combined.

The Operator shall have one-half of the mineralized core and one-half of each channel sample assayed for MoS_2. The remaining half of the core shall be stored with the non-mineralized portion of the core in boxes identified as to hole number, with markers placed in the core sections to show the depths represented; and the remaining half of each channel sample shall be stored in a suitable container properly identified as to the location where it was procured in the drifts or crosscuts. The stored core and channel samples shall be kept available for Government inspection and possible use, and the Operator may dispose of the stored portions of the core and channel samples only after prior Government approval.

All drill holes shall be logged, and the drifts and crosscuts shall be mapped geologically. The Operator's monthly progress report shall include maps or sketches showing the extent of the drilling, drifting, and crosscutting completed during the reporting period; the structures and the type of rock formations encountered; and the assay values of the samples. The report shall also include the drill hole logging records, together with the assay certificates of the core and channel samples.

The Operator shall employ sufficient personnel to provide the necessary technical services and the direction of the work. When possible, the work under the contract shall be on the basis of at least two shifts for each 24-hour period.

The location, direction, inclination, extent, and methods of sampling the work under the contract are subject to Government approval.

The work shall be performed in two stages. The Operator shall perform all the Stage I work, and as much of Stage II work as is approved in advance in writing by the Government.

Stage I (Areas A and B)

The work under Stage I consists of exploring the two areas designated as Area A and Area B on the map entitled "Figure 4. Plan and Cross Section Map Showing Recommended Exploration on the Second Tunnel Shaft Level, Questa Molybdenum Mine, . . .," attached hereto and made a part hereof.

The approximate locations, bearings, and extent of the exploratory drifts, crosscuts, and drill holes, and the inclinations of the latter, are also shown on Figure 4.

The work in the areas may be performed simultaneously as follows:

Project Area A

The work in Project Area A consists of drilling 16 holes from the locations shown on map Figure 4. However, if Crosscut No. 1 north has advanced beyond the 400 N. coordinate, the Government and Operator shall agree in writing as to new locations for holes Nos. 15 and 16.

It is estimated that 8 drill stations and not more than 8,000 feet of diamond drilling will be required to complete the 16 holes. No drill hole shall exceed 500 feet in depth and no hole shall penetrate more than 20 feet into rock that contains no visible molybdenum mineralization.

Project Area B

The work in Area B consists of drifting, crosscutting, and drilling as follows:

From the west face of the Second Tunnel Shaft Level at the time work under this contract begins, continue the tunnel westward to about coordinate E90 shown on map Figure 4. From this point a hole shall be drilled approximately horizontal to the west to a depth of about 500 feet.

At approximately coordinate E440 in the above-described west-trending tunnel, a crosscut shall be driven in a north direction to approximately coordinate N340. From this point a diamond drill hole shall be drilled approximately horizontal to the north to a depth of about 500 feet.

It is estimated that to complete the exploratory work in Areas A and B will require the cutting of 8 drill stations amounting to 115 lineal feet of raises, drifts, and/or crosscuts; 9,000 feet of diamond drilling; 1,000 feet of drifting and crosscutting (exclusive of drill stations); 1,000 feet of timbering; and 1,100 sample analyses for MoS_2 content. However, if this estimate is too low, then with previous written Government approval, requirements of work and their costs may be transferred from Stage II with a corresponding reduction in that stage.

Stage II (Area B)

The work under Stage II shall be limited to exploring Area B. The work will not be approved by the Government unless the face of the Second Tunnel Shaft Level is in rock containing visible molybdenum at the termination of Stage I, or unless the westward-bearing diamond drill hole from its face penetrates rock containing visible molybdenum.

The work consists of extending the Second Tunnel Shaft Level westward to approximately coordinate W. 300 shown on map Figure

4. At about coordinates E 40 and W 300, crosscuts shall be driven in both north and south directions to explore for possible contacts of the granite and overlying "Green rock" or volcanics.

Favorable areas disclosed by work under Stage I and Stage II in this Area B shall be further explored by not more than 19,500 feet of diamond drilling.

Under Stage II of this contract, not in excess of 19,500 feet of diamond drilling with 250 feet of drifts, crosscuts, and/or raises for drill stations; 6,160 feet of drifting and crosscutting (exclusive of drill stations); 6,160 feet of timbering, shall be performed; nor more than 3,177 samples analyzed for their MoS_2 content.

Fixed Unit Costs

Stage I - Areas A and B

Diamond drilling, 9,000 feet @ $5.00/ft.	$ 45,000.00	
Reaming and casing, or cementing and drilling out drill holes, 500 feet @ $1.00/ft.	500.00	
Drill stations: 115 lineal feet of drifts, crosscuts, and/or raises @ $44.43/ft.	5,109.45	
Drifts and crosscuts, 1,000 feet @ $44.43/ft.	44,430.00	
Timbering drifts and crosscuts (as needed), 1,000 feet @ $2.70/ft.	2,700.00	
Chemical analyses for MoS_2 content of 1,100 samples @ $3.00/sample	3,300.00	
Estimated Total Cost Stage I		$101,039.45

Stage II - Area B & A

Diamond drilling, 19,500 feet @ $5.00/ft.	97,500.00	
Reaming and casing, or cementing and drilling out drill holes, 1,000 feet @ $1.00/ft.	1,000.00	

Drill stations: 250 lineal feet of drifts, crosscuts, and/or raises @ $44.43/ft.	$ 11,107.50	
Drifts and crosscuts, 6,160 feet @ $44.43/ft.	273,688.80	
Timbering drifts and crosscuts (as needed), 6,160 feet @ $2.70/ft.	16,632.00	
Chemical analyses for MoS_2 content of 3,177 samples @ $3.00/sample	9,531.00	
Estimated Total Cost Stage II		$409,459.30

S U M M A R Y

Estimated Total Cost Stage I	$101,039.45	
Estimated Total Cost Stage II	409,459.30	
Estimated Total Cost of Project (rounded)		$510,500.00
Government Participation @ 50%		$255,250.00

This Indenture, Made the 14th. day of February in the year of our Lord one thousand nine hundred and thirty nine , between J. B. Carman and Bertha W. Carman, his wife

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

D.M.E.A. 4568

of the County of Taos and State of ~~Colorado~~ New Mexico, parties of the first part, and MOLYBDENUM CORPORATION OF AMERICA, A Corporation

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Witnesseth, That the said parties of the first part, for and in consideration of the sum of one & no/100 Dollars, in currency of the United States of America, to them in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have granted, bargained, sold, remised, released and forever quit-claimed, and by these presents do grant, bargain, sell, remise, release and forever quit-claim, unto the said party of the second part, and to its successors ~~heirs~~ and assigns

All the following unpatented lode mining claims situate in Red River Mining District, County of Taos, State of New Mexico, i.e.-

Rhyolite #1 Lode Mining Claim which was located on the 30th. day of September, A. D. 1934 and the location notice of which was filed for record in the County Clerk's Office at Taos, County of Taos, State of New Mexico, on the 28th. day of December, A.D. 1934 in Book F-15, Page 37 of Mining Records of said County.

Rhyolite #2 Lode Mining Claim which was located on the 30th. day of September, A.D. 1934, and the location notice of which was filed for record in the County Clerk's Office at Taos, County of Taos, State of New Mexico, on the 28th. day of December, A.D. 1934 in Book F-15, Page 37-38 of Mining Records of said County.

Rhyolite #3 Lode Mining Claim which was located on the 30th. day of September, A.D. 1934 and the location notice of which was filed for record in the County Clerk's Office at Taos, County of Taos, State of New Mexico, on the 28th. day of December, A.D. 1934, in Book F-15, Page 38 of Mining Records of said County.

Granite Lode Mining Claim which was located on the 27th. day of April, A.D. 1935 and the location notice of which was filed for record on the 15th. day of July, A.D. 1935 in the County Clerk's Office at Taos, County of Taos, State of New Mexico in Book F-15, Page 101 of Mining Records of said County.

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Together With all the dips, spurs and angles, and also all the metals, ores, gold and silver bearing quartz, rock and earth therein, and all the rights, privileges and franchises thereto incident, appendant and appurtenant, or therewith usually had and enjoyed; and also all and singular the tenements, hereditaments and appurtenances thereto belonging, or in anywise appertaining, and the rents, issues and profits thereof, and also all the estate, right, title, interest, property, possession, claim and demand whatsoever, as well in law as in equity, of the said partIES of the first part, of, in or to the said premises, and every part and parcel thereof, with the appurtenances.

To Have and to Hold, All and singular the said premises, together with the appurtenances and privileges thereto incident, unto the said party of the second part, its successors ~~heirs~~ and assigns forever.

In Witness Whereof, The said parties of the first part have hereunto set their hands and seals the day and year first above written.

SIGNED, SEALED AND DELIVERED IN PRESENCE OF

E. L. Snell
R. M. Eppley

J. B. Carman (Seal)
Bertha W. Carman (Seal)
(Seal)

NEW MEXICO
STATE OF ~~COLORADO~~,
County of TAOS } ss.

I,

in and for said County, in the State aforesaid, do hereby certify that

personally known to me as the person whose name subscribed to the annexed deed, appeared before me this day in person and acknowledged that signed, sealed and delivered the said instrument of writing as free and voluntary act, for the uses and purposes therein set forth.

Given under my hand and seal this day of A. D. 19

My Commission expires 19

Mary Johnson

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

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Rec'd

MINING DEED

FROM

J. B. Carman and Bertha W. Carman, his Wife

TO

MOLYBDENUM CORPORATION OF AMERICA

NEW MEXICO
STATE OF ~~COLORADO~~,
County of TAOS } ss.

I hereby certify that this instrument was filed for record in my office at 11 o'clock A. M., February 17th 1939 and is duly recorded in Book F-15 Page No. 266.

Mrs. Tom Oakeley
CLERK AND RECORDER.

By Grace Santistevan
DEPUTY.

FEES, $ 1.80

WHEN RECORDED RETURN TO

OUT WEST PRTG. & STATY. CO., COLORADO SPRINGS Z2049

Questa N.M. 11/27/56 @ 11:20 # 14805

QUITCLAIM DEED

MRS. JOAN GRESLIN and A. L. GRESLIN, for consideration paid, quitclaim to MOLYBDENUM CORPORATION OF AMERICA, a corporation, those certain unpatented lode mining claims situate in the Red River Mining District in the County of Taos, State of New Mexico, named and designated as

Aplite No. 1
Aplite No. 2
Aplite No. 3
Aplite No. 4
Aplite No. 5
Aplite No. 6
Aplite No. 7
Aplite No. 8
Aplite No. 9
Aplite No. 10

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.
D.M.E.A 4562

all of said mining claims having been located on the 5th day of September, 1956, and the location notices thereof filed for record and recorded in the office of the County Clerk of said county of Taos on the 8th day of October, 1956, in Book S-33 of the Mining Claim Records of said county, at pages 6-15, inclusive, and all of said claims being situate in Section 2, Township 28 North, Range 13 East, NMPM, according to projected Government survey.

WITNESS our hands and seals this 27th day of November, 1956.

Joan Greslin
A. L. Greslin

STATE OF NEW MEXICO)
COUNTY OF TAOS) SS

The foregoing instrument was acknowledged before me this 27th day of November, 1956, by Mrs. Joan Greslin and A. L. Greslin.

Helen M. Kentnor
Notary Public

My commission expires 11/4/58

Helen M. Kentnor, Notary Public
Taos County, Taos, New Mexico

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STATE OF NEW MEXICO)
COUNTY OF TAOS) SS.

This instrument was filed for record on the 27th day of Nov. A. D. 1956 at 11:20 o'clock A. M. and duly recorded in book A-52 Page 635-636.

Mrs Joan Vigil
County Clerk & Recorder
By Flora Martinez Deputy

Compared from Jmc
To L.C.
Indexed ✓

JOY MANUFACTURING COMPANY
900 WOODLAND AVENUE
MICHIGAN CITY, INDIANA

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EXECUTIVE OFFICES
HENRY W. OLIVER BUILDING
PITTSBURGH 22, PA.

April 18, 1957

Molybdenum Corporation of America
Empire, Colorado

Attention: Mr. J. B. Carman

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.
D.M.E.A 4568

Gentlemen:

As per your request, we set forth below prices and conditions covering a minimum of 2,500 feet of drilling for the exploration of molybdenum deposits underground near Questa, New Mexico.

On the condition that there will be a minimum of 2,500 feet of drilling, the price for drilling with AX fittings will be at the rate of $8.25 per ft. in holes not to exceed a depth of 500 ft. In addition to the per foot price, it would be necessary that you furnish core boxes if it is your desire to save cores of the drilling.

We would expect you to furnish us with an adequate amount of air and water at the drill, and furnish sufficient headroom so that the drill rods can be handled in at least 10 ft. sections. We would also expect you to move our drilling equipment in and out of the mine and furnish facilities for movement of the drilling equipment between holes.

In the event it becomes necessary to resort to reaming, casing or cementing of the drill holes, then this work would be performed at the rate of $70.00 per 8-hour shift plus cost of materials used up. Delays, if any on your part, for air and water or for any other reason would be at the rate of $70.00 per 8-hour shift.

The above prices are based on furnishing one air driven core drill complete with operating equipment and conducting the drilling operations on the basis of one or two 8-hour shifts per day and six days per week.

Since this information is requested for a DMEA loan which may require some time for processing, we cannot guarantee that we will be in a position to undertake this work at the time that the loan is approved, as this will be entirely dependent on what we have available in the way of equipment and crews at that time. We desire to assure you however, that every effort will be made to undertake this job for you, assuming of course, that the work is awarded to us.

DMEA
DEPARTMENT OF THE INTERIOR
APR 24 1957
REGION III
DENVER, COLORADO

JOY MANUFACTURING COMPANY
SHEET NO. TO

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

Thanking you for giving us an opportunity to quote on your requirements, we are,

Yours very truly,

JOY MANUFACTURING COMPANY

W. J. Pilarski, Mgr.
Contract Drill Division

WJP/et

MINERAL EXPLORATION - TEST BORINGS - GROUT HOLE DRILLING

GOLDEN DRILLING COMPANY

DIAMOND DRILLING CONTRACTORS

2301 EAST STREET

GOLDEN, COLORADO

PHONE CRESTVIEW 9-1371

W. E. MATTHEWS, MANAGER

DMEA
DEPARTMENT OF THE INTERI
APR 8 - 1957
REGION III
DENVER, COLORADO

March 23, 1957

Molybdenum Corporation of America
Empire
Colorado

Attention: J.B. Carman:

The Golden Drilling Company estimate for core drilling at rhe Moly Mine, 7½ miles east of Questa, Taos County, New Mexico. AX size bit, 2,500 feet of guaranteed drilling with air, water, and under-ground stations cut.

0 to 300 feet	$4.50 per foot
300 to 500 feet	6.00 per foot

Cementing and stand-by time at $7.50 per foot.

Reaming and casing will be at cost.

GOLDEN DRILLING COMPANY

W E Matthews

W.E. Matthews
WEM:plm

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MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

D.M.E.A 4568

GEORGE MARSHALL

DIAMOND DRILL CONTRACTOR

SURFACE AND UNDERGROUND WORK

MAXIMUM CORE RECOVERY

PHONE 40

IDAHO SPRINGS, COLORADO

March 13, 1957

DMEA
DEPARTMENT OF THE INTERIOR
APR 8 - 1957
REGION III
DENVER, COLORADO

Molybdenum Corp. of America
Empire, Colorado

Gentlemen:

I submit the following bid on at least 2500' of AX diamond core drilling (with the privilege of going EX if it becomes essential) for the drilling program you propose to do starting approximately June 15, 1957, at the Moly Mine near Questa, New Mexico. This drilling to be completed by September 15, 1957. Compressed air and core boxes to be furnished by you.

I will drill these holes at the following rate:

0 to 200'	$3.00 per foot
200 to 400'	3.50 per foot
400 to 500'	4.00 per foot

Should it become necessary to ream holes to extend casing farther in I will do this for $1.00 per foot.

Yours very truly,

George G. Marshall

George G. Marshall

GGM:tm

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MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

DMEA 4568

JOY MANUFACTURING COMPANY
1626 WAZEE STREET
DENVER 2, COLORADO
TELEPHONE KEYSTONE 4-6334

COAL MACHINERY DIVISION

DMEA
DEPARTMENT OF THE INTERIOR
APR 8 - 1957
REGION III
DENVER, COLORADO

March 18, 1957

Mr. J. B. Carmen
Urad Mine
Molybdenum Corporation of America
Empire, Colorado

Subject: Core Drilling Contract Inquiry, Questa, New Mexico

Dear Mr. Carmen:

Our Contract Core Drill Division has advised us that we will not be able to bid on your inquiry as we do not have the crews nor machines available.

We wish to thank you for asking us to bid on this core drilling, and trust that you will continue to ask us to bid as work arises.

Yours very truly,

JOY MANUFACTURING COMPANY

R. L. Frazer
Sales Engineer

RLF:LP

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500 FIFTH AVENUE
NEW YORK 18, N. Y.

DMEA 4568

OFFICIAL FILE COPY DMEA RECEIVED FEB 15 1957		
DATE	INITIALS	CODE
2-15	C	220
	Murphy	700

224 New Customhouse
Denver 2, Colorado

February 12, 1957

Memorandum

To: J. F. Shaw) w/c Revised Proposal
E. N. Harshman)

From: DMEA Field Team, Region III

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa claim) Taos County, New Mexico

Enclosed is a revised project proposal to the subject docket. The applicant submits this modified program as the result of discussion with our representatives.

With all other information already available, the examiners should have no difficulty reporting their findings at an early date.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosure

MHM:eh

cc: Sec. Op. Comm (2)) w/c revised proposal to be
Docket 4568) incorporated w orig. application
Chron.

Put maps in file pocket

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

DMEA
DEPARTMENT OF THE INTERIOR
FEB 11 1957
REGION III
DENVER, COLORADO

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DATE	INITIALS	CODE

February 7, 1957

United States Department of the Interior
Defense Minerals Exploration Administration
Bureau of Mines, Region III
224 New Customhouse Building
Denver 2, Colorado

Subject: D.M.E.A. 4568

Gentlemen:

Following discussion of this project with your representatives it appears that some clarification of the geological description, and a modification of the original exploration program are necessary.

This modification would be to divide the work into two stages, the second stage of which would depend upon the results of the first stage. If it were mutually agreed, after completion of the first stage, that the 2nd stage is warranted, then that stage would be brought under the proposed contract.

In addition to the original program this modification would include in the first stage a drilling program of the mineralized area on the second level already opened and a drilling program following the drifting of the second stage.

Description and details of these two stages of work are later included.

We supplement our description of our objectives in the original application (under 4 c) in stating that our wish to explore this area is based on not one but three geological deductions; based on thorough underground and surface examination and a knowledge obtained from long and extensive experience in mining the adjacent area to the east.

Following are the three exploration objectives:

(A) Exploration of the south flank of the now fairly well established westerly trending granite intrusive ridge, seeking ridges or rolls

United States Department of the Interior
Defense Minerals Exploration Administration
Bureau of Mines Region III
Denver 2, Colorado

Subject: D.M.E.A. 4568

on the flank the high points of which are considered favorable ore localities.

(B) Investigation of the porphyry-granite contact zone located due west of the present face of the 200 level, just east of Goat Hill Gulch (see map 2). We believe this contact zone should be explored both, to the south to reach the vicinity of the porphyry dike (Map 2) and to the north. The north work would explore the porphyry-granite contact zone in this area as well as the intrusive ridge.

Both north and south work would also give access to the glassy volcanics (Map 2) which may be favorable ore areas.

Included are three sketches illustrating the sub-surface relationship that may be expected between the granite and the porphyry.

Sketch I: Porphyry earlier than granite

Sketch II: Porphyry simultaneous with granite

Sketch III: Porphyry later than the granite.

As evidence that the porphyry can be mineralized, porphyry containing molybdenite appearing identical to that found on the surface (Map 2) has been found underground.

(C) Exploration to the north of the 200 ft level west drift, actual and projected, by crosscuts and drilling to investigate the crestal zone of the west bearing granite ridge. Work completed to date indicates that the ridge line area offers unusual possibilities for large, low grade molybdenite deposits.

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Bureau of Mines Region III
Denver 2, Colorado

Subject: D.M.E.A. 4568

As a guide to what may be expected of the continuity of the granite at more or less the 200 ft level on the latitude of the 200 ft level west drift, we are enclosing herewith an east-west vertical section made from underground information showing the trend of the granite-"green rock" contact from several hundred feet east of the shaft to the present face. It may be pointed out, that, though the granite may be found only intermittantly in the west drift of the 200 ft level or might disappear entirely over distances of several hundred feet it would not, appear conclusive that the granite had taken a steep dip to the west. We are, we believe, on the south flank of the granite ridge (see Map 1) near the contact, any rolls or changes in the dip of the granite or any block faulting of minor throw could quite markedly effect the position of the contact with respect to the fixed position of the 200 level west drift. We therefore consider the contact of the granite and volcanics at the latitude of the west drift probably will continue more or less at the 200 ft level elevation for some distance to the west. The location of the face of the 200 level west as of 2/1/57 is approximately 800 E. We would consider that there are good possibilities of this contact rising some place to the west as the drift west approaches the porphyry. (See Maps 2 & 3).

EXPLORATION PROGRAM STAGE I. Refer to Map 5 S

As work is now in progress both on the 2nd Tunnel Shaft Level or 200 ft level as designated above, west drift and No. 1 Crosscut north, it is necessary to estimate where these faces will be when and if an exploration contract is consummated. April 1st is therefore the assumed date when

United States Department of the Interior
Defense Minerals Exploration Administration
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Denver 2, Colorado

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D.M.E.A. participation will begin. The estimated locations of the faces of Crosscut No. 1 north and the west drifts as of April 1st, 1957 are designated on Map 5 S herewith. Also on Map 5 S are shown proposed drifting and core drilling under Stage I and the drifting under Stage II of the program. Drilling is not shown on the map but simply estimated in footage, as the amount considered necessary to explore the areas opened under Stage II drifting. Details of drilling under Stage II to be decided when information obtained from drifting is available.

(a) Continuation of Crosscut No. 1 north for 200 feet to approximately Coordinates 600 N and 1200 E. Drilling four 300 ft holes from this crosscut. (See Map 5 S). These holes to be stopped short of 300 feet when they consistantly show no molybdenite mineralization.

(b) By April 1, 1957, it is estimated that the west drift face will have reached Coordinate 600 E. (See Map 5 S).

Drive west drift approximately S 85° W 500 feet regardless of rock type. Then drill a 500 ft horizontal hole from the face of the west drift and on its course to Coordinate 400 W.

(c) Start Crosscut No. 2 north from the west drift at Coordinate 440 E when drifting in Crosscut No. 1 north is completed, about May 1, 1957. Drive 500 feet north and then drill 500 ft north from the face of this crosscut, regardless of rock type encountered.

(d) Drill the mineralized area between Coordinates 1000 E and 2000 E and 200 N to 400 S by 13 (500 ft maximum) holes as shown on Map 5 S.

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Denver 2, Colorado

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Any drill holes showing consistent lack of molybdenite mineralization to be stopped before 500 feet.

SUMMARY STAGE I WORK

	DRIFTING, FEET	DRILLING Max. Ft.	DRILLING Min. (est) Ft.
(a)	200	1,200	800
(b)	500	500	500
(c)	500	500	500
(d)	---	6,500	2,600
TOTAL STAGE I	1,200 feet	8,700 feet	4,400 feet

COST ESTIMATE:

DRIFTING: (Mill not operating) See Schedule/0, page 20 of original application under questions 6b, c and d.

DRILLING: An estimated cost including station preparation, core care, logging, sampling, assaying, power for drills and estimated bid by a contract driller. This estimate assumes concurrent drilling and drifting.

	Minimum	Maximum
1,200 feet Drifting at $54.00	$64,800.00	$64,800.00
8,700 feet Drilling at $8.00		69,600.00
4,400 feet Drilling at $8.00	35,200.00	
TOTALS	$100,000.00	$134,400.00

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

 February 7, 1957

United States Department of the Interior
Defense Minerals Exploration Administration
Bureau of Mines Region III
Denver 2, Colorado

Subject: D.M.E.A. 4568

STAGE II Ref. Map 5 S

The following program outlined under this stage would necessarily be tentative as to the exact location of the work; however, we believe this to be a reasonable estimate of the total amount of work required.

DRIFTING	SUMMARY STAGE II WORK	DRILLING AREA	Feet
West	410 ft.		
Crosscut No. 3 N	1,000 ft.	Crosscut No. 4 S	6,500
Crosscut No. 4 S	1,650 ft.		
Crosscut No. 4 N.	1,300 ft.	Crosscut No. 4 N	6,500
C Cut #4 S, E. Lat.	500 ft.	Crosscuts Nos.	
C Cut #4 S, W. Lat.	500 ft.	2 N, 3 N, & 5 N	6,500
Crosscut No. 5 N	400 ft.		
Crosscut No. 5 S	400 ft.		
Total Drifting	6,160 feet	Total Drilling	19,500

COST ESTIMATE STAGE II

Drifting cost estimate is based on costs with "Mill Not Operating" as shown in Schedule 10 Page 20 of original application under questions 6b, 6c and 6d. With 2/3 of the work in the period from 10/1/57 to 10/1/58 and the balance in the 10/1/58 to 10/1/59 period.

Drilling cost estimate is based same as under Stage I.

6,160 feet Drifting at $56.00	$344,960.00
19,500 feet Drilling at $8.00	156,000.00
Estimated Total Cost Stage II	$500,960.00

Yours very truly,

J. B. Carman

J. B. Carman
Molybdenum Corp. of America, Empire, Colo

JBC:r

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

224 New Customhouse
Denver 2, Colorado

December 6, 1956

RECEIVED
DEC 10 1956
D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA Aid (Molybdenum) Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico

Enclosed are the original and two copies of the subject application in the amount of $471,803.30. One copy of the application is being retained in our file.

The application has been well prepared, and it appears to be in proper order.

W. M. Traver

W. M Traver

Enclosures

ME-103
(Revised April 1952)

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

Form Approved.
Budget Bureau No. 42-R1035.2.

DEC 5 1956
REGION III
DENVER, COLORADO

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

RECEIVED
DEC 10 1956
D.M.E.A.

Not to be filled in by applicant

Docket No. 4568
Metal or Mineral Molybdenum
Date Received 12-10-56
Estimated Cost $471,803.30
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address. Molybdenum Corporation of America, 500 Fifth Avenue, New York 18, New York Incorporated in the State of Delaware. President: Marx Hirsch, 500 Fifth Ave., New York Exec. Vice Pres. Emil A. Lucas, Washington, Pa. Treas & Asst. Sec'y: William B. Kuntz, 500 Fifth Ave., New York. Sec'y: James S. Crawford, First Nat. Bank Bldg., Pittsburgh, Pa.

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. Not Applicable

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Seventeen (17) Unpatented Mining Claims, Approximately 340 Acres, Red River Mining District, Taos County, New Mexico.

(*b*) State any mine name by which the property is known. Moly or Questa Mine

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Owner

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. Not Applicable

(*e*) If you own the land, describe any liens or encumbrances on it No liens or incumbrances

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Page 2

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. Page 3

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. Page 3 under 4 (a)

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. Page 4

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. Page 7

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power. Page 7

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore
We wish to explore for molybdenite

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. **Page 8**

(*c*) The work will start within **10** days and be completed within **24** months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. **Page 9**

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). **Not Applicable**

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. **Pages 10 to 20**

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. **Pages 12 to 20**

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. **Pages 18, 19**

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. **Not Applicable**

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. **Not Applicable**

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. **Page 20**

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above. **20**

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

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? **Yes**

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated **December 3**, 195**6**

Molybdenum Corporation of America
(Applicant)

By J. B. Carmen

Molybdenum Corporation of America

Empire, Colorado

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—66551-1

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

C O N T E N T S

FORM MF-103		1 PAGE
SUPPORTING INFORMATION		20 PAGES
GEOLOGICAL REPORTS:		
1 - -	4/30/54	10 PAGES
1 - -	8/14/56	8 PAGES
MAPS		9

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

3. (a)- Mining Claims

Name of Claim	Range	Twnshp	Section	Recorded in County Clerk's Office, Taos, New Mexico. Book	Page
Rhyolite No. 4	13E 13E 13E	29N 29N 28N	35 36 2	F28	232
Rhyolite No. 5	13E 13E	29N 28N	35 2	F28	233
Rhyolite No. 6	13E	29N	35	F28	234
Rhyolite No. 7	13E	29N	35	F28	250
Rhyolite No. 8	13E 13E	29N 28N	35 2	F28	251
Rhyolite No. 9	13E 13E	29N 28N	35 2	F28	252
Rhyolite No. 10	13E 13E	29N 28N	35 2	F28	253
Aplite No. 1	13E	28N	2	5-33	6
Aplite No. 2	13E	28N	2	5-33	7
Aplite No. 3	13E	28N	2	5-33	8
Aplite No. 4	13E	28N	2	5-33	9
Aplite No. 5	13E	28N	2	5-33	10
Aplite No. 6	13E	28N	2	5-33	11
Aplite No. 7	13E	28N	2	5-33	12
Aplite No. 8	13E	28N	2	5-33	13
Aplite No. 9	13E	28N	2	5-33	14
Aplite No. 10	13E	28N	2	5-33	15

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

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4. Physical Description (a & b)

Mining of molybdenum sulphide by the Molybdenum Corporation of America has been, until lately, continuously in progress since 1923 during which time some 30 miles of workings have been made and from which has been recovered approximately 20 million pounds of molybdenum sulphide (MoS_2). This has come from contiguous claims to those under consideration herein, situated to the east of the land stated in this application.

This production came mostly from openings from Sulphur Gulch (see Map No. 2) Then, following downward a southwest ore trend, a lower tunnel from the main Red River Canyon was driven 5,000 feet to intersect the lowest workings, which at that time, had reached this tunnel level.

From the tunnel, a winze 200 feet deep was sunk about 4,500 feet north of the portal and two levels driven westerly from the winze. Map No. 4 herewith shows the workings and stopes from the Tunnel winze or Tunnel Shaft as it is locally known. Exhaustion of the ore bodies below the tunnel stopped production.

Since that time, about 1953, exploration mainly to the west has been in progress; first on the 1st level below the tunnel and later, on both the 1st and 2nd Tunnel shaft levels; and during the past year, on the 2nd Tunnel Shaft level only. This work is now in progress. Equipment and facilities for this operation are, of course, available and in use.

Many of the old workings are inaccessible; but as may be assumed from the foregoing, the area in question herein is accessible for examination and also some of the older workings.

As stated, no production is forthcoming from any part of the mine and no ore reserves are considered available. Also, no other exploration work is, for the present planned other than that covered by this application.

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

4. Physical Description (a & b) continued

We have a 50 tons per day capacity mill one mile from the Tunnel (mentioned above), and office, houses, school house and boarding house. The mill is presently in operation treating custom copper ore.

4. c Geologic Features

We are embodying in this application geological reports by Dr. Robert H. Carpenter, consulting geologist and assistant professor of geology at the Colorado School of Mines, Golden, Colorado. These reports supplement previous extensive geological data compiled by Dr. John W. Vanderwilt, now president of the Colorado School of Mines. The latter, however, were especially concerned with the area to the east where production resulted from mining veins; while the Carpenter reports refer specifically to the land which we wish to explore, and describe the geological features involved in this application.

As to mineralization, the only metal of value found in paying quantities has been molybdenite; this has been accompanied by some pyrite containing a small amount of copper insufficient to be saved economically, and not detrimental to the molybdenite concentrate after milling. Gangue minerals are quartz, feldspar, biotite and on occasion, rhodochrosite and fluorspar.

MAP LIST:

No. 1 An isometric projection of the area in question expounding the intrusive ridge theory and the present 2nd level workings extending in the granite westward from the Tunnel Shaft.

No. 2 A geological topographic map, factual. Ref. Carpenter Report 8/14/56.

No. 3 Claim Map to be superimposed on Map No. 2.

No. 4 Showing old mine workings just east of the present 2nd level work giving an idea of previous ore occurrence.

No. 5 Working map of area showing general location, which may be locally altered due to conditions encountered, of work contemplated in this application.

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NEW YORK 18, N. Y.

4. (c) MAP LIST continued

No. 6 Assay map showing car sample results up to 10/15/56.

No. 7 and 7A Geological plan 2nd Tunnel Shaft level. Referred to Carpenter Reports, giving an idea of the contact irregularities.

No. 8 Section B-B. Intrusive ridge, Carpenter's Report, 4/30/54.

The first Carpenter report is dated 4/30/54 and the second, 8/14/56.

At the time of the first report, exploration to the west on the 2nd shaft level had been started with the idea of finding similar ore trends to the ones already mined along the south flank of the granite, see Map No. 4. Previous efforts on the levels above to prospect this contact west had resulted in failure due to these west workings running into the overlying "green rock" formation. The objective up to this time had been to encounter high grade veins which occurred on or near the contact. (The average grade of ore from this mine up to 1946 was 5% MoS_2).

As noted in Carpenter's report of 4/30/54, the idea of an intrusive ridge with a westerly trend was brought out. (Map No. 8). This added new incentive to westward exploration in addition to seeking ridges with north-south axes on the south flank of the granite intrusion.

By the time of the second Carpenter report, work had progressed westward in the granite on the main drift west and some exploration of the contact to the south of the main drift had been done (Map No. 7). No small, typical high grade veins that appeared commercial had been found but multiple fracturing in brittle aplitic granite had been encountered. At this time the possibility of finding large low grade bodies of ore seemed possible. Then the sampling of all muck from these headings was started. (Map No. 6).

Surface geology disclosed a large porphry intrusion to the west with branches reaching out to the south east. (Map No. 9 and Carpenter's report

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NEW YORK 18, N. Y.

4. (c) continued

8/14/56. This is considered pre-mineral as what Carpenter considers identical porphyry found in the mine workings has contained molybdenite along rock fractures. Thus the area cut by the porphyry branches near the large porphyry intrusion and the east flank of this porphyry would probably be broken country amenable to circulation of mineralizing agents. This structure, with the porphyry mass on the west and the sickle shaped porphyry to the southeast, could form a trap favorable to mineral deposition. (See Map No. 2).

In addition to the probabilities of structures favorable to ore deposition, the possibilities or probabilities of molybdenite mineralization sufficient to make ore are considered.

In general, there are two affirmative features:

1. A production of 20 million pounds of MoS_2 from the mine.

2. The finding of molybdenite, (not commercial) in Goat Hill Gulch workings and the first gulch to the west beyond Goat Hill (Map No. 2); In Dan Cisneros' property in the granite, just west of Goat Hill; In the main granite mass just east of Questa where cut by Bear Canyon; and on the southwest side of this granite mass opened by work done by the Molybdenum Corporation in Horseshoe Gulch which opens into Red River just west of the Questa Ranger Station.

Specifically, the showings opened on the 2nd Tunnel Shaft level (Map No. 6), give substance to ore expectancy.

To summarize our reasons for wishing to explore this region:

1. Exploration to the west and south will lead to a favorable area within reach of the outside. This locality is accessible by a 3,000 foot (more or less) tunnel from the main Red River Canyon. Such a tunnel would be

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500 FIFTH AVENUE
NEW YORK 18, N. Y.

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4. (c) continued

essential as a working outlet and, connected with the present tunnel via the 2nd level, provide ventilation.

2. Extending the 2nd level westward will parallel the main ridge axis and crosscut lateral ridges on the south flank of the granite.

3. Crosscutting north from the west drift will explore the east-west ridge giving opportunity for later drilling to determine the location of the ridge and the extent of mineralization vertically as well as in plan.

We consider we have, based on past production, immediate showings and geological deductions, a molybdenum prospect worth persuing.

4. (d) Accessibility of Project:

The present working tunnel is directly on State Highway No. 38 which is paved to a point one mile west.

It is 35 miles from Jaroso, Colorado, on the San Luis Valley Southern R.R., which connects in 30 miles with the Alamosa, Colorado branch of the Denver & Rio Grande Western R. R.

4. (e) Availability of Manpower etc.,:

Manpower is sparingly available at Questa, New Mexico, 6 miles to the west. We have had trouble getting men just when we needed them. Material, supplies are available from the usual sources. Native timber is used. Adequate equipment is in use, including power generating equipment. The R.E.A. Kit Carson Electrical Cooperative has a line running by the Tunnel portal. This source is used to a limited extent as a standby for lights and pumping. It has not, however, been sufficiently economical or dependable as to service to be made the main power source. Adequate water is available from Red River running by the Tunnel portal.

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NEW YORK 18, N. Y.

5. (b) Description of Proposed Work:

It is proposed to continue the west drift on the 2nd level S 65° West, plus or minus, to coordinate 300 W (Maps No. 3 & 5), a distance, depending on the advance up to the time of approval of this application, estimated at 950 feet. This will, as described under 4-c of this application, crosscut any ridges on the south flank of the intrusive granite.

From this (see Maps No. 3 & 5) it is proposed to drive 1,650 feet south at coordinate 300 W to the most favorable structural and geographic area, (Maps No. 2 & 3). This south crosscut will prospect the east fringe of the porphyry intrusion (see Maps No. 2 & 3) and terminate near the granite, green rock contact at this point.

It is further proposed to drive east-west laterals from this main south drift to explore the "most favorable" area, amounting to an estimated 1,000 feet. These are indicated only on Map No. 3.

In addition, Cx No. 1 N is to be continued 600 feet to prospect the east-west striking intrusive ridge.

Cx No. 2 N -- 800 feet along the west drift from Cx No. 1 N is to be driven 600 feet north and its south counterpart an estimated equal distance or to the contact wherever this may be.

Cx No. 3 N, an intermediate crosscut between 1 and 2, 600 feet north and 400 feet south.

Cx No. 4, a north continuation of the 1,650 foot drift to the south, (see Map No. 5) 1,300 feet to prospect the porphyry fringe to the north.

Cx No. 5, an intermediate crosscut between No. 3 and 4, to go north-south a total of 800 feet.

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5. (b) Description of Proposed Work, continued

The impossibility of outlining definite locations and distances of the exploration plan with the underground information now at hand can readily be understood. We believe, however, that the amount of work and general locations of it are substantially correct; but particular locations and extent will necessarily vary from time to time, as conditions warrant. It is assumed that these variations of plan shall be agreeable to both parties of the contract. Thus, we have proposed a total of 8,500 feet of work.

5. (d) Operating Experience:

The applicant has continuously operated in this immediate area for 33 years and the direct supervisor of the project has 20 years experience in the employ of the applicant.

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6. Estimate of Costs. 6. (a) Not applicable

6. (b) Labor, Supervision and Consultants

	Wages Rate/Hour	Salaries	Fees
CONSULTANTS			
Geologist			$100.00/day
Surveyor			60.00/day
Legal			300.00
OFFICE AND SUPERINTENDENCE			
1 Superintendent		$9,676.80	
Accountant (1)		6,339.24	
1 Assayer No	$ 1.70		
3 Watchmen-Janitors No	1.40		
1 Cook No	1.25		
1 Mine Foreman		6,144.00	
1 Mine Boss (Night) Yes	2.00		
3 Shopman	1.62		
2 Hoistmen	1.595		
1 Timberman	1.595		
1 Motorman	1.56		
1 Motorman Helper	1.40		
1 Timberman Helper	1.40		
7 Trammers	1.40		
1 Miscellaneous Mine Labor	1.40		
6 Miners	per foot--Contract Labor, see piece work schedule below:		

The following rates apply to groups of 2 miners each group for standard drift or crosscut, 5 x 7 feet, per linear foot:

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6. (b) Labor, Supervision and Consultants, continued

For the first 70 linear feet in any one month, the rate per foot is $ 7.65

71 to 80 feet	8.15
81 to 90 feet	8.65
91 to 100 feet	9.15
101 to 110 feet	10.15
111 feet and up	10.65
Timbering, per set	5.00 ✓
Switches, each	12.00
Slabbing, per linear foot	3.00

why increased? Bonus for all

6. (b and c) Labor, Operating Materials. Explanation of Schedules

Schedule 1. Costs with Mill operating, applicable to 10/1/57
Cost based on actual 1955 and 1956 costs adjusted to wage increases as of 10/1/56 and estimated increases in materials cost.

Schedule 1a Detail of Insurance Costs applicable to Schedule 1.

Schedule 2. Costs, Mill NOT operating, applicable to 10/1/57.
Same items as Schedule 1, condensed.

Schedule 2a Detail of Insurance Costs applicable to Schedule 2.

Schedule 3. Method of calculation of labor cost increases due to hourly wage increases under labor contract, i.e., 5 cents per hour 10/1/57 and 5 cents per hour 10/1/58. Piece work prices and salaries bear equivalent increases.

Schedule 4. Costs, Mill operating. Period 10/1/57 to 10/1/58.

Schedule 5. Costs, Mill NOT operating. Period 10/1/57 to 10/1/58.

Schedule 6. Costs, Mill operating. Period 10/1/58 to 10/1/59.

Schedule 7. Costs, Mill NOT operating. Period 10/1/58 to 10/1/59.

Schedule 8. Operating Equipment.

Schedule 9. Cost Summary and Total Cost.

Schedule 10. Summary of Contingent Costs.

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6. (b & c) Labor, Materials etc.

SCHEDULE 1

COSTS WITH MILL OPERATING, APPLICABLE TO 10/1/57
Overhead costs in part borne by mill operating

% Mine share of total with Mill Operat'g	ACCOUNT	Material and Other Expense--Not Labor 1st Shift	Material and Other Expense--Not Labor 2nd Shift	Labor incl. Superintend'ce Office & Mine Foremen 1st Shift	Labor incl. Superintend'ce Office & Mine Foremen 2nd Shift
	GENERAL OVERHEAD				
75	Pre-employment examination	$ 145.00			
75	Extra Compensation expense	50.00			
100	Geological & Prof. Services	500.00			
100	Legal, account of Labor	300.00			
100	Mine Surveying & Materials	510.00			
		$ 1,505.00			
50	OFFICE & SUPERINTENDENCE		Supt. ½, Off. ½, Mine Foreman	$14,150.55	$ 5,008.00
50	Telephone	74.00			
50	Stationery	191.00			
50	Office Heating & Repairs	116.00			
5.8	Auxiliary Lighting	55.00			
50	Sup't Travelling Expense	360.00			
50	Boardinghouse	402.00		1,864.00	
50	School House, Fuel & Repairs	382.00		13.00	
50	Housing Repairs	113.00		177.00	
100	Miscellaneous	280.00			
50	Analytical Work	250.00		1,110.00	
50	Watchmen, Janitors, Heating			5,484.86	
		$ 2,203.00		$22,799.41	$ 5,008.00
100	MINE LAMPS & OTHER LIGHTING Inside and Out. 40 Lamps @ $1.51/month. Rental for 60 months adjusted to 6 year lamp life	410.00	$ 370.00		
		$ 410.00	$ 370.00		
	MINE BLDGS. DUMPS, ETC.				
	Fuel (Heating)	485.00	48.00		
	Miscellaneous	52.00	47.00		
		$ 537.00	$ 95.00		
	COMPRESSED AIR PLANT			4,056.48	4,056.48
	Repairs	90.00	81.00		
	Fuel Oil, @ $0.1651/gal	2,290.00	2,061.00		
	Lubrication	182.00	182.00		
		$ 2,562.00	$ 2,324.00	$ 4,056.48	$ 4,056.48

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6. (b & c) SCHEDULE 1 continued

ACCOUNT	Material and Other Expense--Not Labor 1st Shift	2nd Shift	Labor incl. Superintend'ce Office & Mine Foremen 1st Shift	2nd Shift
ELECT. GENERATING PLANT				
Repairs	$ 250.00	$ 225.00		
Fuel Oil @ $0.1651/gal	1,915.16	1,724.00		
Lubrication	529.00	476.00		
	$ 2,694.16	$ 2,425.00		
BLACKSMITH			$ 4,056.48	
Sharpener	450.00	405.00		
Tools	33.00	30.00		
Fuel	82.00	72.00		
Miscellaneous	75.00	67.00		
	$ 640.00	$ 574.00	$ 4,056.48	
TUNNEL HAULING			7,411.84	
Car & Locomotive Repairs	242.00	218.00		
Locomotive Batteries	560.00	503.00		
Lubricants	77.00	70.00		
	$ 879.00	$ 791.00	$ 7,411.84	
HOISTING			4,074.23	4,074.23
Repairs and Upkeep	150.00	135.00		
	$ 150.00	$ 135.00	$ 4,074.23	$ 4,074.23
PUMPING				
Repairs and Upkeep	37.00	33.00		
TIMBERING (Includes upkeep timbering in Tunnel and Approach Workings			7,499.48	
Timber, Lumber and Nails	4,126.00	1,927.00		
Tools	73.00	66.00		
	$ 4,199.00	$ 1,993.00	$ 7,499.48	
DIRECT EXPLORATION, CONTRACT DRIFTING		Based on 2024' Wk	22,039.26	17,000.00
Based on 2249' Work (Track @ $1.075/ft, see Det's	2,417.90	2,176.00		
(Pipe-1"-30¢; 2"-60¢ plus (7% for Ftgs, Tot: $.963/ft	2,165.80	1,949.11		
(Vent Tube & Acc. @ $1.28/ft	2,876.72	2,590.72		
Rock Drills, Upkeep & Reps	2,388.00	2,149.00		
Drill Steel, Not made up	722.00	650.00		
Mucking Machine Parts	303.00	270.00		
Hoses and Small Tools	290.00	261.00		
Lubricants	117.00	105.00		
Miscellaneous Supplies	85.00	76.00		

Continued

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6. (b & c) SCHEDULE 1 continued

ACCOUNT	Material and Other Expense--Not Labor 1st Shift	2nd Shift	Labor incl. Superintend'ce Office & Mine Foremen 1st Shift	2nd Shift
DIRECT EXPLORAT'N continued				
Powder @ $22.70/cwt 5.755#/'	$ 2,938.00	$ 2,644.00		
Fuse, 24.2 ft/ft, 54,430 ft @ $12.40/M	659.00	593.00	) Based on	
Caps, 3.94 caps/ft, 8861 caps @ $21.50/M	190.00	172.00	) 2024 feet work	
Above based on 2249 ft work				
	$15,154.42	$13,635.83	$22,039.26	$17,000.00
TRAMMING			14,022.40	14,022.40
Mine Car Repairs	160.00	160.00	3,505.60 Misc Mine Labor	
	$ 160.00	$ 160.00	$17,528.00	$14,022.40
GRAND TOTALS (Pages 12 -14)	$31,130.58	$22,535.83	$89,465.18	$44,161.11

MATERIALS:	1st Shift	2nd Shift	Total
Add 5% Increase of Actual Materials $53,666.41 - $1,505.00)	$31,130.58	$22,535.83	$53,666.41
	1,481.28	1,126.79	2,608.07
Totals	$32,611.86	$23,662.62	$56,274.48
LABOR:	$89,465.18	$44,161.11	$133,626.29
Insurance, See Schedule 1a			13,634.30
Total Labor Cost			$147,260.59
	TOTAL COST--SCHEDULE 1		$203,535.07

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TRACK AND TIMBER DETAILS REFERRED TO IN SCHEDULE 1

TRACK COSTS

Rails $200.00 per ton 12 lb.

Ties $ 86.00 per M ft 2½ x 6 x 3 ft

Spikes .185 per lb. 1169/200 lbs; 5.845 spikes per lb. 3/8 x 3½

Bolts .25 per lb. 5.185 bolts per lb ½ x 1¾

Splices .52 per pair

FOR 15 FEET TRACK

2 lengths 12lb Rail 120lb @ 10cents / lb.		$12.00
6 Track ties, 2½ x 6 x 3'--22.5 B/F @ $86.00		1.935
24 Track Spikes 3/8 x 3½	-- 4.1 lb @ 18½ ¢/lb	.7585
4 Track Bolts ½ x 1¾	-- .77 lbs @ 25¢ /lb	.193
2 Pr Splice Bars	-- 62 cents per pair	1.24
	Total	$16.1265

PRICE OF TRACK PER FOOT: $ 1.0751

TIMBER COSTS

REQUIRED: 8 inch SIZE ROUND FOR 1 SET TIMBER

1 piece 12' 4"		
1 piece 6' 2" Total 18' 6" @ $0.205		$3.75
16 pieces Lagging 5" Split, 6' 2" long, 98.7' @ $0.065/ft		6.42
8 Wedges @ $0.05 each		.40
1/4 lb Nails		.02
	PRICE PER SET TIMBER	$10.59

Footage: 1st Shift 2249 feet, 45% Timbered: $\frac{.45 \times 2249}{5}$ equals 202 sets

2nd Shift 2024 feet do do $\frac{.45 \times 2024}{5}$ equals 182 sets

TIMBER REQUIRED FOR 4273 feet work: 384 SETS

1956: Powder consumed in 1687 feet drift 5.61867 lbs per foot

Fuses do do do do 24.38 feet per foot

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6. (b & c) Labor Materials etc.

SCHEDULE 1 a

DETAIL OF INSURANCE COSTS APPLICABLE TO SCHEDULE 1

2 Shifts	Gross Labor	Labor Less 6.1% O.T.	Rate %	Amount
Office	$ 3,169.62	$ 2,976.28	0.268	$ 7.98
Watchmen-Janitors	6,784.86	6,320.98	2.675	170.96
Boardinghouse	1,864.00	1,750.30	2.933	51.34
Mining (All Other)	121,807.81	114,377.53	8.502	9,724.39
COMPENSATION INSURANCE	$133,626.29	$125,475.09		$ 9,954.66
EMPLOYMENT INSURANCE Portion of Payroll ($3000) Applying	94,300.00		1.000	943.00
OLD AGE BENEFITS Portion of Payroll ($4200) Applying	121,626.46		2.250	2,736.64
TOTAL INSURANCE ETC. (SCHEDULE1)				$13,634.30

SCHEDULE 2 a

DETAIL OF INSURANCE COSTS APPLICABLE TO SCHEDULE 2

2 Shifts	Gross Labor	Labor, Less 6.1% O. T.	Rate %	Amount
Office	$ 6,339.24	$ 5,952.55	0.268	$ 15.95
Watchmen-Janitors	13,495.72	12,672.48	2.675	338.99
Boardinghouse	3,728.00	3,500.59	2.933	102.67
Mining (All Other)	126,647.68	118,922.17	8.502	10,110.76
COMPENSATION INSURANCE	$150,210.64	$141,047.79		$10,568.37
EMPLOYMENT INSURANCE Portion of Payroll ($3000) Applying	102,254.00		1.000	1,022.54
OLD AGE BENEFITS Portion of Payroll ($4200) Applying	134,403.34		2.250	3,024.08
TOTAL INSURANCE ETC. (SCHEDULE 2)				$14,614.99

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6. (b & c) Labor, Materials etc.

SCHEDULE 2

CONTINGENCY: COSTS WITH MILL NOT OPERATING, APPLICABLE TO 10/1/57.

ACCOUNT	Material and Other Expense--Not Labor 1st Shift	2nd Shift	Labor incl. Superintend'ce Office & Mine Foremen 1st Shift	2nd Shift
GENERAL OVERHEAD	$ 1,505.00			
OFFICE & SUPERINTENDENCE	1,482.00			
Superintendent			$ 9,676.80	
Office (Accounting)			6,339.24	
Mine Foremen			6,144.00	$ 5,008.00
Auxiliary Lighting	600,00			
Boardinghouse	804.00		3,728.00	
Schoolhouse	764.00		26.00	
Housing	226.00		254.00	
Analytical Work	500.00		2,220.00	
Watchmen--Janitors			10,969.72	
	$ 5,881.00		$ 39,357.76	$ 5,008.00
MINING (See Schedule 1 unchanged)	27,422.58	22,535.83	66,691.77	39,153.11
Grand Totals	$ 33,303.58	$22,535.83	$106,049.53	$ 44,161.11

TOTAL MATERIALS (Both Shifts)	$ 55,839.41
Add 5% Increase in Actual Materials(55,839.41-1,505)	2,716.72
Total for Materials	$ 58,556.13
TOTAL LABOR (Both Shifts)	$150,210.64
Insurance, See Schedule 2 a (Page 15)	14,614.99
Total for Labor	$164,825.63
TOTAL COSTS--SCHEDULE 2	$223,381.76

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6. (b & c) Labor, Materials etc.

SCHEDULE 3

INCREASES IN LABOR COSTS

Calculation of increase in labor costs due to increase of 5 cents per hour on 10/1/57 and 10/1/58 and increase 10/1/58 to 10/1/59. To be added to labor costs under SCHEDULES 1 and 2, Basis: 12 months.

Labor costs increase 5 cents per hour 10/1/58
Piece work increases same proportion
Salaries increase in same proportion

BASIS OF CALCULATION: From actual payroll records, past overtime additions amount to 6.1% average; man days, 295 per year.
295 plus 6.1% equals 313 straight time days, paid per year.
313 days x 8 hours x $0.05 equals $125.20 per year per man.

	INCREASE 10/1/57 - 10/1/58		
	Men Employed	Per Man	12 Month Total
Mill Operating	30.5	$125.20	$3,818.60
Mill NOT Operating	34.0	$125.20	4,256.80
	INCREASE OVER 10/1/57.		10/1/58 - 10/1/59
Mill Operating	30.5	$250.40	$7,637.20
Mill NOT Operating	24.0	250.40	8,513.60

SCHEDULE 4

COSTS MILL OPERATING - PERIOD 10/1/57 TO 10/1/58

Increase over SCHEDULE 1: 5 cents per hour labor and 5% materials.

Materials	Labor	Insurance*	Labor & Ins.	Total	Cost per Foot 12 Mo. Footage 4273
$59,012.95	$137,444.69	$13,714.49	$151,189.38	$210,202.33	$ 49.19

* Insurance figured as 10% of gross payroll, also applies to SCHEDULES 5, 6 & 7

SCHEDULE 5

CONTINGENCY: MILL NOT OPERATING--PERIOD 10/1/57 TO 10/1/58.

Increase over SCHEDULE 2: 5 cents per hour labor and 5% on materials

Materials	Labor	Insurance	Labor & Ins.	Total	Cost per Foot 12 Mo. Footage 4273
$61,397.13	$154,467.44	$15,446.74	$169,914.18	$231,311.31	$ 54.13

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6. (b & c) Labor, Materials etc.

SCHEDULE 6

COSTS MILL OPERATING - PERIOD 10/1/58 TO 10/1/59

Increase over SCHEDULE 1: 10 cents per hour labor. No increase in material over SCHEDULE 5

Materials	Labor	Insurance	Labor & Ins.	Total	Cost per Foot 12 Mo. Footage 4273
$59,012.95	$141,263.29	$14,126.33	$155,389.62	$214,402.57	$ 50.18

SCHEDULE 7

CONTINGENCY: MILL NOT OPERATING - PERIOD 10/1/58 TO 10/1/59

Increase over SCHEDULE 2: 10 cents per hour labor. No increase in material cost over SCHEDULE 5

Materials	Labor	Insurance	Labor & Ins.	Total	Cost per Foot 12 Mo. Footage 4273
$61,397.13	$158,724.42	$15,872.43	$174,596.66	$235,993.79	$ 55.23

6. (d) Operating Equipment SCHEDULE 8

1 Sirroco Fan (American Blower Corp) with 5 HP Electric Motor

1 Motor Pump L-R No. MNV 1½, 125 GPM 20 HP Motor

1 Motor Pump L-R No. MVH 15, 125 GPM 15 HP Motor

26 Ore Cars, Card S-18

10 Ore Cars, Card Z-20

1 Double Drum Hoist, Stearns-Roger, 30 HP Electric Motor and Starting Equipment

10 Side Dump 3 ton Ore Cars (Tunnel)

1 Battery Locomotive, 3 ton, General Electric

1 Steel Cutter Size 500 Ingersoll-Rand

1 Cameron Air Pump No. 3, 6 x 3 x 7 VPB

1 Drill Sharpener No. 54 Ingersoll Rand

1 Shank and Bit Punch No. 45 SP Ingersoll-Rand

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6. (d) Operating Equipment SCHEDULE 8 continued

1 Oil Furnace No. 7F Ingersoll-Rand ✓

1 Multivane Grinder Size 4V4 IngersollRand ✓

2 D-17000 Cat Engines, 160 HP each ✓

2 Generators General Electric Model 50 891, 80 KW ✓

1 Switchboard Panel for above ✓

1 Diesel Air Compressor Comp. 17 x 19, 16½ x 13½ x 19, 93.5 HP POC 2 GOC ✓

1 Air Compressor, 2-Stage IR Model 90 Type 40; 100 HP West. Mo tor & Start. Equip ✓

1 Fairbanks Morse Engine 6 HP, 450 RPM ✓

1 Air Compressor, Fairbanks-Morse, 3¾ x 3-3/8 HP 475 RPM 250 lbs. ✓

1 Steam Pump, Marsh 4 x 6 x 6 ✓

1 Western Electric Motor, Type FT 954, 12½ HP 1800 RPM ✓

1 Western Electric DC Generator Model 40 A 861; 175 V, with Panel and Switches ✓

1 MSA Mine Lamp Charger 250 Volts, 2 Amps No. 9861 ✓

40 MSA Model P Cap Lamps ✓

1 Tungar Rectifier 115 V-230 V DC ✓

1 Band Saw, 2" x 15' Sidney Mach Tool Co. with ½ HP Electric Motor ✓

1 Cut-off Saw, 24" Arm Suspension with 5 HP Motor ✓

3 Man-trap Cars, Card ✓

2 Rocker Shovels, Eimco Model 12B OK

4 DA-30 Drifters, Ingersoll-Rand OK

Equitable Monthly Rental of Equipment is put at $600.00, making total under contract $14,400.00 ≠ O.K.

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6. (b,c,d) Labor, Materials & Equipment

SCHEDULE 9 SUMMARY OF COSTS

MILL OPERATING

By SCHEDULE No.	Period	Footage	Cost per Foot	Total Cost
1	3/1/57 to 10/1/57	2492	$ 47.63	$118,693.96
4	10/1/57 to 10/1/58	4273	49.19	210,188.87
6	10/1/58 to 3/1/59	1735	50.18	87,062.30
8	Equipment Rental, Pages 18 & 19			14,400.00
TOTAL AND AVERAGE		8500	$ 50.63	$430,345.13

6. (h) Contingencies

SCHEDULE 10 SUMMARY OF CONTINGENT COSTS

MILL NOT OPERATING

By SCHEDULE No.	Period	Footage	Cost per Foot	Total Cost
2	3/1/57 to 10/1/57	2492	$ 52.26	130 281.76 ~~$135,265.76~~
5	10/1/57 to 10/1/58	4273	54.13	231,297.49
7	10/1/58 to 3/1/59	1735	55.23	95,824.05
8	Equipment Rental, Pages 18 & 19			14,400.00
TOTAL AND AVERAGE		8500	$ ~~56.09~~ 55.51	~~$476,787.30~~ 471,803.30

6. (e) Rehabilitation and Repairs-----Not Applicable

6. (f) New Buildings, Improvements, Installations-----Not Applicable

6. (g) Miscellaneous---Shown in SCHEDULES 1 & 2

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

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D.M.E.A.

A SUMMARY OF THE GEOLOGY OF THE QUESTA MINE
APRIL, 1954

To:
Mr. J. B. Carman
MOLYBDENUM CORPORATION OF AMERICA
Empire, Colorado

APRIL 30, 1954
ROBERT H. CARPENTER
GOLDEN, COLORADO

Molybdenum Corporation of America
500 FifthAvenue
New York 18, New York

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ILLUSTRATIONS

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Cross Section B-B'	Plate 4.

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

A SUMMARY OF THE GEOLOGY OF THE QUESTA MINE
APRIL, 1954

INTRODUCTION

At the request of Mr. J. B. Carman, Western Manager for the Molybdenum Corporation of America, the writer has completed a brief geologic examination of the Questa Mine. This mine is located on Red River, 8 miles east of the town of Questa, on the western flank of the Sangre de Christo Mountains in northern New Mexico. A preliminary reconnaissance was completed November 27th and 28th, 1953; the accessible underground workings below the tunnel level were mapped with the aid of an assistant during the period December 19th to January 2nd; and the surface geology and the geology of the accessible workings on and below the tunnel level were studied briefly during the period April 16th to 19th, 1954.

PURPOSE OF THE INVESTIGATIONS

The purpose of completing these studies was to analyze the immediate exploration possibilities. The geologic data made available by development work completed since Dr. John W. Vanderwilt's investigations of 1934, 1936, and 1940 are described below.

SUMMARY OF THE REGIONAL GEOLOGY

The Red River drainage from the town of Red River westward to Questa, New Mexico appears to have developed along a major zone of weakness in the Sangre de Cristo Mountains. Younger rocks appear to have been depressed several thousand feet below the older rocks which are exposed on the adjacent ridges to the north and south.

Several granite intrusive bodies have intruded along this zone, all of which may be connected with depth; and extensive areas of rock alteration resulting from the migration of hot waters from a deep seated source, perhaps the granite, are also present along this zone. Scattered mineralization is evident along the length of the zone, and strong molybdenite mineralization developed at the Questa mine on the west flank of one of the granite intrusive bodies.

GEOLOGY OF THE QUESTA MINE

General Statement

The ore at the Questa mine occurs in narrow veins along the western edge of the extensive Questa mine stock. The veins are restricted to the very upper fringe of the granite, and to the narrow transition zone between the granite and the highly altered sediments and volcanics of the country rock.

In the opinion of the writer, they probably developed as a result of cracking during the cooling and solidification of the granite fringe perhaps aided by still active intrusive stresses in the liquid part of the granite body at depth. Ore bearing solutions then permeated these fractures to develop the ore and gangue minerals in the veins. If the mineralization proves to be considerably later than the granite the above theory is not valid. In this case the veins probably were developed by regional stresses.

Rock Types and Intrusive Relationships on the Lower Levels

The rock types of the region are well described by Vanderwilt in his reports on the Questa geology on file with the Molybdenum Corporation

of America. Consequently, the description of the rock types will be restricted to those occurring in the lower levels of the mine.

Three types of granite are present below the tunnel level. The "normal" granite is gray to buff, equigranular rock consisting of interlocking quartz, feldspar, and biotite phenocrysts ranging from 1 to 5 mm. This type of granite is believed to represent the type present at depth within the granite body, and has been only partly albitized, that is, granite which has been replaced by the soda rich plagioclase mineral, albite. The second type of granite also occurs in the upper fringe zone, and in texture grades toward a porphyry. It consists of phenocrysts or crystals of quartz, feldspar, and biotite embedded in a matrix of smaller crystals or in some instances a dense matrix. This type probably represents a chilled zone along the contact which did not have time to fully crystallize, or perhaps dikes of granite magma which penetrated outward ahead of the granite body as it intruded upward. The third type consists of fine grained granite similar in appearance to aplite which appears to have intruded and flooded the contact zone, replacing the normal granite, granite porphyry, and the sediments and volcanics (?) of the country rock.

Little is known of the specific types included in the altered country rock adjacent to the granite intrusive body except that on the surface both the sedimentary rocks and volcanics were identified in the contact zone. The former consist of impure sandstones and shales; the latter andesites and perhaps some included rhyolites. In the lower levels these country rock types have been intensely altered by the addition of chlorite, silica, and other alteration products to an

unidentifiable, relatively incompetent, greenish rock in which vein development is restricted.

Porphyritic andesite dikes crosscut the green rock complex near the granite contact both on the 100 and 200 levels. On the surface dikes of similar composition intrude the granite of the contact zone, and thus are younger than the granite intrusive body. They appear to be younger than the mineralization as well.

Below the tunnel level there frequently is a transition zone of a few inches to one hundred feet or more along the contact. The green rock or altered country rock has been intruded by and in some instances flooded by the aplitic type granite to develop a hybrid type rock consisting partly of green rock, partly of dense, fine grained granite, and partly of a combination of the two. It, locally, at least, is sufficiently competent to allow restricted vein development.

Mineralization and Vein Development in the Lower Levels of the Mine

In the upper workings the veins developed along an east-west jog in the contact as discontinuous structures roughly parallel to the granite-country rock contact, and as mineralized fractures trending parallel to but dipping more steeply than the southerly dipping contact. The dips on the latter are northerly in some instances.

The veins in the lower workings consist of banded quartz, feldspar, biotite, and molybdenite with later fluorite and rhodochrosite. They appear to have developed best roughly perpendicular to the crestal zone of an intrusive ridge line which plunges southwesterly. This ridge has formed on the western edge of the east-west jog in the granite contact described above. As in the upper workings, the ore formed in veins roughly parallel to the contact and in veins steeper than the contact (Plate 3).

Although the ore has been exceptionally good grade in most veins, the tonnage available from a specific vein is small. Each structure usually dies out within a few hundred feet along trend, and seldom extends through more than one level interval on dip; furthermore, the width of each vein seldom averages more than three feet. In addition, the ore mined has formed in distinct shoots along the veins. Those parts of the vein between shoots usually is too narrow or of too low grade to be mined.

With these conditions it is difficult to develop sizeable ore reserves ahead of production unless the rate of discovery of new veins is high.

EXPLORATION POSSIBILITES

It is the opinion of the writer that the ore-bearing solutions which formed the veins in the fractured fringe of the granite intrusive body may have followed one of two access routes from a source at depth. They may have migrated directly upward from the depths of the granite body, or they may have migrated laterally for some distance along the crestal portions of intrusive ridges. Such ridges may connect the granite body of the mine with those to the west near Questa, and southwest at the Columbine camp.

There is little evidence that the solutions travelled directly upward. At depth the steeply dipping veins appear to die out, and molybdenite mineralization in the form of joint and fracture fillings decreases to neglegible amounts downward away from the contact.

It would appear that the migration has been along the fracture system which developed along and across the contact zone of the intrusive ridges perhaps from some major source area to the west

or southwest. This proposed source area could be a pre-granite fault zone which failed after the intrusion of the granite to allow for deep-seated fracturing into the granite body during the period of cooling and concentration of ore-bearing solutions. The fault zone may then have acted as a channelway for the upward migration of solutions from the depths of the granite body to the cracked crestal zone of the intrusive ridges with subsequent lateral migration along the crestal zone into the mineralized area of the mine. This hypothesis is pure conjecture, but may serve to explain the presence of the high-grade molybdenite veins of the mine, and could offer a long range prospecting guide.

The intrusive ridge shown on Plates 3 and 4, plunges to the south-west at approximately 17 degrees in the lower levels. Unless the plunge lessens with depth, exploration costs will be high downward along this ridge line and exploration in this direction may not be feasible except on a long range basis.

Westward along the Tunnel level the contact appears to be relatively flat for the granite is present along the west crosscut 1200 to 1300 feet west of the shaft. There is a possibility that a second intrusive ridge may be present in that region, this time trending more nearly due west than the ridge described above. If such a ridge does exist, it may be fractured, and may have acted as a collecting area for the ore-bearing solutions much as in the case of the mine area proper. Exploration costs would be relatively low in this area as headings can be driven from the western extremities of the Tunnel level, the 100 level, and the 200 level. The region to the west and north of these workings is extensive and unexplored.

It is the opinion of the writer that the above area should be

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investigated to determine if a flat-lying or gently plunging intrusive ridge or high is present, and whether or not ore-bearing veins have developed along its contact fringe.

CONCLUSIONS AND RECOMMENDATIONS

1. In a regional sense, several granite intrusive bodies appear to be aligned along the east-west trending zone. The western-most is situated in the vicinity of Questa, and the eastern-most near the settlement of Red River.

2. The mineralization developed to date is located along the western fringe of one of these granite bodies. Some 20 million pounds of molybdenum have been extracted from veins along this contact zone.

3. The veins have developed along an east-west jog in the contact zone in the upper workings of the mine. In the lower workings the veins have developed along the western edge of this same jog where it assumes the feature of a plunging, intrusive ridge line.

4. Vein development is limited to the contact fringe of the granite. Most of the veins die out upward into the altered country rock, and also downward into the granite body. Some veins follow the contact in dip, and are roughly parallel to the crestal plunge of the plunging ridge.

5. The granite contact appears to have flattened markedly in the western extremities of the lower levels. Contact type granite is present, according to personal observations and survey notes 1200 to 1300 feet west of the tunnel. It is possible that a granite intrusive ridge may connect the granite intrusive body of the mine with the one east of Questa, the crest of which may be situated approximately on or immediately below the tunnel level. If such a ridge line is present at this general horizon it would be a favorable area for mineralization, and thus exploration.

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6. It is recommended that exploration be continued in the lower levels of the Questa mine particularly westward and northwestward from the present workings to determine the presence of a possible intrusive ridge or granitic high, and possible mineralization localized along the crest or flanks of such a ridge or high.

Respectfully submitted,

(s) R. H. Carpenter

RHC:rh

R. H. Carpenter, Consulting Geologist

r

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

RECEIVED
DEC 10 1956
D.M.E.A.

A CLARIFICATION OF THE GEOLOGIC FEATURES WEST OF THE QUESTA MINE TAOS COUNTY, NEW MEXICO

SUBMITTED TO:

MR. J. B. CARMAN
MOLYBDENUM CORPORATION OF AMERICA
EMPIRE, COLORADO

BY:

ROBERT M. CARPENTER

AUGUST 14, 1956

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

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BROAD EXPLORATION ANALYSIS	2.
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CONCLUSIONS	5.
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ILLUSTRATIONS

GENERALIZED GEOLOGIC-TOPOGRAPHIC MAP
OF THE AREA WEST OF THE QUESTA MINE

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

A CLARIFICATION OF THE GEOLOGIC FEATURES WEST OF THE QUESTA MINE TAOS COUNTY, NEW MEXICO

INTRODUCTION

At the request of Mr. J. B. Carman, Western Manager of the Molybdenum Corporation of America, the writer, assisted by Mr. J. M. Meinicke, completed a study of the surface geologic relationships of the area immediately west of the Questa Mine in Taos County, New Mexico. These investigations were carried out during the period June 25th through July 2, 1956.

The objective of the study was to clarify the geology pertinent to exploration planning to the west and north of the mine workings. The area examined includes the territory west of Sulphur Gulch and east of the Capulin Gulch drainage, an east-west distance of about 3 miles, and northward from Red River to the upper fringes of Goat Hill and Sulphur Gulches.

The terrain is rugged with deeply incised canyons; the relief ranges up to 2,000 feet. The accompanying generalized geologic-topographic map illustrates the physical features and the basic geology of the area.

SUBDIVISION OF ROCK TYPES

In 1940, Dr. John W. Vanderwilt completed a reconnaissance study of the geology of the area in question. In his report, dated September 20, 1940, he lists four major rock subdivisions, the older schists and gneisses, sedimentary and andesitic rocks designated as the green rock series, a rhyolite series, and the sodic or albite granite designated as red rock.

The distribution of these four distinct groups is shown on the accompanying map. The gneisses and schists occupy the region to the southeast, the green rocks the central portion, the rhyolitic the western, and the pink rock or granite the eastern fringe. All four types have been described in some detail by Dr. Vanderwilt in his reports. The boundaries, except for the granite, must be considered approximate and subject to interpretation because of poor exposure and hydrothermal

alteration.

BROAD EXPLORATION ANALYSIS

An exploration analysis of the area west of the Questa Mine along the granite intrusive ridge line, now proved to be continuous for some 2,000 feet (by underground work) west of the Questa Mine drain tunnel, involves an interpretation of intrusive relationships, and subsequent structural developments. Experience has shown that ore occurs along the upper fringes of the intrusive body near the contact with the overlying intruded rocks. This does not eliminate the possibility of ore occurring at depth within the granitic rocks or even in the country rocks.

The configuration of the intrusive ridge line may have been dependent on a) block faulting or local fracturing in the older rocks, on b) the ability of the granite magma to assimilate specific rock types such as the sedimentary rock, the andesitic or the rhyolitic, or, c) on weakening of the rocks by hydrothermal alteration activity prior to the actual intrusion of the granitic rocks at the present horizon of the intrusive ridge.

Evidence for block faulting on the surface is difficult to establish because of poor exposure and extreme hydrothermal alteration. The entire intrusive ridge line area may represent an area of strong block faulting with volcanics and sediments down-dropped adjacent to the older gneisses and schists. Porphyry dikes probably represent the filling of pre-intrusive fault zones and zones of shattering by magma. "Pre-intrusive" is used in a relative sense as being at the present horizon of the mine workings and not at great depth where intrusive activity might have been coexistant.

There is little evidence related to the degree of assimiliation of the various types of country rock by the granitic intrusive mass except that the granite stock at the Questa Mine and the granite body immediately east of the town of Questa appear to have been localized in areas consisting largely of

sediments and andesitic volcanics. On the other hand, the Goat Hill porphyry has intruded into the glassy volcanic rocks. Structural intersections with accompanying shattering may have controlled the site of these intrusive masses rather than rock types.

It is probable that hydrothermal alteration effects proceeded the granitic mass as a front as the mass intruded the country rock of the Questa Mine region. The glassy, rhyolitic volcanics and the andesitic rocks of the Goat Hill Gulch drainage and the upper part of the Sulphur Gulch area have been intensely altered by hot waters. The Goat Hill porphyry intrusive shown on the accompanying map has intruded these highly altered rocks, possibly as a result of their being more susceptible to hydrothermal activity than the older rocks.

No detailed mapping was attempted on the surface in the area west of the Questa Mine. The writer and Mr. Meinicke concentrated on a study of the porphyry intrusives in the area because of the possibility of a close genetic relationship between the porphyries and the granitic intrusives underground. In the mine the granite occurs in a wide variety of textural types from the equa-granular granite consisting of interlocking crystals of quarts, feldspar, and mica to the porphyritic type with occasional crystals embedded in a very finely crystalline to dense matrix. All have been flooded locally by "aplitic" solutions or magma high in albite (sodic plagioclase) along the contact fringes of the intrusive.

The porphyritic type "granite" which occurs underground is almost identical to the porphyry of Goat Hill and of small plugs and dikes which are illustrated on the accompanying map. It is entirely possible that this intrusive represents an early phase of the intrusive sequence of granitic rocks in the area, followed by the albitic (soda-feldspar) granite of the Questa Mine area and the intrusive ridge now under investigation in the western fringe of the mine workings. There is also the possibility that the porphyry may be later than the granite or that they developed

at the same time with differences in texture controlled by local environments. In any case, the aplitic solutions which formed a brittle, favorable rock for mineralization, were introduced later than either the porphyry or the granite, for both have been flooded. From evidence available the writer prefers the first alternative.

EXPLORATION TARGET AREA

Exploration recommendations to explore westward along a possible granite intrusive ridge, have, thus far, proved to be justified. This ridge has been proved for a distance of approximately 2,000 feet west of the Questa Mine drainage tunnel at a horizon approximating the 200 foot level below the tunnel. Mine workings have explored the southern fringe of the ridge; the true configuration of its crest has yet to be established by exploration to the north.

The westernmost penetration of the exploration heading on the 200 level is shown on the accompanying map by the double red circle. The workings are being driven due west. The immediate target is the eastern fringe of the Goat Hill porphyry intrusive body to the north of the dike which projects to the east from the southeast corner of the body. There is a possibility that this contact fringe may represent a zone of shattering and fracturing sufficiently extensive to have allowed for the development of a low grade molybdenite ore body. No exact targets can be outlined at this writing because of a lack of information regarding structural features, the effects of hydrothermal alteration on the rocks, the degree of flooding by aplitic solutions or magma, the configuration of the porphyry contact with the country rocks, and of course, the degree to which ore bearing solutions had access to a specific, shattered mass of aplitic granite or other favorable host rocks.

If the porphyry contact begins to rise on a gentle slope from the area of the present exploration heading upward to the contact on the surface immediately

east of Goat Hill Gulch, the exploration heading, if driven ahead on the 200 level would soon be well below the contact. If the contact is steep, as indicated by surface exposure, the porphyry mass proper would not be intersected for some 2,500 feet west of the present face. As long as encouraging showings of molybdenite occur on the 200 level the writer would prefer to see the heading driven on westward on this level. Underground diamond drilling, raises and sub-levels, or surface geophysics may be utilized to establish the contact of the intrusive ridge as exploration proceeds westward.

On the surface, the target area is occupied by glassy, banded volcanic rocks believed to be rhyolitic in composition together with occasional beds of andesitic tuffs and possibly flows. It is difficult to predict what effect the glassy rocks may have had in localizing ore. If relatively unaltered, they may have been very favorable; if extremely altered prior to mineralization little ore can be expected in them, but in such case they may have acted as an effective dam to ore solutions introduced into brittle, aplitic granite, provided aplitic solutions or magma were introduced into the granite or porphyry of the target area.

Nothing is known of the northern side of the granite ridge. There is no information as to whether the ridge is sharp in its cross section profile, or whether it is broad and extensive. Strong shattering may have developed to the north, particularly in the vicinity of the porphyry intrusive center in the headwaters of Sulphur Gulch. Then again, no areas favorable for ore development may be present. It is the writer's opinion that exploration to the north should await results of the work to the west.

CONCLUSIONS

1. The intrusive granite ridge appears to extend westward from the Questa Mine drain tunnel for some 2,000 feet, and may connect with the Goat Hill porphyry intrusive body.

2. Appreciable mineralization occurs along the contact fringe of this intrusive ridge in the form of fissure and crack fillings of molybdenite.

3. An extensive porphyry intrusive body has been delineated by surface mapping. It occupies the crestal portion of Goat Hill and extends to the east of Goat Hill Gulch to the first north-south trending ridge.

4. Extensive hydrothermal alterations appears to be closely related to the fringes of the intrusive porphyry of Goat Hill and the smaller intrusive bodies of the upper reaches of Sulphur Gulch.

5. A possible favorable target area for exploration is situated immediately east of the Goat Hill porphyry body and north of the easterly-trending dike which projects easterly from the southeast corner of the body.

RECOMMENDATIONS

1. The present exploration heading on the 200 level should be continued westward toward the Goat Hill porphyry contact.

2. The configuration of the ridge line of the granite intrusive body should be delineated by underground diamond drilling or excavation, or surface geophysical studies.

3. The exploration of the northern fringe of the granite intrusive body should be delayed until additional information is available.

4. If a favorable contract can be worked out with Geophysical Services, Inc., they should be engaged to complete shallow seismic studies on the surface to aid in the delineation of the configuration of the granite intrusive ridge and the eastern flank of the Goat Hill porphyry body.

Respectfully submitted,

Robert M. Carpenter

August 14, 1956

Docket

PROJECT SUMMARY REPORT

By: F. M. Murphy January 12, 1961

1. DMEA-4568 (Molybdenum)
Contract Idm-E1094

Operator - Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

Operator's Property Rights -

The claims lie in T. 28-29 N., R. 13 E., Taos County, New Mexico.

Owned by Operator - 28 claims, Rhyolite Nos. 2 thru 10; Aplite Nos. 1 thru 10; Sargent Nos. 6 and 7; Phyllis Nos. 5 and 7; and Summit Nos. 4, 5, 7, 8, and 16.

Claims held under Warranty Deed-Lien and Subordination Agreements, December 8, 1959, by Dotson Minerals Corporation, 440 Park Street, Socorry, New Mexico - Buena Vista Nos. 1, 2, 3, 4, 6, and 7; Torbert No. 2; Renegade.

2. Contract dated May 31, 1957.

The project work started June 15, 1957, and was completed shortly before the contract was terminated June 30, 1960.

Amendments -

No. 1 - October 4, 1957, changed the description of work in Area B.

No. 2 - January 6, 1958, allows taking sludge samples in lieu of core in bad ground; allows extending shaft level westward and certain crosscuts.

No. 3 - June 23, 1959, combines exploration in areas A and B; adds five Summit claims.

No. 4 - November 25, 1959, extends contract period to 37 months and royalty period to 16 years. Adds Buena Vista, Torbert, Renegade, and Phyllis claims. Also contains psuedo-certification if work is not started and completed.

2. Contract (continued)

Final Reports -

Operator's - received October 20, 1960. The report is considered acceptable by OME.

Field's - received December 27, 1960.

Work Authorized and Completed -

	Authorized Work			Completed Work	
	Units	Unit Cost	Estimated Total Cost	Units	Accepted Costs
Stage I					
Diamond Drilling	9,000	$ 5.00/ft.	$ 45,000.00	7,507 ft.	$ 37,535.00
Cementing and redrilling or reaming and casing	500	1.00/ft.	500.00	500 ft.	500.00
Drill Stations	115	44.43/ ft.	5,109.45	71 ft.	3,154.53
Drifts and crosscuts	1,000	44.43/ft.	44,430.00	1,000 ft.	44,43[illegible]
Timbering drifts and crosscuts	1,000	2.70/ft.	2,700.00	932 ft.	2,516.[illegible]
Chemical analysis	1,1[illegible]	3.00 ea.	3,3[illegible]	942	2,82[illegible]
Total cost of Stage I			$191,039.45		$ 90,9[illegible]1.93
Stage II					
Diamond Drilling	19,5[illegible]	$ 5.00/ft.	$ 97,500.00	13,912 ft.	$ 69,560.00
Cementing and redrilling or reaming and casing	1,000	1.00/ft.	1,000.00	1,000 ft.	1,000.[illegible]
Drill Stations	250	44.43/ft.	11,107.50	250 ft.	11,107.50
Drifts and crosscuts	5,[illegible]	44.43/ft.	273,685.80	4,77[illegible] ft.	212,242.11
Timbering drifts and crosscuts	5,1[illegible]	2.70/ft.	16,032.00	3,195 ft.	8,634.60
Chemical analyses	3,1[illegible]	3.00 ea.	[illegible],531.00	2,391	7,173.00
Total costs of Stage II			409,459.30		$ 30[illegible],717.21
Total costs of Stage I			191,039.45		9[illegible],961.93
Total cost of project			1[illegible]		$ 4[illegible],679.14
Total Vest participation at [illegible] percent			$[illegible]		$ 20[illegible],339.5[illegible]

4. Certification, dated January 13, 1961.

5. Excerpts from final reports:

The Moly or Questa Mine is on the west flank of the Taos range of the Sangre de Cristo Mountains in northern New Mexico. Precambrian granitic and metamorphic rocks that are overlain by Tertiary volcanic rocks make up most of the western part of the range.

The Tertiary rocks in the vicinity of the Questa mine occupy a broad structural trench that trends eastward across the Taos range. The southern boundary of the trench, which is approximately along the Red River below the mine, is marked by a series of east-trending normal faults that dip steeply northward. This down-faulted zone is probably the major control for the emplacement of a soda granite stock, with which the molybdenum deposit seems to be genetically related. The stock is elongated in a westerly direction from its outcrop at the original mine workings in Sulphur and Blind Gulches. These workings, along the contact of the andesite and soda granite, exploited a series of molybdenite-quartz veins with grades ranging from 5 to 30 percent MoS_2 from 1923 to 1953 when known high-grade ore bodies were exhausted.

In a much thicker band, that ranges up to a thousand feet in thickness, molybdenite is dispersed throughout the fractured and altered rocks in quartz veinlets and on fault and fractured surfaces as "paint." These fractured and altered rocks were explored during the contract period. The full thickness, attitude and lateral extent of the molybdenite-bearing ground has not been determined, although exploration (including former mine development) has been conducted over a vertical range of more than 2,000 feet and over an area of one mile square. During the project the Operator did much additional drifting, crosscutting, and some surface drilling at no expense to the Government.

As a result of the work, the Operator calculates indicated reserves of 250,936,376 tons of ore, containing 0.243 percent MoS_2, distributed in three blocks. The Field Team assumes one block 5,000 feet on a side by 1,000 feet thick containing 2.5 billion tons averaging better than 0.20 percent MoS_2. Within this large low-grade ore body the presence of two small blocks of ore averaging 0.5 percent MoS_2 are indicated.

6. Conclusion:

The project work, as well as the additional exploration work performed by the Operator, was well planned and carried out with little lost time. Although the Operator plans additional

6. Conclusion (continued):

work in the area, it is quite possible that the two small higher-grade ore bodies will be mined in the near future. However, it will probably require much time and capital to exploit the large deposits of low-grade molybdenite-bearing material.

F. M. Murphy

FMMurphy/gla
1-12-61
cc to: Docket
Director's Reading File
Frank E. Johnson
Mr. Murphy
Chron

MME Form 17
Mar. 59

OFFICE OF MINERALS EXPLORATION

WORK COMPLETED ANALYSIS

☒ Certified — After final audit or review report is received, prepare in duplicate. File original in official docket. Send copy to Code 210.

Operator: Molybdenum Corporation of America
Actual Cost: X
State: New Mexico - Taos County
Agreed Unit Cost:
Final Report of Audit:
Commodity: Molybdenum
Docket No.: DMEA-4568
Final Report of Review: 1/5/61
Contract No.: Idm-E 1094

Type of Work (Use these categories only)	Authorized by Contract and Amendments		Completed and Paid for		Net cost after sale of Gov't. Property
	Units	Cost 1/	Units	Cost 1/	
Drifting & Crosscutting	7,160	337451	5777	267,823	267,823.11
Raising					
Shafts					
Winzes					
Drilling (Specify) Diamond Core mostly BX	28,500	144,000	21,419	108,595	108,595.00
Surface Excavation					
Underground Excavation Drill stations		16,217		14,262	14,262.03
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) assays		12,831		9,999	9,999.00
Totals		510,499		400,679	2/ 400,679.14

1/ Round off to dollars.
2/ Net cost total must agree with final report of audit or review.

Prepared by J. M. Murphy Date 1/10/61

52616

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

DEC 22 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 29 1958

DATE	INITIALS	CODE
12/29	C	220
"	Murphy	700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

Enclosed are the following pertaining to the drilling of hole No. 30, proposed by the Operator by letter of December 11, 1958:

1. Tow copies of a joint memorandum, dated December 17, 1958, from R. U. King, Geologist, Geological Survey and Carl Belser, Mining Engineer, Bureau of Mines.

2. Two copies of denial of the Operator's request for
a approval of the drilling of the hole, issued by the OME Field Team, Region III under date of December 18, 1958.

J. W. Townsend

Enclosure

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 22 1958

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado
December 18, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Reference is made to your letter of December 11, 1958, wherein you request the Government's approval for the drilling of a 500 foot horizontal drill hole south from the face of the No. 4 crosscut south.

This confirms advice by telephone to A. L. Greslin on December 15, 1958.

Since the 500 foot drill hole to the west from the face of the No. 4 crosscut south did not encounter the porphyry mass postulated to be present at that depth, did not encounter significant mineralization, and did not encounter geologic structure conducive to ore deposition; it is considered likely that these same conditions prevail to the south of the face of the crosscut. It is considered doubtful that the neck of porphyry projected to a position ahead of the crosscut will exist at that elevation. If it does exist at that elevation, it appears unlikely that it would be reached by the proposed 500 foot drill hole.

Under the circumstances, Government participation in the costs of the proposed drill hole No. 30 is not considered warranted; therefore, your request for Government approval for the drilling of the hole is denied.

Very truly yours,

OME Field Team, Region III

Original signed by
By J. W. TOWNSEND
J. W. Townsend

Original signed by
By E. N. HARSHMAN
E. N. Harshman

JWT:ltm
cc: Chmn. Op. Comm. (2)
Harshman
Belser, OME/DFC
Corres. file
Cooper
cc: A. L. Greslin
Questa, New Mexico

Chron.

W.O.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

OFFICIAL FILE COPY
IN REPLY REFER TO:
O. M. E.
RECEIVED DEC 29 1958

DATE	INITIALS	CODE

December 17, 1958

Memorandum

To: Executive Officer, OME Field Team, Region III
Through: E. N. Harshman

From: R. U. King
Carl Belser

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator of the subject contract requested in a letter dated December 11, 1958, approval of a proposed drill hole at the face of the No 4 crosscut S (1800 S) to be drilled 500 feet due south and horizontal. The purpose of the hole is stated to be to explore the contact area of the porphyry shown on the surface in that locality (see fig. 3 examination report).

One hole (-90°) has been drilled and one hole (0°, west) is nearly completed from this location, the results of which, however, are not given in the request, but have only been summarized verbally by the operator.

The down hole apparently penetrated 500 feet of weakly mineralized green rock (less than 0.1 percent MoS_2) and did not reach the contact of the green rock with the underlying granite, and did not intersect the porphyry mass referred to above.

The westerly flat hole similarly provided unfavorable information. This hole penetrated 500 feet of weakly mineralized green rock

estimated by the operator to assay about 0.07 percent MoS_2 and likewise did not reach the porphyry even though drilled to a depth sufficient to have penetrated to the center of the mass of porphyry if projected vertically to the level.

These results strongly indicate that the porphyry either plunges gently southwestward or dips flatly northwestward, or for some other reason it does not persist downward as far as the 2nd tunnel shaft level, and therefore it is not probable that the porphyry can now be reached by a 500-foot hole.

The evidence obtained to date does not indicate a "potential ore area south of the crosscut face..." inasmuch as (1) the tener of mineralization decreases southward along the crosscut, (2) favorable geologic environments have not been found, and (3) geochemical MoS_2 soil anomalies are entirely absent from this area.

It is recommended therefore that the request to drill hole 30 be denied.

R U King
R. U. King, Geologist

for H. M. Moore
Carl Belser, Mining Engineer

RUKing:arh

Form 7
(12-56)

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Date	Surname	Code
12/18/58	Murphy	700
12/19	Kusmer	700
12/19	Selfridge	130
12/19	Barrett	130
12/19	Nelson	130
"	Johnson	110
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12/22	C	220
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Mr. J. B. Carman
Urad Mine
Empire, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Carman:

Your letter of November 25, 1958, to Region III Field Team has been referred to this office for reply.

As mentioned in our previous letters, we cannot justify an approval to extend the West 2nd Tunnel Shaft Level an additional 1,500 feet, or to continue the No. 1 Crosscut North an additional 1,000 feet, until sufficient data are available which indicate that this new target area is more favorable than the areas explored to date.

In our opinion there are insufficient data available to support the postulated granite ridge with an apex at about 2000 N along the 300 W coordinate.

However, the results of the geochemical survey suggest the presence of a curved molybdenum-bearing zone that extends westward from the old surface workings and original outcrop of the Questa vein system. Your planned drilling project in this zone should indicate whether or not it has a better potential for molybdenum concentration than the area already explored to the south.

Your comments in regard to the location of the requested underground work with reference to the area you plan to drill have been noted. However, we believe the results of the drilling program would influence any decision on the favorability of the new target area. In view of this, we must again deny your request until the drilling has been completed and its results evaluated.

Note to Field Team:
Would the cupola thery of ore deposits have any bearing on the molydenite concentrations in the subject area?

Sincerely yours,

Frank E. Johnson (Act)

Acting Director

Copy to:
Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

THKillsgaard, Rm. 5224
F. M. Murphy

FMMurphy/gla 12-18-58
cc to: Director's Reading File
Operating Committee
OME Field Team, Region III (2)

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O. M. E.
RECEIVED DEC 19 1958

DATE	INITIALS	CODE
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224 New Customhouse
Denver 2, Colorado
December 15, 1958

Memorandum

To: E. N. Harshman - w/enclosure
Carl Belser -OME/DFC - w/enclosure

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094, Molybdenum Corporation of America, (Moly or Questa mine) Taos County, New Mexico

Enclosed is a copy of a letter dated December 11, 1958, from the subject Operator, requesting Government approval for the drilling of one additional hole (No. 30), under the provisions of Stage 2 of the contract. Please submit to this office a joint memorandum containing your recommendations in the matter.

Please note that the Operator requests the Government's decision as soon as possible as the currently approved drilling will be completed by December 17, 1958.

Original signed by
J. W. TOWNSEND

J. W. Townsend

JDC:hmh

cc: Chmn. Op. Comm. (2)) w/copy of Oper.
Corres.file,Reg.III) ltr. of 12/11/58
Cooper
Caron

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O. M. E.
RECEIVED DEC 19 1958

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OME
DEPARTMENT OF THE INTERIOR
DEC 15 1958
REGION III
DENVER, COLORADO

December 11, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

We ask approval of the following as part of Area B Stage II drilling program.

A hole to be drilled from the face of the 2nd Tunnel Shaft Level, Drift W, Crosscut No. 4 South.

Hole No. 30 Approximate Location: 1800 S Inclination: 0° Bearing: S

The purpose of this hole would be to explore, from the north, the contact area of the porphyry shown on the surface in that locality. The No. 4 Crosscut face at 1800 S lacks about 300 feet of reaching the projection of this surface contact. Thus there is sufficient potential ore area to the south of the crosscut face to warrant, we believe, this exploration. Further, the cost of this additional hole would add but about 2% to the total cost of the crosscut. We trust you will concur.

We need a very prompt decision as the drillers working in this place will complete Holes 24 and 25, the other holes at the face, by December 17th.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
UHAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALG

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

RECEIVED DEC 15 1958		
DATE	INITIALS	CODE
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		130
		700

December 11, 1958

Memorandum

TO: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed are the following pertaining to operations under the subject contract:

1. The original and one copy of the Operator's letter of November 25, 1958, with attached maps which constitutes a request for reconsideration of its two requests of August 14, 1958, for approval to extend the No. 1 north crosscut northerly an additional 1,000 ft., and crosscut north west to northerly for a distance of 1500 ft. from the west end of the second tunnel shaft level.

2. The original and two copies of a joint memorandum dated December 9, 1958, from R. U. King, Geologist, Geological Survey, and Carl Belser, Mining Engineer, Bureau of Mines, pertaining to the Operator's request under item 1.

This office concurs in the field examiners recommendations that action on the Operator's request for the additional crosscutting be further deferred until the results are known of the drilling from the surface by the Operator at its sole expense.

Since the previous advice to the Operator regarding deferment of the Government's action on its request was from your office, it is recommended that your previous advice to the Operator be reiterated.

J. W. Townsend

J. W. Townsend

Enclosures

see Maps in Folder #3

W.O.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

OFFICE OF MINERALS EXPLORATION
RECEIVED DEC 15 1958
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DEPARTMENT OF THE INTERIOR
NOV 28 1958
DENVER, COLORADO

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. D.M.E.A. 4558
Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

Referring to our two requests of August 14th:

(1) Under Stage II Area B of the contract for 1500 feet of crosscutting in a northerly direction from the west drift 2nd Tunnel Shaft level at coordinate approximately 800 West. This was more explicitly stated in our letter of September 16th to read: "Extend the 2nd level from approximately coordinate 800 West a distance of 400 feet N 45° W, thence 1100 feet north."

West Drift
#7 Xcut

(2) Under Stage II Area A of the contract, to continue the No. 1 Crosscut North, 2nd Tunnel Shaft Level, another 1000 feet in a northerly direction. This work would start at approximately coordinate 845 N-1160 E and extend to 1845 N.

We will review subsequent correspondence relative to these requests:

In your letter of August 25th, you advised that request (1) was denied because of insufficient ground subordinated. On September 16th, we applied for subordination of three more claims to satisfy this request. Included in this application were the required claim information and a claim map of our holdings on which were indicated the claims subordinated under the contract and the claims to be added.

In your letter of September 4th regarding the 1000 feet extension of No. 1 Crosscut North in Area A, you advised that it was not within your authority to grant the request and it had been forwarded to Washington for consideration from where we would hear later.

On September 16, Mr. Mittendorf, Acting Director O.M.E. wrote us from Washington that decision on the No. 1 Crosscut North extension would be reassessed when more information was available from surface drilling which we had underway and more underground drilling and other work at the Questa Mine.

On October 31st Mr. Johnson, Acting Director O.M.E. wrote, (referring to Mr. Mittendorf's letter wherein he requested results from drilling and other work before reassessing our request, (2)), that as this work had not been completed, government aid in exploring the area northwest of the present project would be held in abeyance.

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III

Re: Docket No. D.M.E.A. 4568 Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America

We therefore would appreciate your reconsideration at this time of our requests, (1) under Stage II Area B and to amend the contract to include request (2).

Approval of both requests has been withheld pending the outcome of surface drilling which we are now doing. The object of this drilling is essentially to determine rock types and structure to better direct work underground during or subsequent to the work requested. As from 1000 to 2000 feet separate the present location of the underground work and the drill holes, it is difficult to understand how one can be made dependent on the other. The locations of the four drill holes numbered I, II, III and IV are shown on the geochemical map herewith. In this connection, the question arises as to what drill hole evidence would warrant the drifting now under consideration.

Incidentally, progress in dribling Hole II located at coordinates N 1995-W 865, S 30° E, dip 50 degrees, planned depth 1165 feet, has been very slow. It, the first to be drilled, was started September 15th. The hole was drilled to 780 feet, 550 feet through glassy volcanics and 230 feet through "transition rock", blocky green rock. Core and sludge averaged about 0.06 MoS_2. Values were uniform. At this point it was necessary to abandon the hole. Another is being started at approximately the same location. The new hole will be put down to the 780 ft. elevation of the first hole with a chipping bit and cased, then core drilled from there.

During the time in which government authorisation of the requested work has been withheld, we have been forced to continue this underground work. Due to soft ground it is uneconomical and impracticable to suspend it. The ground will not stay open without constant maintenance. It is therefore essential that the underground work be continued until such a time as either more permanent workings are established or the project is abandoned.

To review the status of the project from the beginning:

Immediately east of the beginning of the project were the old mine workings from which were produced some 20,000,000 pounds of MoS_2 from small high grade veins on or near a contact between an altitic intruding granite into andesite volcanics and, in places, altered sediments. This is locally termed green rock. It was found that the higher concentrations of mineral were on the steeper veins or contacts. These would vary in dip from 15 to 70 degrees. On flat dips, the mineralisation was dispersed in small fractures in the granite near the contact and similarly in the overlying green rock. As more information was disclosed, finally by some 30 miles of mine workings, an ore trend to the southwest was shown with a south dip. The productive veins had a general west strike and occurred on a roll or ridge on the flank of the granite mass. This ridge was followed down to the 2nd Tunnel Shaft level and high grade ore produced just east of the beginning of this project, about 2200 E.

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III

Re: Docket No. D.M.E.A. 4568 Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America

In fact, ore production has ranged over a vertical distance of 1300 feet. Downward projections of this ore trend were sought in a flat dipping winze extended to 70 feet vertically below the 2nd level with laterals from it. Extensive dispersed mineralization was found in green rock near the granite contact in the winze workings but with insufficient MoS2 concentrations. Indications were that it was over a flat contact not favorable for high grade ore. With no high grade ore available in the winze, and facing expensive downward exploration, it was decided to drift westerly in the granite near the contact seeking other rolls along the flank of the contact. The west drift was continued in the granite for working facility with the idea of going south to the contact at intervals. Two such workings were made off the west drift, one at about 2000 E and the second at about 1600 E. The first reached the contact at about 200 S and then beyond 200 feet in mineralized green rock. Many mineralized fractures were found both in the granite and adjacent green rock but no high grade ore (5%). The second set of south workings were similarly explored. Here a fractured aplitic granite, well mineralized was found. The muck from 40 feet of drift driven especially for sampling, was hauled to the mill and run through the automatic sampler with a 1% MoS2 result. At this point, the possibilities of developing a large low grade tonnage of ore was envisioned.

It had been demonstrated from the old mine workings that mineralization had occurred on a ridge or bulge on the south flank of the granite. Also that on flat contacts, multiple small mineralized fractures occurred both in the granite and in the adjacent green rock. A similar, though smaller bulge in the granite was determined in the south workings off the west drift at about coordinate 1600 E. On this bulge was found strong, dispersed mineralization, particularly on the crest of the bulge in the more brittle aplitic granite.

Please refer to the geologic and topographic Map No. 2 with the original application. It will be noted that the old mine workings are on the flank of a granite mass shown to the east on the map. To the southwest is a similar but larger exposed mass of granite not shown on the map. Its crest would be at about 7000 S and 11000 W on our coordinate system; and the northeast contact would be found in the neighborhood of coordinates 4000 S and 8000 W. Between these two granite masses lies the Goat Hill porphyry. Several scattered showings of molybdenite have been found in Goat Hill Gulch; in the steep gulch just west of Goat Hill Gulch; in the Dan Cisneros workings further to the southwest in the west granite somewhat west of its northeast contact; in Bear Canyon which joins Red River from the south just east of the Cisneros workings and on the southwest flank of the west granite mass.

A connecting ridge between these granites seemed probable and the extension of the west drift would parallel such a ridge and also would be within range of the downward extension of the ridge determined in the south workings. In addition, there was ore opportunity in the vicinity of the north-south porphyry contact as well as in the corner formed by the arm of porphyry reaching out to the east from the south end

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III

Re: Docket No. D.M.E.A. 4568 Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America

of the porphyry mass.

While admittedly the connecting ridge idea was only a theory, in general it was clear that the country was extensively mineralized and that it had enough variations in structure for probable favorable ore locations.

Our mining experience has shown that the mineralization has always been associated with the granite-green rock contact; and that the amount of MoS_2 varies in general inversely to the distance from the contact either in granite or green rock. Consequently, determination of the contact and, as stated above, its configuration is basic to our exploration program.

To illustrate the contact relationship, we have made and are attaching hereto, six vertical cross-sections; one, an east-west section at 200 S which is roughly in line with the west drift. The location of the contact in this section is shown in full line where it has actually been determined by either drifting, drilling or surface observation. Thus, in this section, the surface contact is shown projected to the underground at 3000 E, actually located by mine workings; and farther west determined by drill holes. Another east-west section was taken at 2000 N where the only information available is at the surface. Here the granite dips to the west at about the same angle as in the 200 S section.

Four north-south sections were made. The first at 3000 E at the Moly Tunnel showing the contact rising sharply to the north. This contact was well established in the old mine workings.

The second was taken at 1200 E where the contact was located by drifting and drilling. It dips steeply to the south and there is some indication from its position in the west drift and its location in D.D. Hole No. 14 that it is rising somewhat, going north.

The third north-south section at 400 E shows from drilling from the No. 5 Cx S that the granite is rising to the south which would conform to the projection of the ridge shown around 1600 E on the 200 S east-west section.

The fourth north-south section at 800 W shows the projection of the No. 4 Cx S at 300 W, also the No. 7 Cx N which we wish approval to extend north, and the projection of Drill Hole II.

It may be of interest to note the large areas both vertically and horizontally involved in this project; and consider the comparative small volume of a rather large ore body.

You have our map showing workings, drill holes and sample results recently brought up to date. From it you will note that our west drift has shown uninterrupted MoS_2 mineralization for 2200 feet; laterals indicate similar mineralization from north to south of 2500 feet and drill holes indicate mineralization to 850 feet vertically.

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III

Re: Docket No. D.M.E.A. 4568 Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America

We believe 200 million tons of 0.20 MoS2 material is indicated in these workings. While this is not ore under present conditions, there is small doubt that at some future date improved extraction methods will make it available. Thus it stands as a back log for future molybdenum supply.

We are also attaching hereto the results of a geochemical survey made by Hans Heinicke, Consulting Geologist, et al. We submitted to you the results of a prior survey; since that time additional samples have been taken between the first in the more interesting locations. The results of both are shown on the map.

It will be noted that the "highs" form a semicircle, with the east porphyry contact forming the west arc and the eastern arc conforming to the westward extensions of the old mine veins, with the "highs" increasing as the granite is approached, culminating in the surface exposed granite.

Also inclosed are two vertical sections A-A' and B-B', the location of which is shown on the geochemical plan. We have previously stated the relationship of the MoS2 mineralization to the granite contact. In these sections we show the probable relationship of the geochemical results to the contact. We put considerable confidence in this deduction as it conforms with the position of the contact where actually established and reasonably projected.

We are particularly anxious to extend No. 7 crosscut to the northwest and to the north as per our (1) request so as to penetrate the porphyry contact zone of the Goat Hill porphyry stock. In our opinion, this contact may also be a favorable location for ore development, particularly in view of the hydrothermal alteration evidence of mineralization, and structural development on the surface. In Goat Hill Gulch, the extensive zone of hydrothermal alteration swings from Goat Hill northwestward andthence eastward to the Sulfur-Iron Gulch intersection. Geochemical soil sampling indicates that there is appreciable mineralization along this zone, and northeast trending, southeast dipping shearing also is evident near Goat Hill. To the east, east-west shearing is prominent in the Sulfur Gulch drainage. This zone of hydrothermal alteration, mineralization, and structural development also may reflect the presence of the proposed granite ridge at depth, a strong zone of weakness or both.

We are also very anxious to extend No. 1 crosscut, as per our request (2) to the north to penetrate this zone, particularly since it will explore the zone close to the point where the trend changes from northeast to east-west.

We re-emphasize the proposed drill holes will not explore this area; they are solely for the purpose of securing additional geologic information so as to better direct the underground exploration. Extensive underground workings and diamond drilling will be needed to thoroughly explore this area.

November 25, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
Field Team Region III

Re: Docket No. D.M.E.A. 4568 Molybdenum
Contract No. Idm-E1094
Molybdenum Corporation of America

In summary:

The project is in a mineralized area, the extension of mineralization from which 20,000,000 pounds of MoS2 has been produced.

The same geological pattern exists in the project area as in the area mined. ?

Scattered MoS2 mineralization extends well beyond the project area.

Work on the project to date has indicated an area containing at least 200,000,000 tons of 0.20 MoS2 material which may be ore at some future time. This area in part is away from the granite. Further exploration here toward the contact probably will indicate higher grade material.

While we do not conclude pending further exploration, that the area to the south of the west drift will prove unfavorable, we believe the area to the north, as indicated by the information now available, has far greater potential.

In regard to our request (1), going northwest and north at 800 W, the surface drilling will not explore the 2000 feet between the hole and the drift as the drift is planned to follow the east contact of the porphyry and its elevation is considerably below the bottom of the nearest drill hole. A similar condition exists in regard to the No. 1 Crosscut North and its position relative to the nearest drill hole under the surface drilling program.

There is no doubt that this area contains several hundred million tons of MoS2 mineralized material. It has the probability of structural features that would allow sufficient mineral concnetrations to make ore. With the exception of Climax, where is a better place for molybdenum exploration to be found?

We trust you will see fit to authorize our requests.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J B Carman

J. B. Carman

JBC:r

Original & 5 copies
Encls: Geochemical Map
2 Geochem Sections
6 Section Maps

CC: MH
ALG
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OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 15 1958

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IN REPLY REFER TO:

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

DEPARTMENT OF THE INTERIOR
DEC 10 1958
REGION III
DENVER, COLORADO

December 9, 1958

Memorandum

To: Executive Officer, OME Field Team, Region III
Through: E. N. Harshman

From: R. U. King
Carl Belser

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator's request of November 25, 1958, to (1) crosscut northerly from the West drift approximately along 1000 W coordinate and (2) to continue crosscutting northerly along coordinate 1160 E from the face (1850 N) of No. 1 crosscut north is a restatement of requests of earlier dates and contains no new geologic justification for the proposed crosscutting, except for the results of the geochemical survey.

It is recommended that a decision on or approval of the proposed work be withheld for the present, as per advices from Mr. Mittendorf of September 16, and Mr. Johnson of October 31, pending results of the surface core drilling currently being done by the operator to test the area underlying the zone of geochemical anomalies.

The operator continues to use a hypothetical granite ridge, 1,000 to 2,000 feet north of the West drift, as the major geologic justification for exploration in that area, but includes as other favorable geologic features, proximity to the granite-green rock contact and

see Map in Folder #3

irregularities in the configuration of the contact. To illustrate these relationships eight vertical sections were submitted with the request. Briefly, they show that (1) one granite ridge has been explored from the area of old mine workings southwestward for 5,000 feet and over a vertical range of 1,500 feet, (2) that some increase in tenor of mineralization occurs over this ridge, and (3) that this mineralization trend is not detectable at the surface. However, none of this material contains factual information relevant to the postulated granite ridge to the north of the present workings.

The results of a recently completed geochemical survey are plotted on a topographic map accompanying the operator's request. The pattern of molybdenum soil anomalies suggests the presence of a curved zone of major shearing and fracturing that extends westward and southwestward from the area of old near surface workings and original outcrop and which has favored the escape and concentration of molybdenum-bearing solutions from underlying sources.

However, regardless of the fact that data are lacking in support of the postulated granite ridge 1,000 to 2,000 feet north of the West drift, the results of the geochemical survey provides direct evidence of near surface mineralization and a possible ore target at depth, and for this reason the area is worthy of further exploration. Still, there seems to be little justification for tunnelling 1,000 to 2,000 feet to a place that is going to be explored by core drilling, before that drilling is completed, and its results evaluated.

Although unrelated to the geologic justification for exploration, the operator gives as an additional reason for requesting approval of crosscutting at this time the fact that he is faced with the economic problems of having to keep repair crews underground and maintaining expensive ventilation in the extended drifts and crosscuts, owing to the altered and fractured condition of the mineralized rocks.

In reply to the operator's question as to what results of drilling would be evidence warranting the proposed crosscuts, the only evidence that would serve a useful purpose at this time would be MoS_2 mineralization of a higher grade than that already found in much of the West drift and completed drill holes. Changes in rock types, geologic structures, or rock alteration would mean little at this point in the exploration project unless accompanied by more intense MoS_2 mineralization.

Based on the operator's revised analyses of December 1, 1958, it is concluded that his estimate of 200 million tons of 0.2 percent MoS_2 is overly optimistic, but as data are not given this figure cannot be checked. A considerable body of better than 0.2 percent MoS_2 can be inferred, however, on the 2nd tunnel shaft level between No. 4 crosscut south and Hole No. 2. Perhaps a more factual estimate would be a body 2,500 feet long by 300 feet wide (hole 8A) by 1,000 feet thick (500 feet above and below the level). Such a body would amount to about 60 million tons.

In view of the erratic checks obtained from recent Survey laboratory analysis of 34 sludge and grab samples, it appears some

additional checking of the operator's analytical results may be necessary. In this connection a plan of the 2nd tunnel shaft level with revised sample data as of December 1, 1958, has been prepared and is attached (fig. 2).

for H. M. Connors
Carl Belser, Mining Engineer

R. U. King
R. U. King, Geologist

Attachment

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

DEC 9 1958

~~EXTRA~~ COPY
O. M. E.
RECEIVED DEC 12 1958

DATE	INITIALS	CODE
12-12	C	220
12-15	Murphy	700

Memorandum

To: Chairman, Operating Committee, OME

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

Enclosed are the following pertaining to operations under the subject contract:

1. Three copies of confirmation of verbal approval issued by the OME Field Team, Region III for the drilling of hole No. 22 and wherein previous approval for the drilling of hole No. 28 is recinded.

2. Three copies of a joint memorandum dated November 26, 1958 from R. U. King, Geologist, Geological Survey and Carl Belser, Mining Engineer, Bureau of Mines pertaining to the drilling of hole No. 22.

Copies of the confirmation of work approval have been distributed to the Operator, the Finance Office, and others concerned in Region III.

J. W. Townsend

J. W. Townsend

Enclosure

224 New Customhouse
Denver 2, Colorado

December 5, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568
(Molybdenum)
Contract No. Idm-K1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of November 8, 1958, this confirms verbal approval, issued by the Government November 10, 1958, for the drilling of hole No. 22 from the face of the No. 5 crosscut south (new). The hole will be located approximately at coordinates 600 S, 400 E, and will be directed on a bearing of S60° W at an inclination of -70°.

The hole No. 22 will essentially explore the area intended for exploration by previously approved hole No. 28. Therefore, approval for the drilling of hole No. 28 issued by the Field Team on September 30, 1958 is hereby rescinded.

Nothing in the verbal approval for the drilling of hole No. 22 or this confirmation, thereof, shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

OME Field Team, Region III

By J. W. Townsend
J. W. Townsend

By E. N. Harshman
E. N. Harshman

JWT/ad
cc: Mr. A. L. Grealin
Questa, New Mexico
cc: Chm. Op. Comm. (3)
Finance Office, Region III
Amendment File, Region III
Harshman
Belser, OME/DFC
Corresp. File
Cooper
Chron.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

OME
DEPARTMENT OF THE INTERIOR
DEC 5 - 1958
REGION III
DENVER, COLORADO
O. M. E.
RECEIVED DEC 12 1958

OFFICIAL FILE COPY

DATE	INITIALS	CODE

November 26, 1958

Memorandum

To: Executive Officer, OME Field Team, Region III
Through: E. N. Harshman

From: R. U. King
Carl Belser

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-S 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

In letters dated November 8, 1958, the operator requested approval of core drill hole No. 22 to be drilled from the face of No. 5 crosscut south (new) approximate coordinates 600 S, 400 E, on a bearing of S 60° W and at an inclination of -70°. Although verbal approval was given on November 10 for this hole, the operator indicated that actual drilling would be postponed pending modification of the drill station to accomodate the drill.

The purpose of proposed hole 22 is to explore for molybdenum in the contact zone of the Green rock and the underlying soda granite, below and west of the No. 5 crosscut south. The results of drilling holes Nos. 18 (-90°; 200 S, 00 E), 21 (-45°, SE; 600 S, 400 E), and 23 (-90°; 200 S, 400 E) indicate that proposed hole No. 22 is suitably located, and it is recommended therefore that the request be approved.

This hole, if approved, should be contingent on the removal of hole No. 28 (-45°, S; 300 S, 50 E) from the list of holes approved in the Field Team work approval of September 30, 1958, because if drilled, both holes would bottom less than 300 feet apart. Proposed hole 22 is preferred because due to its steeper inclination (-70°) it will reach a greater depth than hole 28.

R U King
R. U. King, Geologist

Carl Belser
Carl Belser, Mining Engineer

RUKing:arh

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 24 1958

DATE	INITIALS	CODE
11/24	C	220
11/24	[illegible]	800
[illegible]	[illegible]	[illegible]

224 New Customhouse
Denver 2, Colorado
November 20 1958

Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4563 ([illegible])
Contract Idm-[illegible]
Molybdenum Corporation of America
(Moly or Questa mine
Taos County, New Mexico

Dear Mr. Greslin:

On his next trip, which will be about December 2, 1958, the examining engineer will pick up the Government's splits of all samples taken to date under the contract; therefore, it will be appreciated if you will have them available.

If the individual sample splits are placed in containers they should be grouped for each drill hole and section of drifts and crosscuts, and each container should be labeled so as to facilitate subsequent identification.

We will appreciate your cooperation in the matter.

Very truly yours,

Original signed by
J. W. TOWNSEND

J. W. Townsend
Executive Officer, OME
Field Team, Region III

JDC:hmh

cc: Mr. J. B. Carman
Uranium Mine
Empire, Colorado

cc: Chem. Op. Comm. (2)
Harshman
Belser, OME/BFC
Corres.file, Reg. III
Cooper
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 14 1958

DATE	INITIALS	CODE
11/14	C	220
11/14	[illegible]	800
		700

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado

November 12, 1958

Memorandum

TO: Mr. E. N. Harshman
Mr. Carl Balser, OME/DFC } w/ enclosures

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. IDMA 4568 (Molybdenum) Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed are copies of the Operator's two letters of November 8, 1958, pertaining to the drilling of proposed hole No. 22 from the face of the No. 5 crosscut south.

Please submit a Joint Memorandum containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Enclosures

JWT: ltm

cc: Chmn. Op. Comm. (2)
Corres. File
Cooper
Chron.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

November 8, 1958

OFFICIAL RECORD
U.S. DEPT. OF INTERIOR
RECEIVED NOV 14 1958
DATE | INITIALS | CODE
DENVER, COLORADO

Mr. J. W. Townsend, Executive Officer, U.S.D.I.
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Dear Mr. Townsend:

We are sending you herewith our application for Hole No. 22.

At the time of our conversation it was our desire to have this approved so that drilling could be continued from the same set up after completion of Hole No. 21.

It developed that more room would be required in the drill station for Hole No. 22, so on completion of Hole No. 21, they moved the drill to the No. 4 Cx South.

We are sending this, nevertheless, as approval will allow us to keep ahead with drill stations.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

CC: ALG

OME
DEPARTMENT OF THE INTERIOR
NOV 12 1958
REGION III
DENVER, COLORADO

November 8, 1958

Mr. J. W. Townsend
Executive Officer, O.M.E.
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

We ask approval of the following as a part, of the Area B Stage II drilling program.

Hole No. 22 to be drilled from the face of No. 5 Crosscut South (new) approximately at coordinates E-400, S-590. It is to bear S 60° W and to have an inclination of minus 70 degrees.

Drill hole No. 21 drilled south 45° east at minus 45 degrees has encountered some good streaks of molybdenite. Core assays completed to 220 feet show 130-140 feet--0.69; 140-160 feet--0.30. Sludge assays completed to 170 feet average 0.30. The hole encountered granite at 250 feet, some transition rock from 330-370, then in granite to 416 feet.

We consider hole No. 22 advisable to reach out to the west and have designated an inclination of minus 70 degrees to be able to reach a lower elevation and be within range of 500 feet, a practical drilling distance.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
UREAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALG

224 New Customhouse
Denver 2, Colorado
November 5, 1958

1/7 C 220
1/7 4w 800
1/13 ~~Monthly~~ 700

Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract I4m-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Form MF-104, Operator's Monthly Report and Voucher, for September 1958, has been received in this office and is being processed for payment.

A total of 1500 feet of crosscutting has been approved for the No. 4 Crosscut South. Total footage reported by you to date for the No. 4 Crosscut South, is as follows:

Month Reported	Footage
December, 1957	31'
January, 1958	122'
February, "	153'
March, "	132'
April, "	207'
May, "	225'
June, "	139'
July, "	179'
August, "	171'
September, "	142'
Total----------	1501 feet.

The approved crosscutting in the No. 4 Crosscut South has been exceeded by one foot; therefore the reported cost for one foot of crosscutting is disallowed.

You will be further advised of the above deduction by means of an Audit Difference Statement, which will be forwarded to you by the Contract Administration and Audit Division, Region III.

Very truly yours,
Original signed by
W. TOWNSEND

J. W. Townsend
Executive Officer, GSE
Field Team, Region III

cc: Mr. J. B. Carman
Urad Mine
Empire, Colorado

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
Belser, OME/DFC
Cooper
Corres. File, Reg. III
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 10 1958

DATE	INITIALS	CODE
11/10	C	226
11/13	Murphy	

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado

November 6, 1958

Memorandum

TO: MF-104 File, Region III

From: Executive Officer, OME Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed is a map, consisting of two sheets, submitted by the subject Operator, which shows analytical results for all samples reported todate, plus samples analyzed by the Operator at its sole expense.

Results for samples analyzed prior to January 1, 1958 were erroneous; therefore the samples have been re-analyzed in accordance with our letter to the Operator, dated September 4, 1958, and the corrected results are shown on the assay map.

All analytical results reported todate are now considered to be in compliance with contract requirements.

Original signed by
J. W. TOWNSEND

J. W. Townsend

Enclosure

JDC:ltm

cc: Chmn. Op. Comm. (2) w/2 copies assay maps
Belser, OME/DFC) w/1 copy assay maps
Harshman) copy assay maps submitted under separate cover 10/31/58

Corres.
Cooper
Chron.

See map File
2 maps "A" "B"

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/31/58	Murphy	700
10/31	Rugnik	700
10/31	Seffrey	120
		110
		100
11/3	C	220
		700

OCT 31 1958

Mr. J. B. Carman
Urad Mine
Empire, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Carman:

Subsequent to Mr. Mittendorf's letter of September 16, 1958, copies of your letter of the same date were received.

The information contained in your letter, and additional information available to this Agency, indicate that the work mentioned in the last paragraph of Mr. Mittendorf's letter has not been completed. Therefore, any action relating to Government aid in exploring the area northwest of the present project area will be held in abeyance until the work mentioned has been performed and assessed.

Sincerely yours,

FRANK E. JOHNSON
ACTING Director

Copy to:
Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

FMMurphy/gla
10-31-58
cc to: Director's Reading File
THKiilsgaard, 5224
Mr. Murphy
OME Field Team, Region III (2)

8623

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

October 28, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 30 1958

DATE	INITIALS	CODE
10/30	C	220
		130
10/30	[illegible]	700

Memorandum

To: Chairman, Operating Committee, OME

From: Acting Executive Officer, OME Field Team, ~~Region III~~

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed are the original and two copies of a joint memorandum report dated October 24, 1958, from R. U. King, Geologist, Geological Survey, and Carl Belser, Mining Engineer, Bureau of Mines, pertaining to the Operator's request of September 16, 1958, to add three claims to the land subordinated under the contract and request for Government's approval to extend the second tunnel shaft level, West drift, 1500 feet in a northwesterly and northerly direction.

Two copies of the Operator's letter of September 16, 1958, were forwarded to you by copy of memorandum dated September 18 to the Field Examiners, requesting their recommendations in the matter.

The Field Examiners recommend, in which this office concurs, that the Operator be advised that its request to include additional land under Article 2 of the contract and request for approval of 1500 feet of drift in a northwesterly to northerly direction be held in abeyance until the results are known regarding the drilling of geochemical anomalies from the surface, which is in progress at the expense of the Operator. Also, it is recommended that the matter be held in abeyance until the entire project has been re-evaluated upon completion of the underground drilling presently in progress under the provisions of the DMEA contract.

E. N. Harshman

E. N. Harshman

Encls.

IN REPLY REFER TO:
OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 30 1958

DATE	INITIALS	CODE
October 24, 1958		

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

OME
DEPARTMENT OF THE INTERIOR
OCT 27 1958
REGION III
DENVER, COLORADO

W.O.

Memorandum

To: Acting Executive Officer, OME Field Team, Region III
Through: E. N. Harshman

From: R. U. King
Carl Belser

Subject: DMEA Docket 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator, in a letter dated September 16, 1958, requests an amendment to the contract that will (1) add three claims to the subordinated land, and (2) permit extending the West drift 400 feet in a northwesterly direction and 1,100 feet in a northerly direction. He has submitted, in support of the above request, one copy of a report, with maps, that gives the results of recent geochemical prospecting and indicates significant molybdenum soil anomalies in the area north and northwest of the project area. The data from this report are shown on figure 1 attached.

The three claims that the operator proposes to add to the subordinated land appear adequate to cover the ground under which he expects to continue exploration, but no evidence is given to support the contention that the proposed drifting is heading toward "what are considered structurally the most favorable areas", other than the geochemical anomalies. It is not reasonable to conclude that the anomalous

molybdenum content of the soil, determined by his geochemical tests, reflects intensity of molybdenum mineralization in underlying rocks at depths approaching 1,500 to 2,000 feet (2nd tunnel shaft level). As is brought out in the following discussion, the molybdenum content is about the only recognizable ore guide, which leaves more material of the same grade--0.2 percent MoS_2--as a target for exploration. With the information at hand the search for higher grade material would be outright prospecting.

It is therefore recommended that the request be denied or held in abeyance until the operator follows up his geochemical investigations by core drilling from the surface which is now in progress.

Exploration by drifting and core drilling under the DMEA contract with the Molybdenum Corporation of America at its Questa mine near Red River, New Mexico, has progressed to a point where certain geologic features have become significant or have taken on added significance. Three of the more important of these features are the apparent simple structural relationships of the rock types encountered, the pervasive molybdenum mineralization of a large volume of rock, and the apparent concentration, though slight, of molybdenite in the "Green" rock marginal to the Soda granite.

Due to the lack of adequate detailed geologic study of the mine area and vicinity, it is impossible to correlate with any degree of confidence, the altered rocks encountered in the exploratory workings and drill holes with those at the surface 1,500 to 2,000 feet above. Based

on inspection of the underground workings and drill holes, the general features of the few rock types recognized and their structural relationships can only be approximated (fig. 2).

Four mappable rock units--Soda granite, Green rock, Granite porphyry, and Black porphyry--are identified in the workings and drill holes. The Soda granite, variously termed aplite or granite, is a fine-grained, light gray to pink, massive rock that has been intensely fractured and in places highly silicified. This unit is the host rock of the high-grade quartz-molybdenite veins that have accounted for the past production from the mine. The West drift after penetrating 2,000 feet of fractured, silicified, and weakly mineralized Soda granite, entered a dark fine-grained non-granitic rock called Green rock. Subsidiary drifting indicated that the West drift roughly paralleled the southern limit of the Soda granite, which was later substantiated by DMEA drilling. No. 1 crosscut north was driven northward along coord. E 1200 in Soda granite for its entire length. Drill holes 14, 15, and 16 show the Soda granite-Green rock contact to be about 100 feet above the crosscut.

A uniformly weak molybdenite mineralization of the marginal zone of the Soda granite is shown by the analyses of car- grab and drill hole sludge samples. Between coord. E 1000 and E 2000 along coord. 00 north, the Soda granite has been explored sufficiently in detail to indicate the uniform character of mineralization in a marginal zone at least 500 feet in thickness. The MoS_2 content of this outer zone ranges from 0.10 to 0.20 percent. In not more than 1 percent of the analyses

is the MoS_2 content less than 0.05 nor greater than 0.5 percent. Only small amounts of the granite will average 0.20 percent MoS_2 or better.

The Green rock, which was encountered in the West drift at coord. E 1000 and in which almost all of the westerly exploration has been done, is a dark gray to black and dark green rock presumably of volcanic origin. It is a highly fractured and chloritized rock that is weakly mineralized chiefly along fracture planes with molybdenite and clay minerals. The results of drilling south of the West drift between coord. E 1000 and E 2000, and exploration west and above the No. 1 crosscut north indicate that the Green rock-Soda granite contact dips gently to the south and west. Drill hole No. 18 (-90°) drilled from a stub from the West drift at about coord. E 50 substantiates the gentle westerly dip of about 15°. Vertical sections of the inclined and flat holes drilled from the West drift between coord. E 1000 and E 2000 again confirm the gentle westerly dip component but show a steeper dip component to the south approaching 45°.

In places along the West drift and in the Nos. 2, 4, and 5 crosscuts north and south, where the Green rock contains irregular masses of lighter colored granitic and porphyritic rocks, the term Transition rock is used by the operator. Because of the apparent irregular and intermittent distribution of Transition rock in the western part of the exploration area, it is included in the term Green rock. The molybdenite content of the Green rock ranges from 0.10 to 0.30 percent, with the exception of the bottom two-thirds of hole 17, drilled north from the face

of No. 2 crosscut north, in which the MoS_2 content ranges from 0.05 to 0.15 percent. Scattered assays ranging from 0.30 to 1.0 percent are obtained in the Nos. 4 and 5 crosscuts south and in some of the holes drilled south of the West drift between coord. E 1000 and E 2000.

A coarse-grained light gray to pink Granite porphyry mass about 200 feet thick cuts Green rock in the West drift from coord. 100 W to 400 W and in the first 250 feet of No. 4 crosscut south. This unit also called Red rock was encountered in the face of No. 5 crosscut north, in the last 150 feet of No. 2 crosscut north, and in drill hole 16. The porphyry thus appears to be a dike-like body and may correlate with a small mass of porphyry at the surface. The Red rock is generally less intensely fractured than the Green rock or the Soda granite, but the molybdenite content, which ranges from 0.10 to 0.15 percent, is about equal to that of the Soda granite although the molybdenite is less readily visible. The Granite porphyry is fairly soft--probably due to kaolinization.

Irregular masses, as much as 50 feet wide, of a black porphyritic rock identified as latite? porphryr, are exposed in the No. 4 crosscut south, near the face of No. 5 crosscut south, and are logged in drill hole No. 10. The significance of this weakly mineralized unit, called Black porphyry, which has a crosscutting relationship with the enclosing Green rock is not understood.

Drifting on the 2nd tunnel shaft level has reached a point about 4,000 feet west of the tunnel shaft and crosscutting reached points

1,000 feet north and 1,500 feet south of the West drift; core drilling has reached 400 feet above and 500 feet below the level. Within these limits the molybdenite content of the altered and fractured rocks is, with few exceptions, not less than 0.1 percent. The volume of mineralized rock represented by this exploration is in the order of 9 billion cu. ft. or 720 million tons, which at 2 pounds of molybdenite per ton would contain more than a billion pounds of MoS_2. Material of this grade (0.1 percent MoS_2) is of course not ore under present conditions nor is it likely to be in the foreseeable future but a sizable part of this mineral deposit contains better than 0.2 percent MoS_2 which can be classed as marginal ore.

Because of the uniformity of the molybdenum mineralization in the various rock types, and the lack of definitive structural controls, the only ore guide is the MoS_2 content. And although the discovery of a significant tonnage of this mineral is the ultimate objective of the project, dependence on it along lends a prospective character to the planning of exploration.

Since the operator has recently re-analyzed all of the 1957 samples, major revisions to the conclusions reached in the August 22, 1958, joint memorandum report by Salsbury and Harshman are required. Justification for exploration northward was in a large part based on information that indicated the No. 1 crosscut north was in material that contained from 0.25 to 0.32 percent MoS_2, and that there was no evidence that the northern limit of mineralization was being approached. It is

now evident that the area north of the West drift, which was considered the most favorable, is even less well mineralized than the area south of the drift. It should be noted in this regard that only the corrected assay data are shown on figure 2.

R. U. King

R. U. King, Geologist

Carl Belser

Carl Belser, Mining Engineer

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
October 13, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 16 1958
DATE | INITIALS | CODE
10/16 | C | 220
Murphy | 700

Memorandum

To: Chairman, Operating Committee, OME

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of confirmation of concurrence by the OME Field Team, Region III, to discontinue drilling in hole No. 15, due to difficult drilling conditions.

Also enclosed is a memorandum, dated October 10, 1958, from Carl Belser, Mining Engineer, Bureau of Mines, relative to the matter. Two copies of the Operator's letter of September 4, 1958 were forwarded to you with copies of our memorandum of September 9, 1958 to the field examiners.

Copies of the confirmation of concurrence to discontinue drilling in hole No. 15 have been distributed to the Operator, the Finance Office, and others concerned in Region III.

E. N. Harshman

E. N. Harshman

Enclosures

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 16 1958

DATE	INITIALS	CODE

Denver 2, Colorado
October 13, 1958

Mr. A. L. Gentile, Manager
Shipyard Corporation of America
Gentile, New Mexico

Re: Contract No. [illegible] (Emergency)
Contract No. [illegible]
Shipyard Corporation of America
(Silver or Gentile mine)
Taos County, New Mexico

Dear Mr. Gentile:

In reference to your letter of September 4, 1958, this confirms verbal concurrence given September 11, 1958 to discontinue drilling in hole No. 17 at depth of 145 feet, due to difficult drilling conditions encountered in the hole.

Drilling in the verbal concurrence of this confirmation thereof shall be continued to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, not the fixed unit cost of any item of work.

Very truly yours,

GSA Field Team, Region III

By E. M. Hardman
E. M. Hardman
Acting Executive Officer

cc: Mr. J. B. Cannon
Hawk Mine
Eagle, Colorado

JBC:pr1

cc: Chief, Op. Cont. (3)
Finance Office, Region III
Accountant File, Region III
Hardman
Delany, GSE/DPC
Contract File
Cadger
Green.

October 10, 1958

Memorandum

To: Executive Officer, OME

From: Carl Belser

Subject: Docket No. DMA 4968 (Molybdenum) Contract No. Idm-M1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

No. 15 diamond drill hole in crescent No. 1 E. of the Questa mine was inspected on September 11, 1958. The hole was 426 feet deep. The drill hole penetrated a crushed zone which made further drilling impractical because of the trouble encountered in entering and pulling rods. The hole bottomed in what Mr. Grealis terms transitional, green-colored rock. Core recovery was very poor. Mr. E. H. Kerchum was consulted by telephone and verbal permission given to the Molybdenum Corporation to abandon Hole No. 15.

It is not believed practical to continue drilling on Hole No. 15.

Carl Belser
Carl Belser
Mining Engineer

CB/mr
cc: 6
Idm-M1094
chron

OME
DEPARTMENT OF THE INTERIOR
OCT 10 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

224 New Customhouse
Denver 2, Colorado
September 30, 1958

O. M. E.
RECEIVED OCT 3 1958

DATE	INITIALS	CODE
10/3	C	220
	Murphy	700

Memorandum

To: Chairman, Operating Committee, OME

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of a work approval, issued by the OME Field Team, Region III, for the drilling of six (6) additional holes under the provisions of Stage II of the subject contract.

Also enclosed are three copies of a joint memorandum, dated September 24, 1958, by R. U. King, Geologist, Geological Survey, and Carl Belser, Mining Engineer, Bureau of Mines, pertaining to the matter; and three copies of a letter from this office to the Operator, calling attention to a typographical error in its request of September 18, 1958.

Two copies of the Operator's letter, dated September 18, 1958, were forwarded to you with copies of our memorandum of September 19, 1958, to the field examiners.

Copies of the work approval have been distributed to the Operator, the Finance Office, and others concerned in Region III.

E. N. Harshman

E. N. Harshman

Enclosures

IN REPLY REFER TO:

OME
DEPARTMENT OF THE INTERIOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Office of Minerals Exploration
Denver Federal Center
Denver, Colorado

SEP 26 1958
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 3 1958
DATE | INITIALS | CODE

September 24, 1958

Memorandum

To: Acting Executive Officer, OME Field Team, Region III
Through: E. N. Harshman

From: R. U. King
Carl Belser

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator of the subject contract requested by letter dated September 18, 1958, approval of six additional Stage II core drill holes as follows:

No.	Location	Coordinates	Inclination	Bearing
24	No. 4 X-cut S	800 S	0°	W
25	do.	800 S	-90°	-
26	do.	700 S	+45°	W
27	do.	700 S	-90°	-
28	No. 5 X-cut (old) S	320 S, 50 E	-45°	S
29	Drift west	750-800 E	-45°	S

In conference with Mr. J. B. Carman, western manager for the operator, mutual agreement was reached on the six holes as listed above except that the location and coordinates of holes Nos. 24 and 25 were to be at the face of No. 4 X-cut S, and coordinate 1800 S respectively.

It was expected that the face of the No. 4 X-cut S, upon completion of the approved drifting, would be approximately at coordinate 1800 S.

Holes 24 through 27 will further explore for MoS_2 in fractured green rock to the west of the No. 4 S X-cut, and will give needed information on the vertical thickness of the MoS_2 mineralization in the westernmost area reached by drifting.

Holes 28 and 29 will explore south of and below the West Drift in the area that at this time contains the best grade of MoS_2 mineralization (0.2 to 0.3 percent MoS_2). They are considered necessary to provide data in an area where large gaps exist.

It is recommended that the operator's request to drill the six holes listed above be approved but that holes 24 and 25 be located near the face of the No. 4 X-cut S at approximately coordinate 1800 S.

R U King

R. U. King
Geologist

Carl Belser

Carl Belser
Mining Engineer

RUKing:mp

OFFICIAL FILE COPY

OCT 3 1958

224 New Customhouse
Denver 2, Colorado
September 30, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Mesa Mine
Questa, Colorado

Re: Docket No. DMMA 4568 (Molybdenum)
Contract No. IAm-X1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Your attention is directed to an apparent typographical error in your letter of September 18, 1958, whereby you requested the Government's approval for the drilling of six (6) additional holes under the provisions of Stage II of the contract.

As discussed with you by OME field personnel September 17, 1958, holes 24 and 25 are to be located at the toe of the No. 4 crossout North at the approximate coordinate 1800 S., not at coordinate 800 S., as indicated in your letter of September 18, 1958.

A work approval has been issued by the Government to drill the two holes at approximate coordinate 1800 S. If you are in agreement with the approved location, you may proceed with the drilling of holes 24 and 25. If this location does not agree with your understanding in the matter, please inform this office immediately and, in the meantime, defer drilling of holes 24 and 25.

Very truly yours,

Original signed by
E. N. MARSHMAN

E. N. Marshman
Acting Executive Officer

E

cc: Mr. A. L. Greslin
Questa, New Mexico

JDC:prl
cc: Chmn. Op.Comm. (3)
Marshman
Belser OME DFC
Corres. file
Cooper
Chron.

1958

[illegible] Area Contracting Office
Denver 2, Colorado
September 30, 1958

Mr. J. E. Cannon
Molybdenum Corporation of America
Urad Mine
Questa, Colorado

Re: Project No. [illegible] (Molybdenum)
Contract No. [illegible]
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Cannon:

In reference to your request of September 18, 1958, this constitutes the Government's approval for the drilling of six (6) additional holes under the provisions of Stage II of the referenced contract. The locations of the six approved holes are as follows:

Hole No.	Location	Inclination	Bearing
24	Face of No. 4 x-Cut E. at coordinate 1800 S.	0°	West
25	Face of No. 4 x-Cut E. at coordinate 1800 S.	-90°	-
26	No. 4 x-Cut E. at coordinate 700 S.	+45°	West
27	No. 4 x-Cut E. at coordinate 700 S.	-90°	-
28	The old No. 5 x-Cut E. at coordinates 300 S. 50 E.	-45°	South
29	Drift W. between coordinates 750 W. and 800 W.	-45°	South

Nothing in this work approval shall be construed to increase the estimated total cost of the project, the aggregate amount which

the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

OME Field Team, Region III

By E. F. Hardman
E. F. Hardman

By J. W. Townsend
J. W. Townsend

cc: Mr. A. L. Gamalin
Molybdenum Corporation of America
Questa, New Mexico

JDC:prl

cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Hardman
Balser OME/BPC
Corres. file
Cooper
Chron.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
September 19, 1958

RECEIVED SEP 22 19		
DATE	INITIALS	CODE
9-22	C	220
9/22	[illegible]	800
	Murphy	700

Memorandum

To: E. N. Harshman - w/enclosure
Carl Belser, GME/DPC - " "

From: Office of Minerals Exploration, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. IAm-E1094, Molybdenum Corporation of America (Moly or Queen mine), Taos County, New Mexico.

Enclosed is a copy of a letter, dated September 18, 1958, from the subject Operator, requesting the Government's approval to drill six holes under the provisions of Stage II of the contract.

Please review the Operator's request and submit to this office a joint memorandum containing your recommendations in the matter.

Original signed by
W. TOWNSEND

J. W. Townsend

JDC:prl

cc: GME,Washington-2) w/copy of
Corres. file) Operator's
letter of
9/18/58.

Cooper
Chron.

OME
~~DMEA~~
DEPARTMENT OF THE INTERIOR

SEP 19 1958
REGION III
DENVER, COLORADO

September 18, 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. D.M.E.A. 4568
(Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

To explore the areas from the 2nd Tunnel Shaft Level under Stage II Area B of the contract that have been brought within reach by the drifting, we ask your approval for the following drill holes. This approval is sought now to allow time to prepare the various drill stations:

HOLE NO.	LOCATION	AT APPROX: COORDINATE	INCLINATION	BEARING
24	No. 4 CX S	800 S	0 Degrees	W
25	do do	800 S	Minus 90 Deg.	--
26	do do	700 S	Plus 45 Deg.	W
27	do do	700 S	Minus 90 Deg.	--
28	No.5 CX S (old)	320 S; 50E	Minus 45 Deg.	S
29	Drift West	750-800 E	Minus 45 Deg.	S

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original and 5 copies

CC: Marx Hirsch, President
Molybdenum Corporation of America
~~N~~5 Park Avenue, New York 22

AIC

FILE COPY
OMEA
SEP 22 1958
MINERALS | COR
C 220
CWB 1800
700

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

OFFICE OF MINERALS EXPLORATION
224 New Customhouse
Denver 2, Colorado
September 18, 1958

Memorandum

To: E. H. Marshman) with
M. H. Salisbury, OME/DFC) encls.

From: Office of Minerals Exploration, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-M1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed are one copy each of the Operator's two letters of September 16, 1958, with map attached to each, which constitutes a request for an amendment to the contract to add 3 additional claims to the land subordinated under the contract, and approval for the performance of 1,500 feet of drifting northwesterly from a point in the second tunnel shaft level at approximately coordinate 800 W.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND

J. W. Townsend

JWT:bh

cc: Office of Minerals Exploration, Washington, D. C.) with copy
Correspondence File) of enclosures
Cooper
Caren.

See "Map #3-A"
TDR 9/11/58 in Docket

FILE COPY
DMEA
RECEIVED SEP 22 1958

DATE	INITIALS	CODE

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

September 16, 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

With reference to my letter of August 14 in which we requested Government approval under Stage II Area B of the contract to extend the Second Level northwesterly from coordinate 800 W a distance of 1,500 feet and your reply of August 25th wherein approval was denied due to insufficient ground subordinated:

The necessary ground was located prior to our request and we are herewith making application to amend the contract to include three additional claims.

We attach a claim map showing subordinated ground and that to be added. Also on the map the requested work is indicated by dashed red lines.

For clarification we would amend our request of August 14th as follows:

We ask approval to extend the 2nd level from approximately coordinate 800 W a distance of 400 feet N 45° W, thence 1,100 feet north. Pending your approval of this request we are driving this drift without Government assistance. Any work done in the meantime would be taken from the above.

Since our August 14th letter we have made available to you a geochemical report on this area and a report dated 8/16/58 by our geologist, Dr. Robert H. Carpenter.

You will note that the geochemical indications appear to support the structural relationships on which our program has been based, both to the west on the east side of the large porphyry mass and to the north where an intrusive granite ridge could be indicated. The work proposed above would reach the locality of the intersection of a ridge line and the porphyry east contact.

September 16, 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Work done under this program has disclosed a vast amount of MoS2 in low grade material; it has given valuable geological information, none of which is contrary to the general plan; it has approached but not reached what are considered structurally the most favorable areas, therefore we strongly urge approval of the work herein requested.

We will appreciate as early a decision as you can conveniently give us.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original and 5 copies

CC: Marx Hirsch, President
Molybdenum Corporation of America
375 Park Avenue, New York 22

ALG

Enclosed one map with each copy

FILE COPY
DMEA
RECEIVED SEP 22 1958
DATE | INITIALS | CODE

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

September 16, 1958

Mr. J. W. Townsend
Alternate Acting Executive Officer
D.M.E.A. Field Team Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-21094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

In Area B under Stage II of the contract we are recommending work which exceeds the DMEA limit (200 feet from nearest property line) of the area included in the original contract. Consequently we ask that you amend the contract to include the following additional unpatented mining claims.

These claims are owned by the Molybdenum Corporation of America and are free of any liens or incumbrances.

They are all in the Red River Mining District, Taos County, New Mexico and recorded in the County Clerk's Office, Taos, New Mexico.

	Name of Claim	Section	Township	Range	Book	Page
Description:	Summit No. 4	35	29 N	13 E	S-33	405
	Summit No. 7	35	29 N	13 E	S-33	408
	Summit No. 16	35	29 N	13 E	S-33	417

Attached hereto is a claim map marked S-A showing the above claims, contiguous to the area included in the original contract. In dotted red are shown the proposed work extensions.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original and 5 copies

CC MH
ALG

Enclosed one map with each copy

DMEA Form 7
(12-56)

OFFICE OF MINERALS EXPLORATION

OFFICIAL FILE COPY

Date	Surname	Code
9/10/58	Murphy	700
"	Knouse	700
9/12/58	[illegible]	130
9/12	[illegible]	130
9/12	[illegible]	130
"	[illegible]	110
"	[illegible]	100
9/16	[illegible]	220
		700

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SEP 16 1958

Mr. J. B. Carman
Urad Mine
Empire, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Carman:

This is with reference to your request of August 14, 1958, to the DMEA Field Team, Region III, for approval to continue No. 1 Crosscut North an additional 1,000 feet in a northerly direction.

The Field Team referred your request to this office, as the crosscut is in Area "A," where work under the contract is confined to diamond drilling, and approval of your request would, therefore, require an amendment to the contract.

Our study of all available information, including that developed by the present exploration work, does not disclose sufficient geologic justification for Government participation in extending the No. 1 Crosscut North, and, therefore, I regret that your request must be denied.

We understand that you plan some drilling from the surface to test anomalies to the northwest of the present project area and, also, some additional underground drilling. When the results of such work and other work at the Questa Mine are available, we will be pleased to reassess the complete exploration program.

Sincerely yours,

C. O. [illegible]

ACTING Director

FMMurphy/FEJohnson/gla
9-12-58
cc to: Admr.'s R. File
Operating Com.
THKiilsgaard,5224
Mr. Murphy
DMEA Field Team, RegionIII
(2)

Copy to:
Molybdenum Corporation of America
375 Park Avenue
New York 22, New York

8623

[illegible]DENVER [illegible]
[illegible]
[illegible], COLORADO

September 11, 1958

DMEA
DEPARTMENT OF THE INTERIOR
SEP 15 1958
REGION III
DENVER, COLORADO

Mr. J. W. Townsend
Alternate Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

9-19 C 220
9/19 800
~~9/20 Murphy 700~~

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Townsend:

Replying to your letter of September 4 we are now reanalyzing the 416 samples mentioned and will submit a corrected assay map as promptly as possible.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
UBAR MINE

By J. D. Carman

J. D. Carman

JDC:s

cc: AKG

9/15/58
Copies distributed to:
Chas. B. Cox (2)
Hagenbuch
Gallagher
Carmen, Jr.
Carlson

9/12 C 220
9/12 800
~~Manifold~~ 00

224 New Customhouse
Denver 2, Colorado
September 9, 1958

Memorandum

To: E. N. Harshman - w/enclosure
H. H. Salsbury, DMEA/RFC - " "

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

Subject: Docket No. DMEA 4368 (Molybdenum), Contract No. DMe-H1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of a letter, dated September 4, 1958, from the subject Operator, requesting the Government's permission to discontinue drilling in hole No. 15 at a depth of 426 feet, due to adverse drilling conditions encountered in the hole.

Please submit to this office a joint memorandum containing your recommendations in the matter.

Original signed by
E. N. HARSHMAN
E. N. Harshman

EN:pel

cc: Chem. Op. Comm.-2 } w/copy of
Contrs. file } Operator's letter.
Cooper
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
SEP 8 - 1958
REGION III
DENVER, COLORADO

September 4, 1958

Acting Executive Officer
DMEA Field Team, Region III
204 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4568
(Molybdenum)
Contract ID"-5 1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application under Stage I, Area A of the contract to stop Diamond Drill Hole No. 15.

Diamond Drill hole No. 15 was drilled to a depth of 420 feet, where we were unable to go any farther due to the loose material in the hole.

The hole would close in to where we had to ream getting the rods in and then had a hard time getting them out.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/8	[illegible]	120
"	Johnson	110
"	[illegible]	100
9/9	C	220
		700

September 5, 1958

MEMORANDUM

To: Administrator

From: George C. Selfridge, Special Assistant

Subject: Docket No. DMEA-4568 - Molybdenum
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico
Contract No. Idm-E1094

On August 14, 1958, the subject Operator requested that it be allowed to extend the Second Tunnel Shaft Level 1,500 feet in a northerly direction at approximately coordinate 800 W. and also extend the No. 1 Crosscut North in the A area 1000 feet to the north. The requests and pertinent memoranda were submitted to Washington. Later Region III informed us that a study of the maps showed that insufficient ground was subordinated to drive the 1,500 feet westward or northwestward but oral approval was given to drive the first 500 feet of a crosscut to the north from near coordinate 750 W.

The Region notified the Operator on August 25, 1958, that the requested 1,500-foot extension of the Second Tunnel Shaft Level in a northwesterly direction was denied because of the lack of subordinated ground.

After studying the request in Washington, DMEA proposed that a flat diamond drill hole be drilled westward in lieu of the driving. Later, a teletype was sent to Region III questioning any further work because of the low grade of the material found and the lack of geological evidence for a supposed granite ridge target to the north. This teletype was not clearly understood by the Region which teletyped us and on September 3rd we wired that our previous teletype represented justification for the denial of the request for 1000-foot extension of the No. 1 North Crosscut. On the afternoon of September 4, 1958, Messrs. Harshman and Townsend telephoned the writer in regard to our teletype of September 3rd. They wished to know if the teletype intended that they make the denial of the 1000-foot extension of the No. 1 North Crosscut, explaining that they did not think that they could deny a type of work which they could not approve. In this case approval would have to come from Washington as it involves the

transfer of footage from Stage II Area B to Area A. The writer told them it was his impression that the teletype was their authorization to deny the extension of the No. 1 North Crosscut. However, noting some hesitancy on their part, the writer suggested that we make the denial here and at the same time refer to the surface diamond drilling work that the Operator plans.

Soon after the opening of the telephone conversation, the writer was informed that originally Mr. Harshman was all for extending the low grade area because of the tonnage possibilities and the apparent average grade of 0.25% MoS_2 but now is no longer so interested since he learned that all of the assays prior to January 1 of this year were actually one-half of the values reported. Seemingly, the assay method used by the company up to that time was inaccurate and it was only recently that the Region pried this information from the Operator while trying to secure more ammunition to support its recommendations for further work. Now Harshman thinks that there might be from 2- to 300,000,000 tons of rock that will average 0.15% MoS_2 and that the project warrants certification. Harshman and Townsend told the writer that they were going to withdraw their oral approval of the 500 feet to be driven near the end of the Second Tunnel Shaft Level as the Operator who has a crew standing by is going to drive approximately North 30° West to test some geochemical anomalies occurring from 1- to 2,000 feet north of the drift. The anomalies can indicate anything or nothing as the best run only 500 parts per million.

The writer discussed the postulated granite ridge, stating that he could not see how the No. 1 Crosscut if extended northward could intersect a contact unless there were a valley ahead which would bring the overlying extrusives down to the level of the crosscut. Mr. Harshman explained that the crosscut would stay in granite and that they had planned to drill up holes to search for the postulated ridge. Seemingly, he did not hold out too much hope that such a ridge might exist. In discussing a possible mining method, the writer learned that it was approximately 2,000 feet from the surface down to the low grade molybdenite-bearing granite, thus eliminating open pitting. As the ground is badly fractured there should be no difficulty in block caving if more competent rock can be found at a lower depth. Harshman did not believe that the DMEA workings would remain open or might be used for hauling ore from outside the subordinated ground (the contract contains a royalty haulage clause). If something were found 2,000 feet away probably new mine workings would be established.

The Operator recently made arrangements to drill the surface anomalies and continue some underground drilling. Mr. Harshman stated that at least some more diamond drilling under the contract should be

done underground to better round out the picture. The Operator discussed drilling the surface holes to a depth of 2,000 feet while continuing westward or northwestward drifting. The Operator had been somewhat reticent about the anomalies and land to the west and north because it did not hold the ground. The Region understands the ground has now been staked and that other mining companies including Climax Molybdenum have been active in the area.

Mr. Harshman tentatively does not believe that the postulated granite ridge or the anomalies might indicate another Questa mine. Seemingly, some of his optimism for the low grade deposit before he learned of the poor assaying was based on hearsay information that the cut off grade at the Climax mine was 0.20% MoS_2. While some rock of that grade may reach the Climax mill, there the heads are maintained at approximately 0.45% MoS_2 since receiving a Government contract, in lieu of approximately 0.70% prior to the contract.

Another question was raised during the conversation and that was with regard to payment of the assays submitted before January 1, 1958. As the assays were erroneous should the Government allow the 416 previously approved in the amount of $1,248? The Region has secured a number of pulps and apparently is going to do a little check assaying on its own.

In summary the assay question should be settled. Region III will withdraw its oral approval for the 500 feet of northward cross-cutting in the B Area and Washington will deny the 1000-foot extension request in the A Area, at the same time referring to the planned surface drilling and its results and a complete reassessment of the entire program. The Region is going to submit additional maps.

When discussing the visibility of the molybdenite, Mr. Harshman informed the writer that it was smeared so thinly on fracture surfaces as to give a person the impression that the rock assayed at least 1.00% MoS_2.

George C. Selfridge

GCSelfridge/esf
9/5/58
cc to: Admr. Reading File
Mr. Selfridge

Mr. George Selfridge

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 5 1958

DATE	INITIALS	CODE
9/5	C	220
		120
		700

DN 235 BUR MINES 9-4-58 10-20

CHAIRMAN, OPERATING COMMITTEE, DMEA

RUSH RUSH

HARSHMAN AND I WILL APXXX PLACE CONFERENCE CALL TO YOU TODAY, SEPT.14 XXXXX SEPTEMBER 4, 3-30 PM YOUR TIME, RELATIVE DOCKET DMEA 4568, CONTRACT IDM-E1094, MOLYBDENUM CORPORATION OF AMERICA.

J W TOWNSEND

Henner, Colo.

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

SEP 4 1 48 PM '58

224 New Customhouse
Denver 2, Colorado
September 4, 1958

9/9 C 220
9/9 WO 800
~~Mr. Murphy 700~~

Mr. J. B. Cannan
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Ma-M1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Cannan:

Reference is made to your letter of August 14, 1958, wherein you request Government approval for the extension of the No. 1 crosscut north, in Area A, an additional 1,000 feet.

As you know, the matter is not within the authority delegated to this office for resolution, and was forwarded to the Washington Office, DMEA, for their consideration, on which we were advised today by telephone that you will hear from them direct at an early date.

Very truly yours,

Original signed by
W. TOWNSEND

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

JWT:prl

cc: Chmn. Op. Comm. (2)
Marshman
Salsbury, DMEA DFC
Corres. file
Cooper
Chron.

224 New Customhouse
Denver 2, Colorado
September 4, 1958

9-8 C 220
9/9 800
~~Murphy~~ 700

Mr. J. R. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-XL094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Our records indicate that Molybdenum Corporation of America was reimbursed by the Government for the Government's portion of the costs of analysis of 416 drift channel and drill hole sludge and core samples prior to January 1, 1958.

Since you have recently determined and brought to our attention that the assay results submitted by you prior to January 1, 1958 are in error, therefore it will be necessary that these samples be reanalyzed at company expense, without contribution by the Government, in order to provide accurate analysis results for project appraisal purposes.

When the samples in question have been reanalyzed, please submit a new assay map showing the locations and results of the reanalyzed samples, together with those samples analyzed subsequent to January 1, 1958 which are considered to be accurate.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

JWT:prl

cc: Chem. Op. Comm. (2)
Marshman
Salsbury, DMEA DFC
Corres. file
Cooper
Chron.

9-8 C 220
Murphy 706

224 New Customhouse
Denver 2, Colorado
September 4, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. NMMA 4568 (Molybdenum)
Contract No. Ida-31094
Molybdenum Corporation of America
(Maly or Questa Mine)
Taos County, New Mexico

cy to 800

Dear Mr. Carman:

In our telephone conversation on August 25, 1958, you were given verbal approval to crosscut north a distance of 500 feet from a point in the Second Tunnel Shaft Level at coordinate W. 750. The verbal approval was contingent on immediate receipt in this office of your written request for Government approval of the crosscutting.

Since your written request has not been received, and since you have decided not to crosscut north, as verbally approved, but, instead, to crosscut northwesterly and are doing so at company expense, without contribution by the Government, pending resolution of all matters concerned with it; therefore, as a matter of record, my verbal approval to crosscut north from the west drift at coordinate W. 750 is hereby rescinded.

Very truly yours,

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

JWT:prl

cc: Chem. Op. Comm. (2)
Marshman
Salsbury, DMMA HFC
Amendment file, Region III
Corres. file
Cooper
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
September 4, 1958

COPY
DMEA
RECEIVED SEP 8 1958

DATE	INITIALS	CODE
9-8	C	220
"	Murphy	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of approval, issued by the DMEA Field Team, Region III, to stop Stage I diamond drill hole No. 16, in Area A, at a depth of 245 feet, and to change the direction of diamond drill hole No. 16 from N. 45° E. to N. 60° E.

Also enclosed are three copies of a joint memorandum, dated August 22, 1958, from E. N. Harshman, Geologist, and M. H. Salsbury, Mining Engineer, Bureau of Mines, pertaining to the matter; and two copies each of the Operator's two revised letters of request, dated August 30, 1958.

Copies of the approval have been distributed to the Operator, the Finance Office, and others concerned in Region III.

J. W. Townsend

J. W. Townsend

Enclosures

224 New Customhouse
Denver 2, Colorado
September 4, 1958

Mr. A. L. Gwalin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4468 (Molybdenum)
Contract No. Ma-Eloph
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Gwalin:

In reference to your two letters of August 30, 1958, this constitutes the Government's approval for the following:

1. Discontinue drilling in hole No. 16 at a depth of 245 feet, due to difficult drilling conditions encountered.

2. Drill hole No. 15 on a bearing of N. 60° E. instead of N. 45° E., as originally provided for in the contract.

Nothing in this work approval shall be construed to increase the total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By J. V. Brassard

By E. M. Harshman
E. M. Harshman

cc: Mr. J. B. Cannon
Urad Mine
Empire, Colorado

JDC:prl
cc: Chem. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Harshman
Salsbury DMEA DPC
Corres. file
Cooper
Chron.

DMEA
DEPARTMENT OF THE INTERIOR

REGION III

AUG 22 1958
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado
August 22, 1958

Memorandum

To: Alternate Acting Executive Officer, DMEA Field Team, Reg. III

From: E. N. Hazelman
M. H. Salsbury

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine) Taos County, New Mexico

In two letters to the Acting Executive Officer dated August 18, 1958, the operator requests permission to stop Diamond Drill Hole No. 16 at 245 feet and to change the direction of Diamond Drill Hole No. 15. These letters confirm verbal requests made to E. N. Hazelman by telephone on August 14, 1958.

The drillers were attempting to pull rods from Hole No. 16 at the time the undersigned DMEA engineer was inspecting progress on August 14, 1958, and the difficulty being encountered was verified. Hole No. 16 penetrated porphyry from a point 30 feet from the collar to the bottom at 245 feet. It is not considered advisable to continue this hole in porphyry under the difficult conditions encountered.

It appears likely that hole No. 15 would enter the same porphyry mass on the previously approved bearing of N. 45° E. By changing the direction of the hole to N. 60° E. it may be possible to stay out of the porphyry.

Approval of the operator's requests of August 18, 1958 is recommended.

E. N. Hazelman
E. N. Hazelman
Member Field Team

M. H. Salsbury
M. H. Salsbury
Mining Engineer

MHS/mr
Idm-E1094

DMEA
DEPARTMENT OF THE INTERIOR
SEP 3 1958
REGION III
DENVER, COLORADO

DMEA
SEP 8 19
MAILS

August 30, 1958

Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
(Molybdenum)
Contract IDM-E 1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application to change the direction of diamond drill hole No. 15 to North 60 degrees East instead of North 45 degrees East as planned in the contract.

Changing the direction of the hole to North 60 degrees East would more or less follow the contact of the Porphyry and should be better drilling.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

DMEA
DEPARTMENT OF THE INTERIOR
SEP 3 - 1958
REGION III
DENVER, COLORADO

August 30, 1958

Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4568
(Molybdenum)
Contract IDM-E 1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application under Stage I Area A of the contract to stop diamond drill hole No. 16.

We drilled hole No. 16 to a depth of 245 feet. It was in Aplite for the first 30 feet then in Porphyry to 245.

The ground was squeezing badly at 30 feet and at 150 feet. Tried reaming the hole but it would squeeze so bad we had a hard time getting the reaming bit out.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
9/2/58	Ching	700
9/2	[illegible]	700
9/3	[illegible]	130
"	Johnson	110
		~~110~~
"	[illegible]	100
9/3	C	220
		700

SEP 3 1958

Department of the Interior

DMEA

14X4401(01) Revolving Fund, Defense Production Act, Interior, (Transfer to Office of Secretary)

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REURTT SEPTEMBER 2 MOLYBDENUM CORPORATION OF AMERICA DOCKET 4568 ITEMS 1 AND 2 OUR TELETYPE OF AUGUST 29 REPRESENT JUSTIFICATION FOR DENIAL OF REQUEST FOR 1000 FOOT EXTENSION OF NO. 1 NORTH CROSSCUT.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (243)

MChing/gla
9-2-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
Confirmation to Region III

8623

Mr. Gus Selfridge

CENTRAL FILE COPY
DMEA
RECEIVED SEP 2 1958

DATE	INITIALS	CODE
9-2	C	220
		1304
		700

DN 235 BUR MINES 9-2-58 8-50

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA 4568, CONTRACT NO. IDM-E1094, MOLYBDENUM CORP. OF AMERICA. FROM YOUR TELETYPE OF AUGUST 29, ARE WE TO ASSUME THAT YOU ARE PREPARING DENIAL OF XX OF OPERATOR S REQUEST FOR 1,000 FOOT EXTENSION OF NO. 1 NORTH CROSSCUT/Q/

AS TO FURTHER DRIFTING AND CROSSCUTTING, NO LOCAL OBJECTIVES APPEAR WORTHWHILE. HOWEVER, FURTHER DRILLING IS CONSIDERED NECESSSARY IN ORDER TO DETERMINE REASONABLE EXTENT OF MINERALIZATION IF OPERATOR AGREEABLE. AWAITING TELETYPE ADVICE ON NO.1 NORTH CROSSCUT EXTENSION BEFORE DISCUSSING MATTER WITH OPERATOR S REPRESENTATIVE.

J W TOWNSEND

Henver, Colo.

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

SEP 2 12 43 PM '58

224 New Customhouse
Denver 2, Colorado
August 29, 1958

9/2 C 220
9/3 800
700
(Murphy)

Mr. A. L. Gresslin
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Dma-31094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Gresslin:

Reference is made to your two letters of August 18, 1958, requesting Government approval to change the direction of Stage I hole No. 16 from N 45° E to N 60° E, and to discontinue drilling in hole No. 15 at a depth of 845 feet.

In reviewing your requests, it appears that you have reversed the numbers for the two holes from the numbers indicated in our letter of December 23, 1957 to Mr. J. B. Gunnan, whereby we concurred in the drilling of the two holes at the end of the No. 1 crosscut north.

Please review the matter and revise your requests to correspond with the hole numbers specified in our letter of December 23, 1957.

Your immediate attention to the matter is requested.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

cc: Mr. J. B. Gunnan
Grand Mine
Empire, Colorado

JBC:prl
cc: Chmn. Op. Comm. (2)
Harshman
Salsbury DMEA DFC
Corres. file
Cooper
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/28/58	Ching	700
8/28	Kuonsch	700
8/29	[illegible]	130
8/29	Yopes	130
8/29	[illegible]	132
"	[illegible]	110
"	[illegible]	100
9/3	[illegible]	220
		700

AUG 29 1958

Department of the Interior

DMEA

14X4401(01) Revolving Fund, Defense Production Act, Interior, (Transfer to Office of Secretary)

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REURMEMS AUGUST 22 AND 25, MOLYBDENUM CORPORATION OF AMERICA, DOCKET 4568:

1. FURTHER DRIFTING OR CROSSCUTTING TO EXPLORE GROUND THAT HAS NO BETTER POTENTIAL THAN 0.25 PERCENT MoS_2 NO LONGER WARRANTED.

2. THE POSTULATED PRESENCE OF A GRANITE RIDGE NORTH OF THE WEST DRIFT IS NOT SUFFICIENTLY SUPPORTED BY GEOLOGICAL EVIDENCE TO PERMIT EXTENSIVE CROSSCUTTING TO PROVE ITS EXISTENCE. FURTHERMORE, THE PRESENCE OF SUCH A STRUCTURE WOULD NOT IN ITSELF DENOTE CONDITIONS PARALLELING THOSE AT THE QUESTA MINE.

3. THE PRESENCE OF A PORPHYRY MASS WEST AND NORTH OF DMEA WORKINGS APPEARS TO BE QUESTIONABLE. CONTACT OF PORPHYRY AND GREEN ROCK FOUND EARLIER IN WEST DRIFT FAILED TO SHOW IMPROVED MINERALIZATION. PROPOSED NORTH CROSSCUT AT W750 WOULD NOT LOCATE PORPHYRY CONTACT.

8623

4. IN VIEW OF FOREGOING SUGGEST STOPPING ALL AUTHORIZED DRIFTING AND CROSSCUTTING AS SOON AS POSSIBLE BUT PERMIT ATTAINMENT OF ANY LOCAL OBJECTIVES THAT APPEAR WORTHWHILE. ALSO COMPLETE ANY DRILLING ALREADY APPROVED OR NEEDED TO ROUND OUT THE EXPLORATION PROGRAM.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (GCS)

MChing/gla
8-28-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Mr. Ching
Confirmation to Region III

27

Courthouse
2, Colorado
ust 25, 1958

Mr. J.B.Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Mm-H1094
Molybdenum Corporation of America
(Maly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Reference is made to your letter of August 14, 1958, which constitutes your request for the Government's approval to extend the Second Tunnel Shaft Level northwesterly from coordinate W. 800 a distance of 1,500 feet.

A review of your request in conjunction with the map, Figure 5, attached to the contract, indicates that there is insufficient ground presently subordinated under the contract to permit 1,500 feet of drifting in a northwesterly direction.

Therefore, your request for extension of the Second Tunnel Shaft Level 1,500 feet in a northwesterly direction is denied.

Very truly yours,

DMEA Field Team, Region III

By J. W. Tennant
J. W. Tennant

By Robert U. King
Robert U. King
for H. N. Marshman

JWT:prl

cc: Chem. Op. Comm. (3)
Marshman
Salsbury DMEA/BFC
Corres. file
Cooper
Chron.

8/27 C 220
GEF 800
Chm 700
(Murphy)

224 New Customhouse
Denver 2, Colorado
August 25, 1958

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Moly Mine
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Greslin:

Your forms MF-104 and MF-104A for July 1958, have been received and are being processed for payment.

During June 1958, the reaming and casing provided for in Stage I of the contract was exceeded by 145 feet, but due to oversight, the reported cost for the excess reaming and casing was not disallowed. During July 1958, an additional 110 feet of excess reaming and casing was reported on Form MF-104. Since the contract provided for a maximum of 500 feet of reaming and casing in Stage I, the 255 feet of excess reaming and casing must be disallowed.

Will you please make the necessary corrections on your copy of the MF-104 and MF-104A so that the totals shown in subsequent reports will not reflect the $255 error.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

cc: J. B. Carman
Empire, Colorado
HMC:dz
cc: Chmn. Op. Comm. 2
Salsbury, DMEA/DFC
MF-104 File, Reg. III
Harshman
Cooper
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
August 25, 1958

VIA AIR MAIL

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico.

Enclosed are three copies of a joint memorandum, dated August 21, 1958, from M. H. Salsbury, Mining Engineer, Bureau of Mines, and E. N. Harshman, Geologist, Geological Survey, also Member, DMEA Field Team, Region III, pertaining to the Operator's request of August 14, 1958 for Government approval to continue the Second Tunnel Shaft Level northwesterly an additional 1,500 feet, which was also the subject of your teletype of August 19, 1958. Two copies of the Operator's request were forwarded to you by copies of the memorandum to the field examiners, dated August 15, 1958, requesting their recommendations in the matter.

Upon further review of the matter after receipt of your teletype of August 19, it was found that there is not sufficient ground presently subordinated under the contract to permit a full 1,500 feet of drifting in a northwesterly direction. The matter was discussed with the Operator's representative, Mr. J. B. Carman, on August 25, and he was not in accord with the drilling westerly at this time prior to the crosscutting as suggested by you.

Since drifting northwesterly is not possible until additional ground is subordinated, Mr. Carman verbally requested approval to drift north from a point in the Second Tunnel Shaft Level at coordinate W. 750, which is within the provisions of the Amended Contract. To permit continuity of operations, as the drifting crew is standing by for authority to proceed, verbal approval was given for the first 500 feet of the crosscut to the north, subject to the Operator's forwarding immediately written confirmation of its verbal request.

Mr. Carman indicated in our conversation August 25 that the matter of adding additional ground to the west and north to that presently subordinated under the contract would be considered as soon as possible in order to permit further drifting and/or drilling to the west or northwest if conditions encountered in the north crosscut indicate such as being desirable.

J. W. Townsend

IN REPLY REFER TO:
DMEA
DEPARTMENT OF THE INTERIOR
AUG 22 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

August 21, 1958

Memorandum

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

From: M. H. Salsbury
E. N. Harshman

Subject: DMEA Docket 4568 (Molybdenum) Contract Idm-E 1094, Molybdenum Corporation of America (Questa mine) Taos County, New Mexico

In a letter dated August 14, 1958, the operator requests authorization for 1,500 feet of crosscutting in a northwesterly direction from the face of the 2nd tunnel shaft level at approximate coordinates 800 W., 350 S. The present amended contract does not permit extension of the 2nd tunnel shaft level west of coordinate W 800 but authorizes crosscuts to be driven north and/or south from the 2nd tunnel shaft level and additional workings to be driven on structures encountered in the north or south crosscuts.

The objectives of the proposed exploration include continued investigation of the large mass of fractured and mineralized rock (0.25± percent MoS_2) that has been exposed in all openings and all drill holes completed under the DMEA program, exploration of a possible granitic ridge which may contain ore deposits and which appears to strike westerly

COPY
DMEA

from the old mine workings in the area 1,000 to 2,000 feet north of the 2nd tunnel shaft level, and exploration for ore along a contact of a large mass of porphyry which lies west and north of the present DMEA workings.

The exploration objectives are at least in part legitimate and exploration north of the 2nd tunnel shaft level has been planned since the time of the original report and resulting contract. Geochemical work by the operator has indicated significant anomalies north and west of the present DMEA workings. These anomalies may be related to the contact of a porphyry with granite and/or "green rock" but a porphyry dike encountered in the 2nd tunnel shaft level near coordinate W 300 proved to be a poor host rock for MoS_2.

Work in no. 4 crosscut south, turned from the 2nd tunnel shaft level at approximate coordinates 300 W., 300 S., and currently about 1,250 feet in length, has shown that on that level at least, MoS_2 content of the fractured rock has slowly decreased from about 0.25 percent to about 0.10 percent. This fact suggests that the no. 4 crosscut south should be stopped at the approved length of 1,500 feet and that exploration to the north of the 2nd tunnel shaft level should be started.

Although it may be concluded that the exploration requested by the operator is reasonable and that legitimate targets are present

in the area proposed for exploration, it appears that the operator failed to consider the subordinated property boundaries when requesting the proposed northwesterly crosscut. A check of claim maps submitted by the operator and included in the contract shows that a crosscut driven N 45° W from the face of the 2nd tunnel shaft level (approximate coordinates 800 W., 350 S.) must be limited to a length of about 700 feet if exploration is to be limited to ground not closer than 200 feet from subordinated property boundaries. Available data suggests that the granite ridge and possible ore-bearing ground beneath the area of geochemical anomalies might not be reached in 700 feet in which case the principal targets of the proposed work could not be investigated.

Exploration north from the 2nd tunnel shaft level, as provided for in the present amended contract, and as contemplated from the start of the program, appears to be appropriate. A north crosscut driven from approximate coordinates 750 W., 350 S. would explore the northward continuation of the large, low grade molybdenum deposit exposed in the present DMEA workings as well as explore the postulated granite ridge previously mentioned. This crosscut could be driven a total distance of 1,400 feet without approaching closer than 200 feet to the boundary of the subordinated ground. The porphyry contact would lie west of the crosscut and roughly parallel it. This target might be explored satisfactorily by diamond drilling.

For reasons outlined above it is recommended that the operator's request for crosscutting northwesterly from the face of the 2nd tunnel shaft level be denied. Should the operator concur, approval of a 1,000-foot long crosscut north from approximate coordinates 750 W., 350 S. is recommended in lieu of the requested northwesterly crosscut. This work can be presented under the terms of the amended contract.

E. N. Harshman

E. N. Harshman

M. H. Salsbury

M. H. Salsbury

ENHarshman:mp

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
August 22, 1958

DMEA
RECEIVED AUG 26 1958

DATE	INITIALS	
8/25	C	220
8/26		130
	Memphis	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the original and two copies of a joint memorandum, dated August 22, 1958, from M. H. Salsbury, Mining Engineer, Bureau of Mines, and E. H. Harshman, Geologist, Geological Survey, and Member of the DMEA Field Team, Region III, pertaining to the Operator's request of August 14, 1958 for Government approval to extend the No. 1 north crosscut in Area A north an additional 1,000 feet.

Two copies of the Operator's request of August 14 were forwarded to you by copies of our memorandum of August 15, 1958 to the field examiners, requesting their recommendations.

roval for the work as recommended by the field examiners is contingent on the execution of an amendment to the contract to permit the performance of Stage II work in Area A as well as in Area B.

Extent of the extension of the No. 1 north crosscut will depend on conditions encountered as the work progresses. However, in no event, will it be extended more than approximately 900 feet, in order to stay 200 feet inside of the property boundary.

It is recommended that an amendment to the contract be prepared to provide that Stage II drifting, crosscutting, and diamond drilling may be performed in Area A as well as in Area B, subject to prior written approval by the Government.

The memorandum report, dated August 21, 1958, referred to in the latter portion of the memorandum report enclosed herewith, will be forwarded at a later date in conjunction with crosscutting north from the Second Tunnel Shaft Level West.

J. W. Townsend

J. W. Townsend

WO

DMEA IN REPLY REFER TO:

DEPARTMENT OF THE INTERIOR

AUG 22 1958

REGION III

DENVER, COLORADO

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

August 22, 1958

Memorandum

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

From: M. H. Salsbury
E. N. Harshman

Subject: DMEA Docket 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Questa mine), Taos County, New Mexico

In a letter dated August 14, 1958, the operator requests approval under Stage II of the contract to extend the No. 1 crosscut north an additional 1,000 feet.

Additional work northward in the No. 1 north crosscut will require an amendment to the contract for, as shown on maps accompanying the contract, the No. 1 north crosscut is in Project Area A and Stage II work is limited to Project Area B. Although the dividing line between Project Areas A and B is not precisely defined in the contract, it appears to be a north-south line at about coordinate E 900.

The No. 1 north crosscut was turned from the 2nd tunnel shaft level west drift at coordinates E 1200, S 90 and driven north by the operator, at first without Government assistance and subsequently with Government assistance. The face of the crosscut is at coordinate N 850.

? No. mc

The justification for exploration to the north is: (1) the postulated presence of a granite ridge striking westerly from the old mine workings in the area 1,000 to 2,000 feet north of the 2nd tunnel shaft level (west drift), a structural feature believed to have controlled ore deposition in the Questa mine, (2) the fact that the northernmost workings and drill holes have penetrated material containing significant amounts of MoS_2, (3) the fact that there is no indication that the present north limits of the deposit have been reached, and (4) the presence of significant geochemical anomalies north of the northernmost workings on the 2nd tunnel shaft level which appear to coincide with the position of the postulated granite ridge.

Exploration under the terms of the present contract could be approved north from the face of the No. 2 crosscut north at coordinates 430 E, 410 N. This does not appear advisable for (1) a horizontal drill hole has been drilled north from the face for a distance of 500 feet and an extension of the drift would in part duplicate exploration accomplished by the drill hole, (2) the drift and drill hole are for the most part in "green rock" and extreme difficulty has been experienced in maintaining the openings, (3) the "green rock" is considered to be less favorable than granite as a host rock for MoS_2.

For the reasons outlined above it is recommended that the contract be amended to permit the extension of the No. 1 crosscut north

The No. 1 north crosscut is entirely within granite and 100-foot composits of assays on samples in the crosscut range from 0.25 percent MoS_2 to 0.32 percent MoS_2. Samples for the last 100 feet of the crosscut contain an average of 0.28 percent MoS_2.

All work completed under the DMEA contract has been done in closely fractured rock, principally granite and "green rock", containing visible MoS_2. Cut samples of the mine workings and sludge and core samples of the drill holes average about 0.25 percent MoS_2. It is noteworthy that out of the hundreds of samples taken to date only two contained no MoS_2 and only seven contained more than 1.00 percent MoS_2. Exploration to date suggests the presence of at least 100,000,000 tons of low grade ore in the area partially explored with DMEA assistance, and the limits of the deposit have not been determined.

Work in the No. 4 crosscut south, turned from the 2nd tunnel shaft level at approximate coordinates 300 W., 300 S., and currently about 1,250 feet in length, has shown that on that level at least, MoS_2 content of the fractured rock has slowly decreased from about 0.25 percent to about 0.10 percent. It appears that the No. 4 crosscut should be stopped at the approved length of 1,500 feet and that additional crosscutting should be done to the north of the 2nd tunnel shaft level.

Crosscutting north of the 2nd tunnel shaft level at approximate coordinate 750 W was recommended in a memorandum dated August 21, 1958, and is permissible under the terms of the present amended contract.

and to permit Stage II drilling from the extended crosscut. Prior Field Team approval should be required for the recommended crosscutting and drilling.

In summary, exploration in the area north of the present workings would consist, of (1) crosscutting north from the 2nd tunnel shaft level at approximate coordinates 750 W, 350 S, as recommended in a memorandum of August 21, 1958, under the terms of the present amended contract, (2) if the contract is amended, extending the No. 1 crosscut north, and (3) diamond drilling from these proposed crosscuts.

M. H. Salsbury

M. H. Salsbury

E. N. Harshman

E. N. Harshman

8/25 C 220
8/27 C.E.T. 800
" Chm 700
(Murphy)

25th Ave Customhouse
Denver 2, Colorado

August 20, 1958

Memorandum

To: E. H. Harshman
M. E. Salsbury, DMEA/DPC

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract IAm-[illegible]
Molybdenum Corporation of America (Maly or Questa mine)
Taos County, New Mexico

Enclosed are one copy each of two letters from the subject Operator, dated August 18, 1958, whereby the Operator requests the following:

1. Government approval to change the location of diamond drill hole No. 16 from North 45 degrees East to North 60 degrees East, in order to better follow the Porphyry contact and to facilitate drilling.

2. Government concurrence to discontinue drilling in diamond drill hole No. 15 at 845 feet, due to difficult drilling conditions encountered.

Please forward to this office a joint memorandum containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND
J. W. Townsend

Enclosures

JBC:bmh

cc: Chem. Op. Comm. (2) w/copy Operator's
Corres.File, Reg.III) two letters 8/18/58
Cooper
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
AUG 20 1958
REGION III
DENVER, COLORADO

August 18, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4568
(Molybdenum)
Contract IDM-E 1094
Molybdenum Corporation
of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application to change the direction of Diamond Drill Hole No. 16 to North 60 degrees East instead of North 45 degrees East as planned in the contract.

Changing the direction of the hole to North 60 degrees East would more or less follow the contact of the Porphyry and should be better drilling.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

DMEA
DEPARTMENT OF THE INTERIOR
AUG 20 1958
REGION III
DENVER, COLORADO

August 18, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4568
(Molybdenum)
Contract IDM-E 1094
Molybdenum Corporation
of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application under Stage I, area A of the contract to stop Diamond Drill Hole No. 15.

We drilled Hole No. 15 to a depth of 245 feet. It was in Aplite for the first 30 feet then in Porphyry to 245.

The ground was squeezing badly at 30 feet and 150 feet. Tried reaming the hole but it would squeeze so bad we had a hard time getting the reaming bit out.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

Chairman, DMEA

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 1958

DATE	INITIALS	CODE
8/20	J.g.	225
"	MM	700

DN 235 BUR MINES 7-19-58 4-29

CHAIRMAN, OPERATING COMMITTEE, DMEA

REURTT AUGUST 19 DOCKET DMEA 4568, CONTRACT IDM-E1094, MOLYBDENUM CORP. OF AMERICA. OPERATOR S REPRESENTATIVE IN NEW YORK AND WILL NOT RETURN TO PERMIT CONTACT WITH HIM PRIOR TO AUGUST 25. PLEASE HOLD MATTER IN ABEYANCE FOR FURTHER RECOMMENDATIONS.

J W TOWNSEND

3

Noted

Denver, Colorado.

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

AUG 20 8 44 AM '58

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/18	Murphy	700
8/18	Kubesh	700
8/19	[illegible]	130
8/19	Jones	130
8/19	Nelson	130
"	Johnson	110
"	[illegible]	100
8/20	N. G.	220
		700

AUG 19 1958

DEPT. OF THE INTERIOR

DMEA

14X4401(01) REVOLVING FUND
DEFENSE PRODUCTION ACT,
INTERIOR (TRANSFER TO OFFICE OF
SECRETARY)

T E L E T Y P E

J. W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION 3
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REURTT AUGUST 14, DOCKET DMEA 4568, MOLYBDENUM CORPORATION OF AMERICA. IN LIEU OF EXTENDING WEST DRIFT SUGGEST THAT THE AREA BE FIRST EXPLORED BY DRILLING A FLAT BX DIAMOND DRILL HOLE. KINDLY CONTACT THE OPERATOR ON THIS MATTER AND ADVISE THIS OFFICE OF ITS AND YOUR RECOMMENDATIONS. IT APPEARS TO US THAT THE PROPHYRY CONTACT WAS REACHED AT ABOUT COORDINATE W-400. IN THE FUTURE PLEASE JUSTIFY REQUESTS FOR AMENDMENTS TO ALL CONTRACTS WITH SUPPORTING DATA.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE (SHB)

FMMurphy/izm 8-18-58

cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Confirmation Copy

8623

DRAFT
8/18/58
FMurphy/gla

DOCKET COPY

not approved

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

Amendment No. 3

It is agreed this _____ day of _____, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Molybdenum Corporation of America, hereinafter called the "Operator," that Exploration Project Contract No. Idm-21094 (Docket No. DMEA-4568), dated May 31, 1957, hereinafter called the "Contract," as amended, is further amended effective August 25, 1958, as follows:

Item 2 of Amendment No. 2, dated January 6, 1958, is deleted and replaced by the following:

"The work consists of extending the Second Tunnel Shaft level in a west or northwesterly direction not to exceed a distance of 800 feet west of coordinate W. 400 shown on map Figure 4. With prior written Government approval, any footage for drifting or crosscutting remaining under Stage II of the contract may be used to explore the granite-porphyry contact that may be exposed in the west Second Tunnel Shaft Level, or to reach other objectives considered favorable in Area B."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the amount of any item designated as maximum.

Executed in quintuplicate the date and year first above written.

THE UNITED STATES OF AMERICA

By_____
Administrator, Defense Minerals
Exploration Administration

MOLYBDENUM CORP. OF AMERICA

By_____

Title_____

August 18, 1958

Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Not approved

JUSTIFICATION FOR AMENDMENT NO. 3

In drafting Amendment No. 2, it was anticipated that in extending the Second Tunnel Shaft Level 400 feet west of coordinate W. 400, it would intercept the granite-glassy volcanic contact (see map "Cross Section C-D" attached hereto). It was thought that a concentration of molybdenum would be found at this contact because of the volcanic's damming effect.

However, apparently the glassy-volcanics do not reach to the depth of the west drift. If this is true, then the best objective is the contact of the granite and porphyry to the west. From the map, referred to above, it would appear that the granite-porphyry contact should be cut at a point about 350 feet west of the face of the west drift (now approximately at the 800 W. coordinate).

It is possible that the porphyry-granite contact shown on the cross-section may dip steeper. In this case a review of the contract should be made after the field examiners submit complete data on the exploration work done in Area B.

F M Murphy

F. M. Murphy

DATE	INITIALS	CODE
8-18	J.J.g.	225
8/18	[illegible]	800
8/19	~~[illegible]~~	700

224 New Customhouse
Denver 2, Colorado
August 15, 1958

Memorandum

To: E. M. Harshman, DMEA/DFC w/enclosure
M. H. Salsbury, DMEA/DFC w/enclosure

From: Alternate Acting Executive Officer, DMEA Field Team, Region XII

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-R1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed is a copy of the Operator's letter of August 14, 1958, which constitutes a request for Government approval for the extension of the second tunnel level northwestwardly a distance of 1500 feet.

Approval for the 1500 feet of drifting will involve an amendment to the contract to eliminate the restriction as to westwardly drifting as provided for in Amendment No. 2. The matter of the amendment was referred to the Washington Office by teletype August 14, 1958.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND

J. W. Townsend

JWT;dz

cc: Chan. Op. Comm. 2 w/cy of Oper. ltr.
Corres. File R1094
Cooper
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
AUG 15 1958
REGION III
DENVER, COLORADO

August 14, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith making application, under Stage II, Area B of the contract for 1500 feet of crosscutting in a northerly direction from the west drift 2nd Tunnel Shaft level at approximately coordinate 800 W.

By going somewhat west of north we will be approaching the east contact of the porphyry near which we would plan to turn more northerly approaching the supposed east west ridge connecting the old mine granite dome with the north end of the surface exposed porphyry.

As has been fully stated, from all experience, we believe the best MoS_2 mineralization will be found in the vicinity of the granite or porphyry contact.

1500 feet would take us to an area the north and west boundary of which can be described roughly as inside of an arc formed by the porphyry and the connecting ridge above defined.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALG

Official

224 New Customhouse
Denver 2, Colorado
August 15, 1958

Memorandum

To: E. N. Harshman, DMEA/DFC w/enclosure
M. H. Salsbury, DMEA/DFC w/enclosure

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. IAm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed is a copy of the Operator's letter of August 14, 1958, which constitutes a request for Government approval to extend the No. 1 crosscut north an additional 1,000 feet.

Approval for the additional crosscutting will involve transfer of drifting footage from Stage II Area B for use in Area A, and in turn will involve an amendment to the contract which can only be prepared in Washington.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND
J. W. Townsend

JWT:dx

cc: Chmn. Op. Comm. 2 w/cy of Operator's ltr.
Corres. File E1094
Cooper
Chron.

Official

DMEA
RECEIVED AUG 18 1958
DATE | INITIALS | CODE

DMEA
DEPARTMENT OF THE INTERIOR
AUG 15 1958
REGION III
DENVER, COLORADO

August 14, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Ref: Docket D.M.E.A. 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith asking your approval under Stage II of the contract for the continuation of the No. 1 Crosscut North, 2nd Tunnel Shaft Level, another 1000 feet in a northerly direction. This work would start at approximately coordinate 845 N and 1160 E and extend to 1845 N.

The major objective would be to get north to the locality of the supposed connecting granite with the large porphyry to the west. Attempts to do this were made further west in No. 2 and No. 5 Crosscuts north. Very soft ground and the absence of granite made it impractical and less advisable to attempt to explore this north country by these crosscuts. Consequently it is considered that extending the No. 1 Crosscut north which has all been in granite will better explore this country.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALG

Mr. G. Selfridge

RECEIVED AUG 15 1958

DMEA

DATE	INITIALS	CODE
8/15	H. G.	385
	Murphy	708

DN 235 BUR MINES 8-14-58 10-26

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA 4568, CONTRACT IDM-E1094, MOLYBDENUM CORPORATION OF AMERICA. AMENDMENT NO. 2, ITEM 2. CONDITIONS ENCOUNTERED MAKE IT DESIRABLE TO FURTHER EXTEND WESTERLY DRIFT BUT IN A NORTHWESTERLY DIRECTION TO MORE READILY ENCOUNTER PORPHYRY CONTACT AND THEN POSSIBLY CONTINUE DRIFT NORTHERLY TO NORTHEASTERLY TO FOLLOW CONTACT. 1,000 TO 2,000 FEET OF DRIFTING MAY BE INVOLVED, DEPDNING XXX DEPENDING ON CONDITIONS ENCOUNTERED AS THE WORK PROGRESSES. ABOUT 3,500 FEET OF [illegible]AGE 11 DRIFTING REMAINS. RECOMMEND PREPARATION OF AN AMENDMENT TO [illegible]OVE RESTRICTION AS TO WESTERLY EXTENSION IN AMENDMENT 2, AND INSTEAD [illegible]OVIDE FOR DRIFTING IN ANY DIRECTION IN ORDER TO FOLLOW STRUCTURE OR REACH OBJECTIVES CONDIXX CONSIDERED FAVORABLE. ALL SUCH DRIFTING TO BE SUBNXXX SUBJECT TO PRIOR GOVERNMENT APPROVAL. OPERATORS WILL NEED APPROVAL FOR FIRST 500 FOOT SECTION BY AUGUST 27 IN ORDER TO ASSURE CONTINUITY OF OPERATION. PLEASE TELETYPCE ADVICE AS TO YOUR DECISION.

J W TOWNSEND

Henner, Colo.

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.
AUG 14 1 45 PM '50

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

AUG 5 - 1958

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094, Molybdenum Corporation of America, (Moly or Questa mine) Taos County, New Mexico

Enclosed are three copies of a work approval issued by the DMEA Field Team, Region III, for the drilling of four holes under Stage II of the contract.

Also enclosed are three copies of a joint memorandum from R. U. King, Geologist, Geological Survey, and M. H. Salsbury, Mining Engineer, Bureau of Mines, containing their recommendations in the matter. Two copies of the Operator's request, dated July 28, 1958, were forwarded to you by our memorandum of July 30, 1958, to the field examiners.

Copies of the work approval have been distributed to the Operator, the Finance Office, and to others concerned, in Region III.

J. W. Townsend

Enclosures

8/8 C 220
~~4444~~ 700

25th New Customhouse
Denver 2, Colorado

AUG 5 - 1958

Mr. J. B. Carman
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract IAm-21094
Molybdenum Corporation of America
(Maly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of July 28, 1958, this constitutes the Government's approval for drilling the following four holes under the provisions of Stage II of the contract:

Hole No.	Location	Coordinates	Bearing	Inclination
19	Face No. 2 X-cut N	E 425, N 410	North	-45°
20	Face No. 5 X-cut S	E 400, S 590	South	0°
21	Face No. 5 X-cut S	E 400, S 590	S 45° E	-45°
23	No. 3 X-cut S	E 400, S 220	—	-90°

Government approval for drilling of proposed Stage II hole 22 cannot be given until the results obtained from drilling holes 20 and 21, have been furnished to the Government as the results of holes 20 and 21 will be used in determining proper bearing and inclination of hole 22. As soon as holes 20 and 21 have been completed you should forward the results of the drilling to this office, together with a written request for the drilling of hole 22.

Nothing in this work approval shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

JDC:hmh

cc: Chmn. Op. Comm. (3)
Finance Office, Reg.III
Amendmend file, Reg.III
Harshman
DMEA/DFC(Salsbury)
Corres.file, Reg.III
Cooper
Chron

cc: A. L. Greslin, Manager
Questa,
New Mexico

Very truly yours,

DMEA Field Team, Region III

By J. W. Townsend
J. W. Townsend

By E. M. Harshman
E. M. Harshman

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
AUG 1 - 1958
REGION III
DENVER, COLORADO

July 31, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
M. H. Salsbury

Subject: DMEA Docket 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator in a letter dated July 28, 1958, requested approval of five Stage II holes as follows:

Hole No.	Location	Coordinates	Bearing	Inclination
19	Face No. 2 X-cut N	E 425, N 410	North	-45°
20	Face No. 5 X-cut S	E 400, S 590	South	0°
21	Face No. 5 X-cut S	E 400, S 590	S 45° E	-45°
22	Face No. 5 X-cut S	E 400, S 590	S 45° W	-45°
23	No. 5 X-cut S	E 400, S 220	--	-90°

The objective of these holes, to explore the marginal zone in and above the soda granite for disseminated molybdenite, was discussed with Mr. Carmon, Manager, Questa mine. Holes 19 and 20 will explore the ground beyond (north and south of) the points reached in the exploration crosscuts; and holes 21, 22, and 23 will explore at depth below the No. 2 shaft tunnel level.

It is recommended that the operator's request to drill the above holes be approved in accordance with the contract but with a provision that hole 20 shall be the hole next drilled after completion of one or the other of the -45° holes (21 or 22), in order to allow for possible changes in bearing and inclination in the final drill hole should the results of the first two of these holes so indicate.

R. U. King, Geologist

M. H. Salsbury, Mining Engineer

RUKing:arh

224 New Customhouse
Denver 2, Colorado
July 30, 1958

8/4 H. J. 285
8/5 800
8/5 700

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC (Salsbury) - w/enclosure

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine) Taos County, New Mexico

Enclosed is a copy of a letter from the subject Operator, dated July 28, 1958, requesting the Government's approval for the drilling of five holes under Stage II of the contract.

Please review the Operator's request and submit to this office a joint memorandum containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND
J. W. Townsend

JDC:hmh

cc: Chmn. Op. Comm. (2)) w/copy of Operator's
Corres.file, Reg.III) letter of 7/28/58
Cooper
Chron

DMEA
DEPARTMENT OF THE INTERIOR
JUL 30 1958
REGION III
DENVER, COLORADO

July 28, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We ask approval of the following as part of the tentative Area B Stage II drilling program.

We have designated these proposed drill holes by numbers, location and direction.

Hole #19: In the breast of No. 2 Crosscut North at approximate Coordinates E 425--N 410. Bearing North. Inclination minus 45 degrees.

Holes #20, 21 and 22 located in the breast of No. 5 Crosscut South (new) approximately at coordinates E 400, S 590. Hole #20 to bear south at zero degrees inclination. Hole #21 to bear south 45° east at minus 45° inclination. Hole #22 to bear south 45° west at minus 45° inclination.

Hole #23 located in No. 5 Crosscut South (new) near West Drift at approximate coordinates E 400, S 200-240 (at a convenient location) to bear at zero degrees at minus 90° inclination.

As this work is merely extending the exploration beyond the points reached by the drifts and follows the original plan, we trust that you will approve this request.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J. B. Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALG

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

JUN 25 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 27 1958
DATE | | CC
6/27 | C | 220
6/27 ~~7114~~ | | 700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of project work approval issued by the DMEA Field Team, Region III, pertaining to additional work in Area B under Stage II of the contract.

Also enclosed are three copies of a joint memorandum, dated June 20, 1958, from R. U. King, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to the additional work.

Copies of the work approval have been distributed to the Operator, the Finance Office, and others concerned in Region III.

J. W. Townsend

J. W. Townsend

Enclosures

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

JUN 23 1958
REGION III
DENVER, COLORADO

RECEIVED JUN 27 1958

June 20, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator of the subject contract in a letter dated May 29, 1958, requests approval to continue crosscut No. 4 (Coord 300 W) from Coord 1300 S for 500 feet southward to approximately Coord 1800 S.

Since Crosscut No. 4 south has been driven in mineralized rock (porphyry, green rock, granite) to date, and the grade of mineralization is reported to be increasing, it is recommended that the operator's request be approved.

R U King
R. U. King, Geologist

for H. M. Connors
W. W. Winkel, Mining Engineer

RUKing:arh

DME
RECEIVED JUL 27

Denver 2, Colorado
224 New Customhouse
June 23, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-M1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of May 29, 1958, this constitutes approval by the Government for the driving of the No. 4 crosscut south, in Area B, an additional 500 feet under the provisions of Stage II of the contract, except that the crosscut shall be stopped short of that distance if the tunnel penetrates rock which does not contain visible molybdenum over a section measuring approximately 50 feet in length, as provided for in the contract.

Nothing in this approval of additional work under Stage II of the contract shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, the fixed unit cost of any item of work, nor any item of allowable cost which is expressly designated "maximum."

Very truly yours,

DMEA Field Team, Region III

By J. W. Townsend
J. W. Townsend

By E. W. Harshman
E. W. Harshman

cc. Mr. A. L. Crevelin, Manager
Molybdenum Corporation of America
Questa, New Mexico

JWT:prl
cc: Chmn.Op.Comm. (3)
Finance Office, Reg. III
Amendment file, Reg. III
Harshman
DMEA/DFC(Salsbury)
Corres. file
Cooper
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 4 1958
DATE INITIAL ZONE
6/4 C 220
6/4 800
~~Monday~~ 700

224 New Customhouse
Denver 2, Colorado
June 2, 1958

Memorandum

To: K. H. Murphman - w/enclosure
DMEA/WPO (Windal) - "

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. DMI-8108, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of May 29, 1958, requesting the Government's approval for 300 feet of additional crosscutting on the No. 4 south crosscut.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
J. W. TOWNSEND

J. W. Townsend

JWTmpl

cc: Chem. Op.Comm.-2 } w/copy of
Operat. file } Operator's
letter.

Townsend
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
JUN 2 - 1958
REGION III
DENVER, COLORADO

May 29, 1958

Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

We are herewith asking your approval for the continuation of Crosscut No. 4 S an additional 500 feet.

More specifically, Crosscut No. 4 S comes under Area B, Stage II of the contract. It goes south off the west drift 2nd Tunnel Shaft level at coordinate approximately 300 W and has your approval (Ref. Your letter 4/17/58) to approximately coordinate 1300 S. Also, please Refer your letter December 26, 1957 and our letter December 10, 1957.

The drift west is being driven as required by your approval of April 17, 1958.

This crosscut has encountered continuous mineralization.

It emerged from the porphyry, entered green or transition rock, then for over 100 feet it has been in MoS2 mineralized granite.

Recent car sample assays have been up to 0.27% MoS2.

The crosscut has progressed to within 200 feet of the approved point, approximately coordinate 1300 S, and is advancing at the rate of about 50 feet per week.

Nothing has been found to discourage our reasons or objectives outlined in our letter of December 10, 1957. In fact, we consider the disclosure of granite in this crosscut favorable.

We trust you will see fit to approve our request.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

By J B Carman

J. B. Carman

JBC:r

Original & 5 Copies ✓

CC: MH
ALG

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

DATE	INITIALS	CODE
5/12	C	226
5/12	[illegible]	800
	[illegible]	700

224 New Customhouse
Denver 2, Colorado
May 8, 1958

Mr. Marx Hirsch, President
Molybdenum Corporation of America
375 Park Avenue
New York, New York

Re: Docket No. DMEA 4568 (Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Hirsch:

Form MF-104, Operator's Monthly Report and Voucher, for March 1958, has been received in this office and is being processed for payment.

By letter of April 17, 1958, the Government approved the discontinuance of hole 13A at a depth of 200 feet due to bad ground encountered in the hole; therefore, the previously disallowed cost for 200 feet of drilling, 70 feet of reaming and casing, and 20 chemical analyses applicable to hole 13A, has been reinstated.

You will be further advised of the reinstatement by means of an Administrative Audit Difference Statement, which will be forwarded to you by the Finance Office, Region III.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file, Reg. III
Chron

cc Mr. A. L. Greslin
Questa, New Mexico

Mr. J. B. Carman
Empire, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

DATE	INIT.	CODE
5/12	C	220
11	EMH	100

224 New Customhouse
Denver 2, Colorado
May 8, 1958

Memorandum

To: Chairman, Operating Committee

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

Enclosed are two copies of a letter from this office dated May 8, 1958, pertaining to continued drilling of Stage I hole No. 3, in Area A. Also enclosed are three copies of a joint memorandum dated May 5, 1958, from R. U. King, Geologist, Geological Survey and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to the matter.

E. N. Harshman

E. N. Harshman

DMEA
RECEIVED MAY 12 1958
DATE

224 New Customhouse
Denver 2, Colorado
May 8, 1958

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4368 (Molybdenum)
Contract 18m-31094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Reference is made to your letter of April 14, 1958, the reply from this office dated April 16, 1958, and your letter of April 26, 1958, all in reference to the drilled depth of Stage I hole No. 3, in Area A.

Since you have found that hole No. 3 encountered molybdenum mineralization throughout its drilled length of 372 feet, it is the desire of this office that the hole be continued to its original objective length of 500 feet, unless the hole penetrates rock not containing visible molybdenum mineralization for a distance of 20 feet as stipulated in the contract.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

cc: J. D. Gatman
Grad Mine
Empire, Colorado

JWT:dp
cc: Chum. Op. Comm. (2)
Harshman
DMEA/RFC Winkel
Corres. File
Townsend
Chron.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
MAY 6 1958
REGION III

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 12 1958

DATE	INIT.	CODE

May 5, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: Docket DMEA 4568 (Molybdenum), Contract Idn-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

In letters dated April 14 and 26, 1958, the operator (first) reported that Hole No. 3 (S 50, E 1800) penetrated 322 feet of MoS_2 mineralized rock and 50 feet of barren rock, and (later) that the hole was in MoS_2-bearing ground for its entire length of 372 feet.

Inasmuch as the operator states that the hole is open, and it appears that the ground being explored by this hole contains visible MoS_2, we recommend that the hole be reoccupied and drilled to the maximum allowable depth of 500 feet as provided for in the contract.

Although assays are not submitted, the operator states that significant MoS_2 mineralization is visible in the core, and that assays confirm the visual determination.

Hole No. 3 was located, and directed (+45°, north) so as to penetrate the marginal zone of the intrusive soda-granite, roughly

parallel to its contact with overlying green rock. It is therefore properly located to explore this favorable zone for low grade disseminated MoS_2,aabove the 2nd tunnel shaft level. In view of the wide lateral extent of exploration accomplished on this level it seems important to the maintenance of a balanced project to obtain as much information as possible in the vertical dimension. Whether or not the granite-green rock contact is crossed by the hole when deepened, valuable information on the attitude of the structure and its relationship to disseminated MoS_2 mineralization will result.

R. U. King
Geologist

W. W. Winkel
Mining Engineer

RUKing:mp

224 New Customhouse
Denver 2, Colorado
April 30, 1958

DMEA
RECEIVED MAY 5
DATE

Memorandum

To: E. N. Harshman - w/enclosure
W. W. Winkel - " "

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

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094, Molybdenum Corporation of America, (Moly or Questa mine) Taos County, New Mexico

Enclosed is a copy of a letter dated April 26, 1958, from the subject Operator concerning possible deepening of Hole No. 3, in Area A under Stage I, if the Government considers it desirable.

The Operator originally reported by letter of April 14, 1958, that there was no visible mineralization in the last 50 feet of core in hole No. 3, which had been stopped at the present depth of 372 feet. However, upon re-examination the hole has been found to contain mineralization throughout the length of the hole.

Please submit a joint memorandum containing your recommendations regarding the deepening of hole No. 3.

Original signed by
E. N. HARSHMAN
E. N. Harshman

JDC:hmh

cc: -Chmn. Op.Comm. (2) }
Corres.file,Reg.III } w/copy of Oper. ltr. of 4/26/58

Townsend
Chron

Molybdenum Corporation of America

500 Fifth Avenue
New York

QUESTA UNIT
TELEGRAPH ADDRESS
W. U. VIA TAOS, N. M.

PLEASE REPLY TO
QUESTA, NEW MEXICO

DMEA
DEPARTMENT OF THE INTERIOR
APR 29 1958
REGION III
DENVER, COLORADO

Questa, New Mexico
April 26, 1958

Mr. E. N. Harshman, Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
Molybdenum
Contract No. IDM-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

Please refer to your letter of April 16, 1958, concerning the stopping of drill hole No. 3, Area A under stage I of the contract.

After examining the core further and getting the analyses on the core and the sludge, to a depth of 372 feet we can see that there is MoS_2 in all the core.

The hole is open and can be drilled deeper if you think we should, although, I don't believe it will prove of much value beyond the 372 feet now drilled.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

cc: J.J.C.
M.H.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado
April 17, 1958

4/21 C 220

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of confirmation of work approval and Government concurrence in the stoppage of certain work as issued by the DMEA Field Team, Region III.

Also enclosed are three copies of a joint memorandum, dated April 15, 1958, from R. U. King, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to the matters under items 1 to 3 inclusive.

Copies of the letter have been distributed to the Operator, the Finance Office, and others concerned in Region III.

E. N. Harshman

E. N. Harshman

Enclosures

USA War Department
Denver 8, Colorado
April 17, 1958

Mr. J. R. Gannon
Weak Mine
Ingalls, Colorado

Re: Contract No. DA04 1968 (Molybdenum)
Contract No. DA-2-2029
Molybdenum Corporation of America
(Daly or Quartz mine)
San Juan, New Mexico

Dear Mr. Gannon:

In reference to your three letters, dated April 10, 1958, Government approval is as follows:

1. Confirmation of verbal approval, given April 14, 1958, for the driving of the 2-1 crosscut north at additional 300 feet to that approved by the USA Field Team, Region XII, under date of December 26, 1957; except that the crosscut shall be stopped short of that distance if the tunnel penetrates rock which does not contain visible molybdenite over a portion measuring approximately 30 feet in length, as provided for in the contract.

   The foregoing approval for continuation of the south crosscut is given with the contingent provision that in the event the continuity extension of the drift on the tunnel level which lies and the south crosscut cannot be extended continuously that preference will be given to the continued extension of the drift continuity as approved by the USA Field Team, Region XII, by letter of January 27, 1958.

2. Concurrence to stopping drill hole No. 12-4 at a length of approximately 300 feet because of the extremely unconsolidated ground conditions encountered which make the hole untenable. The foregoing approval is given contingent on the understanding that all reasonable precautions will be taken in drilling other

holes in the future, by connecting and drilling out or reaming and casing, as provided for in the contract, to assure continuance of holes drilled in the future to their stated objectives.

3. Concurrence to shorten the north crosscut off the westerly drift of the Sequoyah Shaft level at a length of approximately 168 feet, because of soft, caving ground conditions, instead of driving the crosscut the full distance of 400 feet as approved by the DMEA Field Team, Region III, under item 1 of a letter dated December 13, 1957.

Nothing in this confirmation of work approval and concurrence in work stoppage shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By E. N. Hardman
E. N. Hardman

By J. V. Tonnesen
J. V. Tonnesen
Acting Member

cc: Mr. A. L. Gresin
Molybdenum Corporation of America
Questa, New Mexico

JVT:grl

cc: Chem. Op. Comm. (3)
Finance Office, Region III
Assignment File, Region III
Hardman
DMEA/DPC (Winkel)
Central File
Tonnesen
Chron.

IN REPLY REFER TO:

DMEA
DEPARTMENT OF THE INTERIOR
APR 16 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

April 15, 1958

Office Mail Sta. DMEA
RECEIVED APR 21 1958
DATE | INITIALS | CODE
EMH

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: DMEA Docket 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator of the subject contract project requested in three letters dated April 8, 1958, that the Government (a) approve stopping of hole 13A at 200 feet, (b) approve stopping no. 5 north crosscut at 169 feet, and (c) approve continuation of no. 4 crosscut south an additional 500 feet.

Hole no. 13A was lost at 200 feet as a result of caving of the hole, caused by the highly fractured and altered condition of the mineralized rocks. In view of the costly experiences resulting from attempting reentry and deepening of holes 7 and 17 by reaming and casing through bad ground, the operator concludes that he is not likely to succeed in attempts to continue hole 13A. The operator also concludes that the hole has served its main exploration purpose and that little additional information would be gained by continuing the hole. No supporting data is given for this conclusion. Hole 13A (+45°,

south) was substituted for hole 13 (-90°) to explore for disseminated molybdenite in the green rock that overlies the soda granite. The substitution was based on new information obtained during the progress of the contract project (Joint Engineering and Geologic Report, 11-20-57). According to the drillers' log, hole 13A penetrated 180 feet of "Transition" rock and was in granite from that point to the bottom. Molybdenite content ranges from 0.07 to 0.52 percent, and averages better than 0.3 percent MoS_2 for the last 20 feet.

Although we are inclined to agree with the operator's request to stop the hole on the basis of the engineering problems involved, we wish to point out that exploration above and south of the 2nd tunnel shaft level, is likely to be critical to the successful prosecution of this project and therefore every precaution should be taken to assure completion of holes 5 and 10. It is recommended that the operator's request to abandon hole 13A at 200 feet be approved.

No. 5 crosscut north was driven for 169 feet in mineralized and highly altered "Transition" rock; the MoS_2 content of the rock averages about 0.17 percent. It is the operator's contention that due to the swelling ground, it would be impossible to continue the crosscut except at undue costs of retimbering. In view of the engineering problem involved and the proximity of this crosscut to no. 2 crosscut north, we recommend that the crosscut be approved as completed to 169 feet.

No. 4 crosscut south (coord. W 300) is reported to be in significantly mineralized green rock at 475 feet. MoS_2 content of the

various rocks penetrated, including granite porphyry, "Transition" rocks, and green rock averages about 0.15 percent for the first 300 feet. The operator reports a significant increase in the MoS_2 content over the last 100 to 150 feet. Inasmuch as the grade of the mineralization is as good or better than that observed in much of the previous tunnelling and as favorable host rocks (granite porphyry) occur on the surface south and west of the crosscut, we recommend approval of continuing the no. 4 crosscut south for an additional 500 feet, subject to provisions in the contract relating to visible MoS_2 mineralization.

Since advance of the west drift, already approved, has not been started by the operator as of this date, we suggest that some provision be made to enforce prosecution of the west drift in the event that either engineering problems or geologic conditions cause discontinuance of any work.

R. U. King
Geologist

W. W. Winkel
Mining Engineer

RUKing:mp

RECEIVED APR 21

4/21	WJ	
22	FMM	

[illegible] Bar Construction
Denver 2, Colorado
April 16, 1958

Mr. A. L. Gaudin, Manager
Molybdenum Corporation of America
Questa, New Mexico

In: Project No. NMRA 4263 (Molybdenum)
Contract No. [illegible]
Molybdenum Corporation of America
(Daly or Questa mine)
Taos County, New Mexico

Dear Mr. Gaudin:

Reference is made to your letter of April 14, 1958 and NMRA Field Team, Region III, concurrence, dated April 1, 1958, for the discontinuance of Stage 2 drill hole No. 7 in Project Area A.

The depth figure of 414 feet used in the first paragraph of the Field Team's concurrence of April 1, 1958 is changed to read 417 feet.

Nothing in this change in drill footage depth shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

NMRA Field Team, Region III

By E. M. Henderson
E. M. Henderson

By J. W. Forrest
J. W. Forrest
Acting Member

cc: Mr. J. B. Cannon
Uval Mine
Eagle, Colorado

JWF:gvl
cc: Finance Office, Reg. III
✓Chem. Op. Chem.-3
Amendment file,
Region III
Northwest
NMRA/IVC-Kimball
Corres. file
Tormont
Chron.

w/copy of Operator's letter of April 14.

Molybdenum Corporation of America
500 Fifth Avenue
New York

QUESTA UNIT
TELEGRAPH ADDRESS
W U VIA TAOS, N. M.

DMEA
DEPARTMENT OF THE INTERIOR

APR 16 1958
REGION III
DENVER, COLORADO

PLEASE REPLY TO
QUESTA, NEW MEXICO

Questa, New Mexico
April 14, 1958

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
234 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
(Molybdenum)
Contract No. IDM-E1094
Molybdenum Corporation of
America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

Please refer to my letter of March 29, 1958 and your reply of April 1, 1958 by which approval was given to discontinue Stage I, Drill hole No. 7.

I made a mistake in stating the depth of the hole at 414 feet. It was actually 417 feet. You will notice on our drill map and report for March 1958, that it will be 417 feet.

I'm sorry I got the wrong figure when I wrote you before.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

254 New Customhouse
Denver 2, Colorado
April 16, 1958

4/21
4/22

Mr. A. L. Gwalin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Mm-8169A
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Gwalin:

Reference is made to your letter of April 14, 1958, concerning the depth of drilling in hole No. 3 in Area A under Stage I of the Contract.

In reference to the depth of drilling, you are referred to the provision in the first paragraph on page 3 of Exhibit "A" attached to the Contract, which states,

> "..... no hole shall penetrate more than 20 feet into rock that contains no visible molybdenum mineralization."

Under the circumstances, it appears that drill hole No. 3 should have been stopped at about 348 feet if, as you state, there was no visible molybdenum in the last 30 feet of core obtained in drilling the hole to a depth of 378 feet.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

cc: Mr. J. B. Carman
Urad Mine
Empire, Colorado

JWT:pel
cc: Chmn.Op.Comm.-2
Harshman
DMEA/DFC-Winkel
Corres. file
Townsend
Chrom.

} w/copy of Operator's letter of April 14.

Molybdenum Corporation of America

500 Fifth Avenue
New York

QUESTA UNIT
TELEGRAPH ADDRESS
W. U. VIA TAOS, N. M.

DMEA
DEPARTMENT OF THE INTERIOR

APR 16 1958
REGION III
DENVER, COLORADO

PLEASE REPLY TO
QUESTA, NEW MEXICO

Questa, New Mexico
April 14, 1958

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
Contract No. IDM-E 1094
Molybdenum
Molybdenum Corporation
of America
Moly or Questa Mine
Taos County, New Mexico

Dear Mr. King:

This is with reference to our telephone conversation this A.M. with Mr. E. N. Harshman, regarding our request to stop drilling on hole No. 3, Stage I, Coordinate E 1800 and about S-50.

This hole was drilled to 372 feet with very little visible MoS_2 showing the last 100 feet, and we could see no MoS_2 in the last 50 feet of core.

Yours very truly

A. L. Greslin

A. L. Greslin, Manager

OFFICIAL FILE COPY
DMEA
RECEIVED APR 14 1958

DATE	INITIALS	CODE
4/15	[illegible]	[illegible]
4/15	[illegible]	[illegible]
"	Murphy	[illegible]

224 New Customhouse
Denver 2, Colorado
April 10, 1958

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC (Winkel) - " "

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of April 8, 1958, requesting a 500-foot extension of the south crosscut approved by the DMEA Field Team, Region III, on December 11, 1957, which was confirmed by letter of December 26, 1957.

Please submit a joint memorandum report containing your recommendations relative to the Operator's request.

Original signed by
E. N. HARSHMAN

E. N. Harshman

JWT:prl

cc: Chmn.Op.Comm.-2) w/copy of
Corres. file) enclosure.
Townsend
Chron.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
Empire, Colorado

April 8, 1958

ORIGINAL FILE COPY
DMEA
RECEIVED APR 14 1958
EXPLORATION

Mr. W. H. King, Executive Officer DMEA
Field Team Region 111
U.S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico.

Dear Mr. King:

Please refer to my letter of Dec. 10, 1957 and your reply of Dec. 26th, by which approval was given for the work request, item B, to be driven south 500 ft.

The location of this crosscut is shown on the map entitled, " Plan of Western Part of 2nd Tunnel Shaft Level Workings Showing Location and Extent of Recommended Exploration, Questa Mine, Molybdenum Corporation of America, DMEA 4568".

As of April 1, 1958 the crosscut had been driven 437 ft of the alloted 500 ft. In this distance it had emerged from the porphyry, in which it started, entered transition rock and then what is thought to be granite.

In the transition rock and the granite the MoS_2 values have been better. For the last 134 ft the car samples averaged 0.28 % MoS_2 with assays up to 0.60%.

Persuing the objectives outlined in my letter of Dec. 10, '57 it appears that 1 and 2 have been reached with fairly good results, at least with enough encouragement to justify continuing the crosscut. We therefore are asking for the approval of an additional 500 ft, in this crosscut.

We are nearing the end of our allotment and we would very much appreciate a prompt decision in order to properly program our mine work.

Yours very truly,

Molybdenum Corporation of America

By J.B. Carman
J.B. Carman

cc A. L. Greslin, Questa N.M.
Marx Hirsch
375 Park Ave.
N.Y. 22, N.Y.

OFFICE OF DMEA
RECEIVED APR 14 1958
DATE | INITIALS | CODE
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" | | 7

224 New Customhouse
Denver 2, Colorado
April 10, 1958

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC (Winkel) - " "

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of April 8, 1958, wherein they request the Government's approval to consider that drill hole No. 13A be completed at 200 feet, due to severe caving conditions.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
E. N. HARSHMAN

E. N. Harshman

JWT:prl

cc: Chmn.Op.Comm.-2) w/copy of
Corres. file) enclosure.
Townsend
Chron.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
Empire, Colorado

April 8, 1958

Mr. W. H. King, Executive Officer, DMEA
Field Team Region 111
U.S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico.

Dear Mr. King:

We are herewith asking that drill hole No. 13A be considered completed at 200' due to severe caving conditions. This hole is located at approximately coordinates 1050 E and 120 S. It bears south and inclines at plus 45 deg. Bad ground was encountered all the way. 70 ft. were cased. At 200 ft after pulling the drillers were unable to get back to the bottom and suspended work on this hole. Since then we have had very bad experiences in trying to gain further footage under similar conditions, having lost rods and bits in holes No. 7 and the vertical hole in Cx # 5 S (Old) . In the case of # 7 Hole we gained but a few more feet in continuing.

We really believe that this Hole, 13A, has served its main exploratory purpose and little additional information would result by continuing it.

Yours very truly,

Molybdenum Corporation of America

By J.B. Carman

J.B. Carman

cc A. L. Greslin, Questa, N.M.
Marx Hirsch
375 Park Ave.,
N.Y. 22, N.Y.

224 New Customhouse
Denver 2, Colorado
April 10, 1958

4/15 D 220
4/15 D 668

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC (Winkel) - " "

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of April 8, 1958, wherein Government approval is requested to suspend the north crosscut located approximately at coordinate 0-0 at a length of 168 feet, because of soft swelling ground conditions.

Please submit a joint memorandum report containing your recommendations in the matter.

Original signed by
E. N. HARSHMAN
E. N. Harshman

JWT:prl

cc: Chmn.Op.Comm.-2) w/copy of
Corres. file) enclosure.
Townsend
Chron.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
Empire, Colorado.

April 8, 1958

DMEA
APR 14 1958

Mr. W. H. King Executive Officer DMEA
Field Team Region 111
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico.

Dear Mr. King:

Kindly refer to your letter of Dec. 11, 1957 "1" in which 400 ft. of north crosscut off the west drift of the 2nd level at about coordinate 0-0 (E-W) was approved .

To date 168 ft of this crosscut has been completed, all in transition rock containing some MoS_2.

At the end of January due to soft swelling ground working in this crosscut was suspended. The thought was that after a period the ground might stabilize somewhat. Since then the ground has continued to "work" and we believe that work here cannot be continued except at a cost not fully warranted by the expected benefit from the work.

We therefore ask that you designate this crosscut completed at 168 ft.

Yours very truly,

Molybdenum Corporation of America

By J.B. Carman

J.B. Carman

cc A.L. Greslin, Questa, N.M.
Marx Hirsch
375 Park Ave
N.Y. 22, N.Y.

DMEA
RECEIVE APR 4 1958

224 New Customhouse
Denver 2, Colorado
April 1, 1958

Memorandum

To: T. A. Christensen

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

Subject: Docket No. 4568 (Molybdenum) Contract Idm-E1094
Molybdenum Corporation of America, (Moly or Questa mine) Taos County, New Mexico

Attached is a copy of a letter dated March 26, 1958, from the subject Operator, requesting a change of mailing address as follows:

Molybdenum Corporation of America
375 Park Avenue
New York 22, New York.

Please forward all future checks and related correspondence to the new address.

Original signed by
E. N. HARSHMAN
E. N. Harshman

Enclosure

JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file, Reg. III
Chron

Molybdenum Corporation of America
375 Park Avenue
New York 22, N. Y.

DMEA
DEPARTMENT OF THE INTERIOR
MAR 31 1958
REGION III
DENVER, COLORADO

March 26, 1958

United States Dept. of the Interior
Bureau of Mines, Region III
224 New Customhouse
Denver 2, Colorado

Dear Sirs:

Re: DMEA Docket No. 4568
Contract No. IDM-E 1094

Please change our New York mailing address for all correspondence relative to the above DMEA contract to Molybdenum Corporation of America, 375 Park Avenue, New York, N. Y.

Yours very truly,

Wm. R. Kuntz

WRK/mm

224 New Customhouse
Denver 2, Colorado
April 1, 1958

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

In reference to your letter of March 29, 1958, this constitutes concurrence by the Government for you to discontinue Stage I drill hole No. 7 in Project Area A at a depth of 414 feet, because of the conditions encountered.

Nothing in this concurrence to discontinue drill hole No. 7 shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By E. N. Harshman
E. N. Harshman
Acting Executive Officer

cc: Mr. J. B. Carman
Uranium Mine
Empire, Colorado

VT:prl
: Chmn.Op.Comm.-3) w/copy of
Finance Office,) Operator's
Region III) letter of
Amendment file,) March 29.
Region III)
arshman)
MEA/DFC-Winkel)
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DMEA
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Questa, New Mexico
March 30, 1958

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
234 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4538
(Molybdenum)
Contract No. IDM-M1004
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

We are herewith making application for approval to stop diamond drill hole No. 7. This is the drill hole in Stage I of the contract at coordinate E 1600 drilled -65 degrees south.

This hole was drilled to 414 feet. The drill rods stuck at that depth and could not be removed. Lost the bit, reamer, coreborrel and about 30 feet of rods in the hole.

Yours very truly,

Molybdenum Corporation of America

A. L. Grosclin

A. L. Grosclin, Manager

DMEA
ARTMENT OF THE INTERIOR
MAR 31 1958
REGION III
VER, COLORADO

OFFICE OF THE DIRECTOR
DMEA
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224 New Customhouse
Denver 2, Colorado
March 18, 1958

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568
(Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Forms MF-104, Operator's Monthly Report and Voucher, for December, 1957, and January 1958, have been received in this office and are being processed for payment. The following disallowances have been made:

Disallowance, Diamond drilling, Hole No. 13-A

Hole No. 13-A has not been completed; therefore, the reported costs for drilling, casing, and chemical analyses applicable for this hole are disallowed. If the hole is completed to the satisfaction of the Government at a later date, you may report the entire cost of the hole on a subsequent voucher.

Disallowance, "Old" No. 5 Cross-cut South

The "Old" No. 5 cross-cut South was driven at a location not approved by the Government. Therefore, the cost of crosscutting, timbering and chemical analyses applicable to the "Old" No. 5 cross-cut South are disallowed.

You will be further advised of the above disallowances by means of an Administrative Audit Difference Statement, which will be forwarded to you by the Finance Office, Region III. Please make the necessary adjustments of units and costs on the next reports submitted on voucher and accounting Forms MF-104 and MF-104A.

JDC:hmh
cc: Chmn Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres.file, Reg.III
Chron

Yours very truly,

Original signed by
W. H. KING
W. H. King,
Executive Officer, DMEA
Field Team, Region III

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224 New Customhouse
Denver 2, Colorado
March 17, 1958

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Reference is made to your letter of March 15, 1958, and Field Team approval, dated January 5, 1958, for the drilling of a vertical hole to a depth of approximately 500 feet, approximately at coordinate E 50 - S 500 under the provisions of Stage II of the Contract.

Because of the extremely adverse conditions encountered in drilling the hole, you may, as a matter of record, consider the hole completed at the depth of 407 feet.

Very truly yours,

DMEA Field Team, Region III

By W. E. King
W. E. King
Executive Officer

cc: Mr. J. B. Carman
Urad Mine
Molybdenum Corporation of America
Empire, Colorado

JWT:prl

cc: Chmn.Op.Comm.-3) w/copy of
Finance Office,) Operator's
Region III) letter of
Amendment file,) March 15.
Region III)
Harshman)
DMEA/DFC(Winkel))
Corres. file)
Townsend
Chron.

DMEA
DEPARTMENT OF THE INTERIOR

MAR 17 1958
REGION III
DENVER, COLORADO

Questa, New Mexico
March 15, 1958

Mr. W. H. King, Executive Officer, DMEA
Field Team, Region III
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
Molybdenum
Contract No. IDM-E1094
Molybdenum Corp. of America
Moly or Questa Mine
Taos County, New Mexico

Dear Mr. King:

We are herewith making application for approval to stop diamond drill hole No. 5 CxS. This is the - 90 degree drill hole at coordinate E 50 and 300 South.

We drilled this hole to 290 feet and had lots of trouble with loose ground at 240 to 270 feet. We tried cementing the hole but couldn't do any good with cement.

We later reamed and cases the hole to 272 feet, then drilled to 407 feet. They stuck the rods at 407 and couldn't get them out. We lost 130 feet of rod, AX Core Barrel, Bit and Reamer in the hole.

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Yours very truly,

Molybdenum Corporation of America

A. L. Greslin

A. L. Greslin, Manager

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

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January 27, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the Government's and Audit copies of Amendment No. 2 to Contract No. Idm-E1094, which was forwarded by your letter of January 6, 1958 for signature by the Operator.

Also enclosed are three copies of a letter from this office, whereby the DMEA Field Team, Region III, transmitted the "Operator's Copy" of the Amendment and approved for performance the drifting westerly on the Second Tunnel Shaft Level, as provided for by the Amendment.

Copies of the Amendment and letter of transmittal, constituting a work approval, have been distributed to the Finance Office, Region III, and to others concerned.

W. H. King

W. H. King

Enclosures

OFFICE OF THE ...
DMEA
RECEIVED JAN 30 1958

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

January 27, 1958

Mr. J. D. Carman
Molybdenum Corporation of America
Empire, Colorado

Re: Docket No. DMEA 4563 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Enclosed are the "Operator's Copy" and one photo copy of Amendment No. 2 to Contract No. Idm-E1094, which has been executed to provide for the extension of the drift westerly on the Second Tunnel Shaft Level to a point approximately 400 feet west of coordinate W 400.

Consistent with provisions in the Contract pertaining to prior approval by the Government for performance of work under Stage II, this constitutes approval to extend the drift westerly on the Second Tunnel Shaft Level to a point approximately 400 feet west of coordinate W 400, as provided for by Amendment No. 2.

Nothing in this work approval shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By W. H. King
W. H. King

By E. N. Harshman
E. N. Harshman

JWT:prl

cc: Chmn.Op.Comm.(3)
Finance Office, Region III
Amendment file, Region III
Harshman
DMEA/DFC-Winkel
Corres. File
Townsend
Chron.
) w/copy of Amendment No. 2

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 16 1958

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1/16	[illegible]	800
	~~Murphy~~	~~700~~

224 New Customhouse
Denver 2, Colorado

January 14, 1958

Mr. J. B. Carman
Molybdenum Corporation of America
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of proposed Amendment No. 2 to Contract No. Idm-E1094, which has been prepared in reference to your letters of December 10 and December 14, 1957 to make provision for: (1) Analysis of sludge samples if representative core samples are not obtained; (2) Drifting further to the west on the second tunnel shaft level.

If the Amendment is satisfactory, all copies are to be signed by an official of Molybdenum Corporation of America authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office.

Upon return of the properly executed copies of the Amendment, the "Operator's Copy" will be forwarded to you, together with written approval from the DMEA Field Team, Region III, for the continuance of the drift westerly on the second tunnel shaft level, as provided for in the Amendment.

Very truly yours,
Original signed by
W. H. KING

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

cc: Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

JWT:prl
cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC (Winkel)
Corres. file
Townsend
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
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January 13, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Questa or Moly mine), Taos County, New Mexico

Enclosed are three copies of confirmation of verbal work approval issued by the DMEA Field Team, Region III, pertaining to the drilling of one hole under Stage II of the contract.

Also enclosed are three copies of a joint memorandum, dated January 7, 1958, from R. U. King, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to the drill hole.

Three copies of the Operator's request, dated December 14, 1957, pertaining to the drill hole, were forwarded by copy of our memorandum to the field examiners, dated December 17, 1957.

Copies of the confirmation of verbal work approval have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

W H King
W. H. King

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 13 1958
DATE CODE

224 New Customhouse
Denver 2, Colorado

January 8, 1958

Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4508 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Questa or Moly Mine)
Taos County, New Mexico

Dear Mr. Greslin:

In reference to your request of December 14, 1957, this confirms verbal approval by the Government on December 11, 1957, which was subsequently verbally confirmed January 6, 1958, for you to drill a vertical down hole to a depth of approximately 500 feet from a point near the face of an existing turnout from the west drift approximately at coordinates E. 50 - S. 500, under the provisions of Stage II of the Contract.

The approximate location of the drill hole is shown on the map entitled, "Plan of Part of 2nd Tunnel Shaft Level Showing Location of Proposed Diamond Drill Hole, Questa Mine, Molybdenum Corporation of America. DMEA 4508, Idm-E1094," which is attached hereto and made a part of this confirmation of verbal work approval.

In order to give priority to the drilling of the above approved hole, the Government hereby concurs in deferring the balance of drilling under Stage I, in Area A, pending completion of the herein approved hole.

Nothing in this confirmation of verbal work approval shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor any item of allowable cost which is expressly designated "maximum."

JWT:prl
cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment File, Region III
Harshman
DMEA/DFC (Winkel)
Corres. file
Townsend
Chron.

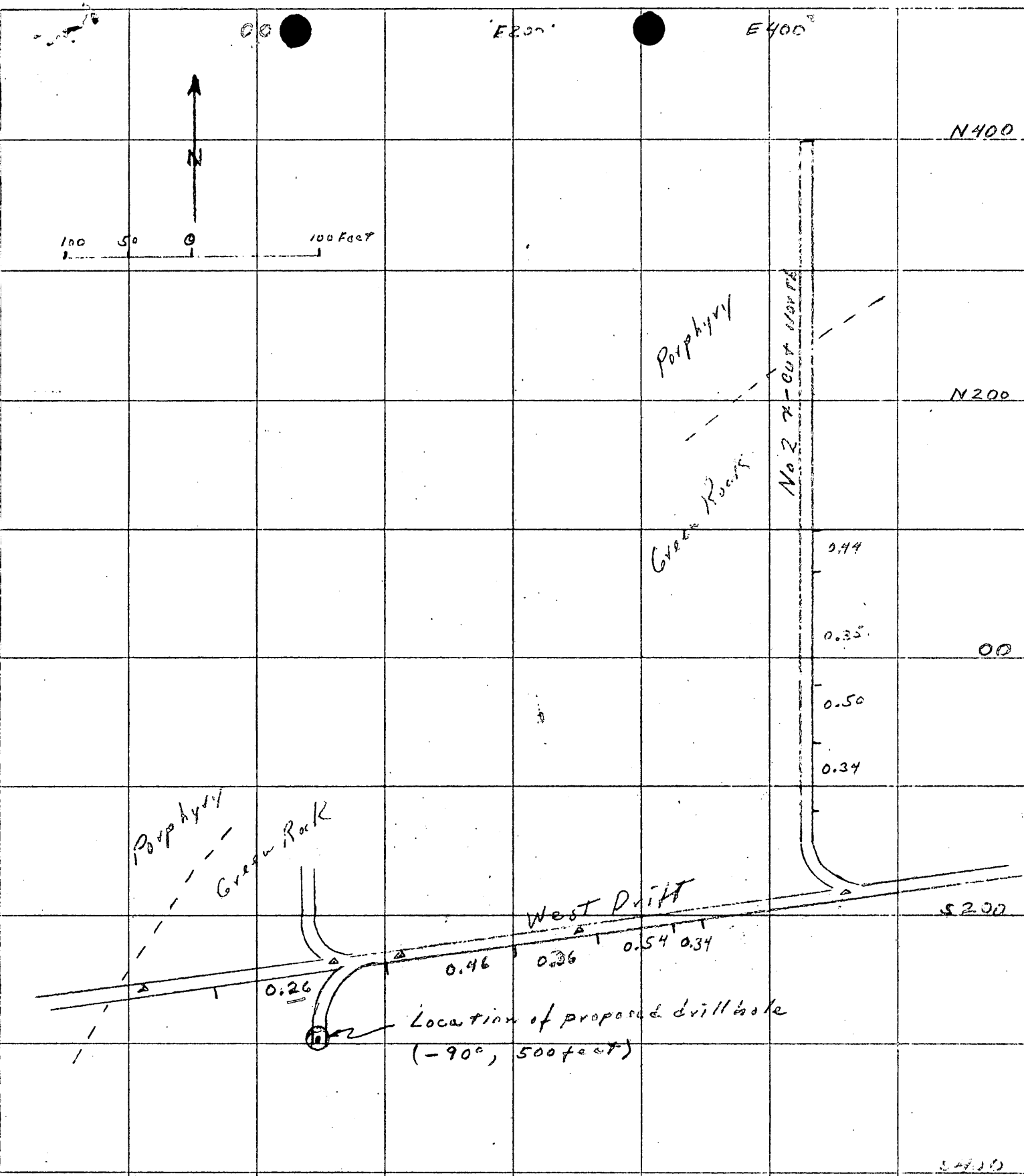
Very truly yours,

DMEA Field Team, Region III

By C. H. King
C. H. King

By E. N. Harshman
E. N. Harshman

cc: Mr. J. B. Carman
Molybdenum Corporation of America
Empire, Colorado



PLAN OF PART OF 2nd TUNNEL SHAFT LEVEL SHOWING LOCATION OF PROPOSED DIAMOND DRILL HOLE, QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA.
DMEA 4568, Idm-E 1094.

"ALBANENE" NO. 106M K&E CO., N.Y.
REG. U.S. PAT. OFF.

IN REPLY REFER TO:

DMEA
DEPARTMENT OF THE INTERIOR
JAN 8 - 1958
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 7, 1958

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

In a letter dated December 14, 1957, the operator of the subject contract project requested approval to defer temporarily Stage I drilling to permit the drilling, at this time, of one Stage II hole. The hole in question, is to be drilled from near the face of an existing turnout from the West drift, approximately at coordinates E 50, S 300. The advisability of drilling this hole was discussed with the operator on December 11, 1957, and verbal approval given as of that date. He was advised that formal approval would be by letter from the DMEA Field Team pending receipt of his written request.

Exploration in the western part of the project area, actually confined to a horizontal plane (2nd tunnel shaft level) has covered an area greater than 800 x 1,000 feet. In the eastern part of the project area exploration above and below the plane, consists so far of only three drill holes.

Since the hypothesis that the low-grade disseminated MoS_2 mineralization is largely confined to the relatively thin contact zone between the soda granite and overlying "green rock" has not been disproved, it seems that it would be vital to the execution of any systematic exploration program to have current information on the thickness of the ore deposit being explored.

It is therefore recommended that the operator's request to drill a -90° hole at approximate coordinates E 50, S 300, from near the face of an existing stub drift, be approved, and that he be permitted to temporarily defer Stage I drilling for this purpose. This substitution of drilling in Area B for drilling in Area A is recommended only because the operator has stated that he does not have sufficient power nor air pressure to operate two diamond drills.

The attached sketch map shows the approximate location of the proposed drill hole.

R. U. King
Geologist

W. W. Winkel
Mining Engineer

RUKing:mp

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

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January 8, 1958

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Questa or Moly mine), Taos County, New Mexico

In conjunction with matter discussed in our teletype of December 19 and your reply of December 20, 1957, enclosed are the original and two copies of a joint memorandum, dated January 7, 1958, from R. U. King, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, pertaining to a 500-foot extension of the drift westerly on the second tunnel shaft level.

Also enclosed are eight copies of a map entitled, "Progress map of the 2nd Tunnel shaft level, Questa Mine, Molybdenum Corporation of America, DMEA 4568, Contract Idm-E1094," for possible use in conjunction with the amendment being prepared in your office.

W H King
W. H. King

Enclosures
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IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
JAN 8 - 1958
REGION III
DENVER, COLORADO

W 8312

January 7, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 10 1958

DATE	INITIALS	CODE

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: R. U. King
W. W. Winkel

Subject: DMEA Docket 4568 (Molybdenum) Contract Idm-E 1094, Molybdenum Corporation of America (Questa or Moly mine) Taos County, New Mexico

On December 10, 1957, the operator of the above project contract applied by letter for approval of additional work under Stage II of the contract. The work requested consisted of (a) extending the 2nd tunnel shaft level (West drift) westerly to coordinate W 800, and (b) driving a crosscut southerly from the West drift for 500 feet along coordinate W 300. Consideration of the work under (b) was covered in a joint memorandum report dated December 19, 1957, and therefore only the proposed work under (a) will be considered in the following discussion.

In support of the proposed westerly extension of the West drift, the operator submitted a plan map and vertical sections with geologic projections. Although based on the best information available, the geologic correlations and projections shown are chiefly speculative. and [illegible] In general, however, the major geologic features are correctly plotted.

It is concluded that the area west of the present face of the West drift is favorable for disseminated MoS_2 mineralization and that drifting in this direction is warranted to further extend the area of mineralization on the level.

The porphyry at the face is highly altered and fractured and contains visible MoS_2, the grade of which is estimated to be between 0.1 and 0.3 percent MoS_2. Because the structural relationships of the several rock types are not well understood, the location and attitudes of their contacts cannot be predicted with any certainty. However, it is considered likely that the granite-green rock contact which dips gently southwesterly under the West drift may reverse and bring the granite back up to the level of the drift at a point not far west of the present face.

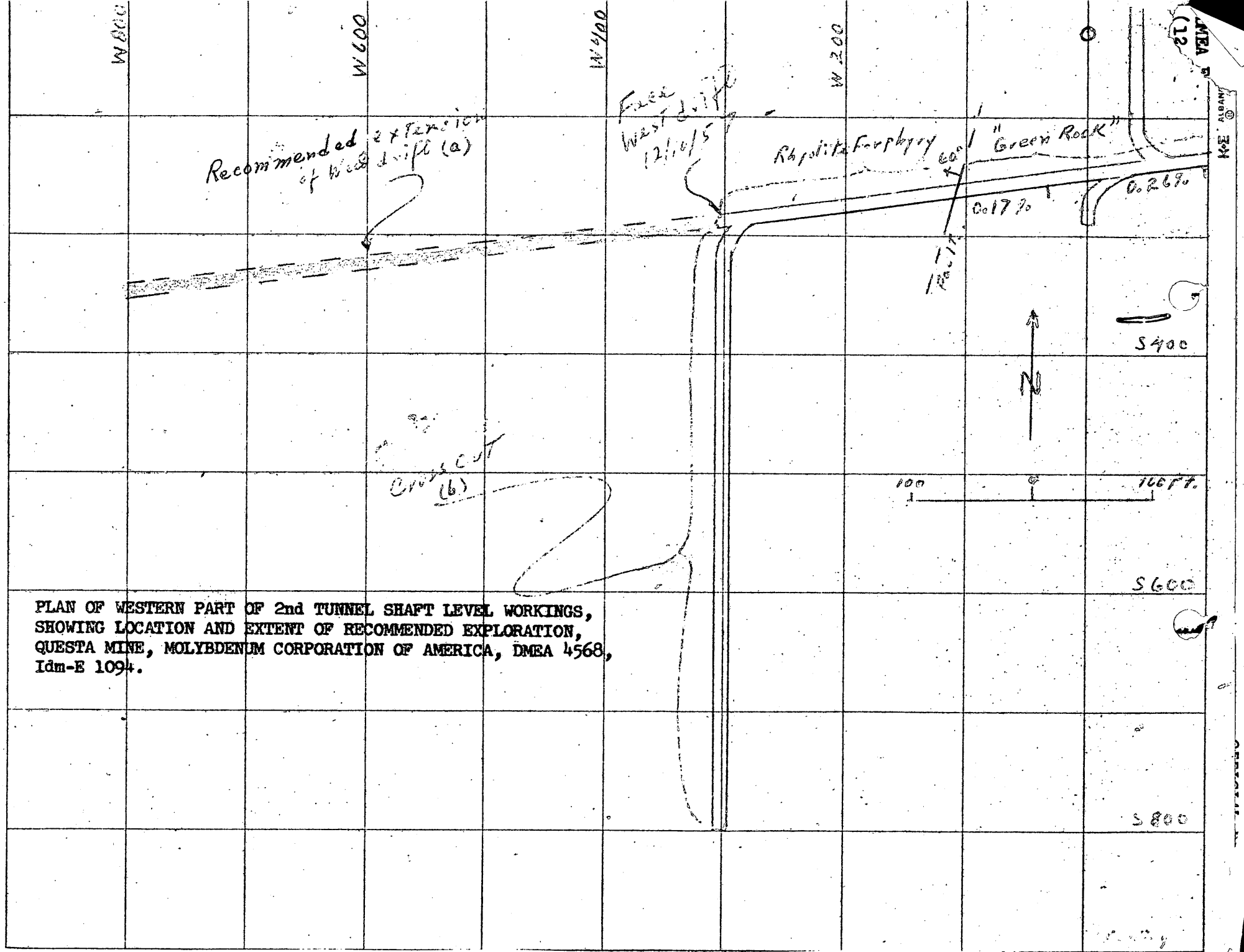
The attached sketch plan shows the approximate location and extent of the exploratory drifting that is recommended for approval under Stage II of the contract.

A progress map of the 2nd tunnel shaft level workings showing exploration to date, is attached for your information.

R. U. King

R. U. King, geologist

W. W. Winkel, mining engineer



PLAN OF WESTERN PART OF 2nd TUNNEL SHAFT LEVEL WORKINGS, SHOWING LOCATION AND EXTENT OF RECOMMENDED EXPLORATION, QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, DMEA 4568, Idm-E 1094.

DMEA Form 7
(12-56)

OFFICIAL FILE

Date	Surname	Code
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"	Mittendorf	200
1/7	gb	220
		700

JAN 6 1958

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

Re: Docket No. DMEA-4568 Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. King:

Enclosed are the original and four copies of a proposed Amendment No. 2 to the subject contract, signed by the Administrator for the Government. Also enclosed are two extra copies for Field Team use.

If you and the Operator find the proposed agreement in order, please have an authorized representative of the company sign the original and four copies. Thereafter, kindly distribute the copies in the usual manner.

This amendment has been prepared in accordance with the Field Team's recommendations teletyped December 19 and 26, 1957.

Sincerely yours,

George C. Selfridge
(esy)
Chairman, Operating Committee

Enclosures

APPROVED:

Frank D. Lamb (esy)
Member, Bureau of Mines

Thor H. Kiilsgaard (esy)
Member, Geological Survey

FMMurphy/gla
1-6-58
cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
FMMurphy

8623

DR/izm
FMM
12-7

[redacted]

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568
CONTRACT NO. IDM-E1094

AMENDMENT NO. 2

It is agreed this _____ day of _____, 1958, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, and Molybdenum Corp of America parties to that certain Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, that effective May 31, 1957, the contract is amended as follows:

1. In Exhibit "A," Description of the Work, the following qualification is added to those recited in paragraphs four and five relating to core samples: In the event sufficient core is not recovered to make a representative sample from a section of any drill hole, then in lieu of a core sample the sludge from such a section of hole will be recovered and assayed for its MoS_2 content.

2. In Exhibit "A," Description of the Work, Stage II, (Area B), the second paragraph is revised to read:

The work consists of extending the second tunnel shaft level westward to a point approximately 400 feet west of coordinate W. 400 shown on map Figure 4. With prior written Government approval crosscuts shall be driven north and/or south from this drift to explore for possible occurrences of molybdenum-bearing rock near the contact zones of the granite and "Green rock" or volcanics; also, additional exploratory drifts may be driven from the north-south crosscuts to follow the strike of favorable zones encountered. No crosscut driven from the second tunnel shaft level in Area B shall be closer than 400 feet to any crosscut driven in the same direction.

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate total amount which the Government may be required to contribute, nor the amount of any item designated as maximum.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

BY_____
Administrator, Defense Minerals
Exploration Administration

MOLYBDENUM CORPORATION OF AMERICA

By_____

Title_____

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

DEC 3 0 1957

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DMEA
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DATE CODE
1/2/58 C 220

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

Enclosed are three copies of confirmation of work approval issued by the DMEA Field Team, Region III, pertaining to work requested by the Operator under item B of its letter of December 10, 1957.

Also enclosed are three copies of the Operator's letter of December 10, 1957, and three copies of a joint memorandum dated December 7, 1957, from W. W. Winkel, Mining Engineer, Bureau of Mines, and R. U. King, Geologist, Geological Survey, pertaining to the matter.

Copies of the confirmation of the work approval have been distributed to the Operator, Finance Office, Region III, and to others concerned.

W. H. King

Enclosures

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

224 New Customhouse
Denver 2, Colorado
December 26, 1957

Mr. J. B. Carman
Molybdenum Corporation of America
Empire, Colorado

Re: Docket No. 4568 (Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to work request, item B, of your letter of December 10, 1957, this confirms verbal approval by the DMEA Field Team, Region III, on December 11, 1957, for you to perform the following work as provided for in Area B, under Stage II, of the contract.

> A crosscut shall be driven southerly a maximum length of 500 feet; however, the crosscut shall be stopped short of that distance if the tunnel penetrates rock which does not contain visible Molybdenum over a section measuring approximately 50 feet in length.

The location of the above described crosscut is shown on the map entitled, "Plan of Western Part of 2nd Tunnel Shaft Level Workings, Showing Location and Extent of Recommended Exploration, Questa Mine, Molybdenum Corporation of America, DMEA 4568," which is to be attached hereto and made a part of this confirmation of work approval.

Nothing in this confirmation of verbal approval to perform the above work shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Yours very truly,

DMEA Field Team, Region III

W. H. King

W. H. King

E. N. Harshman

E. N. Harshman

JWT:hmh

cc: Chmn. Op. Comm. (3)
Finance Office, Reg. III
Amendment File, Reg. III
Harshman
DMEA/DFC (Winkel)
Townsend
Corres. file, Reg. III
Chron

cc: Mr. A. L. Greslin
Questa, New Mexico

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 2 1958

DATE	INITIALS	CODE

W.O.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

IN REPLY REFER TO:
DMEA
DEPARTMENT OF THE INTERIOR
DEC 23 1957
REGION III
DENVER, COLORADO

December 19, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman EMH

From: W. W. Winkel
R. U. King

Subject: DMEA Docket 4568 (Molybdenum), Contract No. Idm-E 1094
Molybdenum Corporation of America (Moly or Questa mine),
Taos County, New Mexico

The operator requested by letter dated December 10, 1957, approval of the following additional work under Stage II: (a) Extension of the second tunnel shaft level (west drift) westward to coordinate W 800, and (b) crosscutting approximately along coordinate W 300 southward for 500 feet.

Although continuation of the west drift is justified as the porphyritic rock in the face is mineralized, and it is likely that the "green rock"-granite contact will be encountered again, such work would probably require an amendment to the contract, and this work will be dealt with in a separate memorandum report. Since the operator stressed the need for immediate approval of an additional working face, it is recommended that approval for work (a) be deferred in favor of work (b) above.

Inasmuch as the face of the west drift is in mineralized porphyry a crosscut started from that location will be exploring the horizontal extent of the disseminated MoS_2 mineralized area, in the "green rock". The crosscut will also provide access to locations from which core holes can be drilled to explore for the underlying green rock-granite contact.

For these reasons it is recommended that approval be given the operator to drive a crosscut southerly 500 feet approximately along coordinate W 300, but with limitations regarding barren ground as specified in the contract.

The attached plan of part of the workings of the Questa mine shows the location and extent of the proposed exploration.

Verbal approval was given the operator on December 11, 1957, to proceed with the crosscut, and advised that formal confirmation would follow by letter from the DMEA Field Team, Region III.

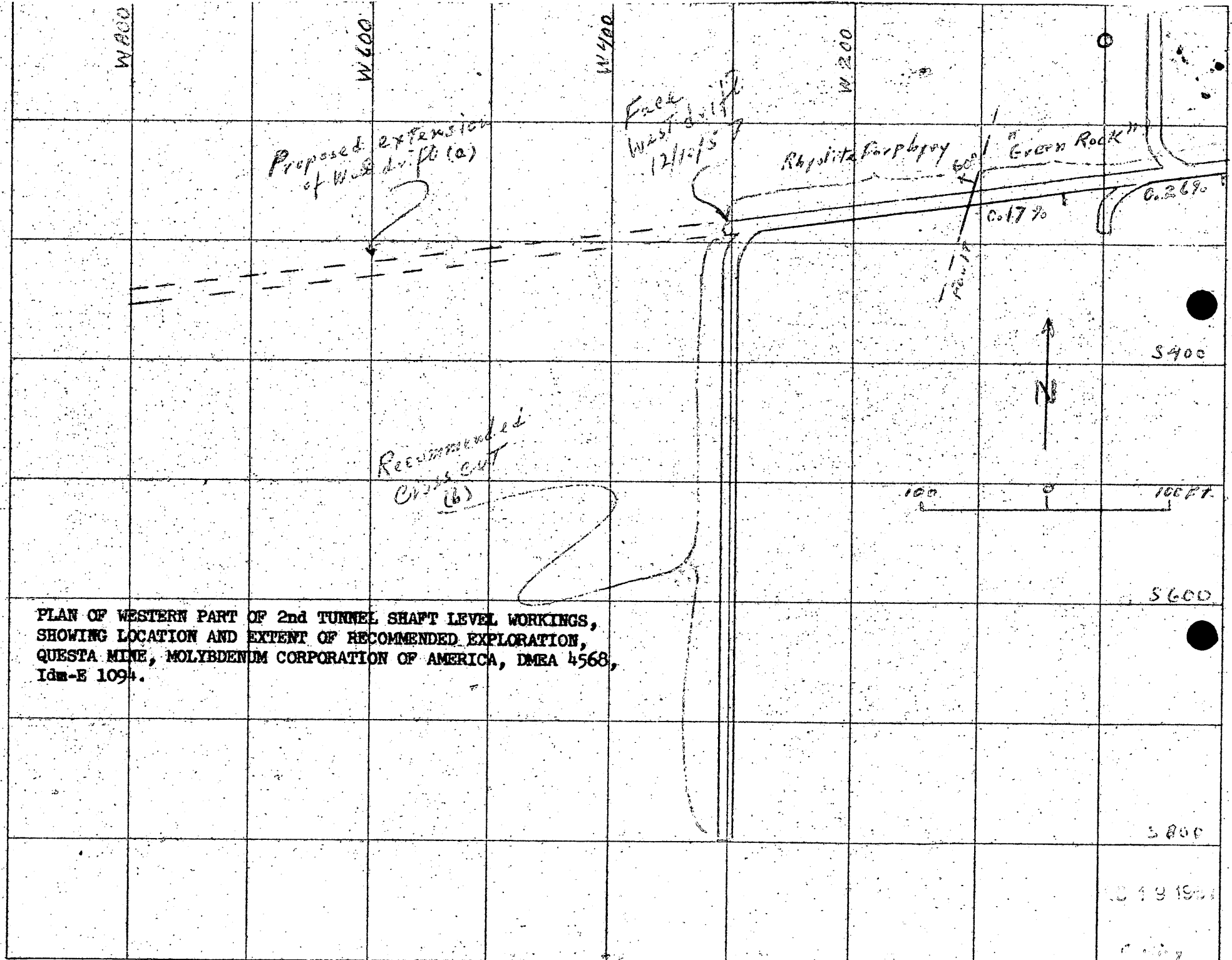
W. W. Winkel

W. W. Winkel
Mining Engineer

R U King

R. U. King
Geologist

RUKing:mp



PLAN OF WESTERN PART OF 2nd TUNNEL SHAFT LEVEL WORKINGS, SHOWING LOCATION AND EXTENT OF RECOMMENDED EXPLORATION, QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, DMEA 4568, Idm-E 1094.

CENTRAL FILE COPY
DMEA
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MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

December 10, 1957

Mr. E. H. Harlman
Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Ic-R1094
Molybdenum Corp. of America
(Moly or Quartz Mine)
Teller County, New Mexico

Dear Mr. Harlman:

We are herewith making application for D.M.E.A. approval under Stage II Area B for additional work on the west end of the second level. We consider this quite necessary at the present time even though we have recently been granted approval for 800 feet of crosscutting back from the west face which we plan to carry on concurrently with the west end exploration.

Certain extraordinary operating problems are present in the Quartz Mine work. To explain: The face of the west drift is reached from the surface by the 5,000 ft. Moly tunnel, then down 200 feet of winze to the 2nd level, then by some 3,300 feet of drift to the west. About 1,000 feet west of the winze a raise connects through various drifts and raises through "Z" tunnel with the surface, a total of 700 feet upward and about 5,000 feet horizontal.

Ventilation is obtained by circulation through Moly tunnel, down the winze to the 2nd level then up through the 2nd level raise and finally out "Z" tunnel.

The present workings are all west of the 2nd level raise connection. Just east of this raise, two fans in series are located to ventilate the west workings through 15 inch vent pipe. Power facilities are sufficient to ventilate only from 2 to 3 headings at one time.

The ground through the last 1,200 feet of the 2nd level has been heavy requiring continuous timbering. Expansion of circulating air through this timbered section will cause almost unbelievable rapid deterioration of the timber. Thus, continuous work to the west becomes a necessity as long as more work is contemplated there.

Further, in turning off crosscuts, it is necessary, as a matter of economy and not later interrupting work ahead, that, whenever possible, such crosscuts be anticipated so that they can be started as the main drift reaches the point of the crosscut.

In connection with this application for work approval our geologist Ken Hinkle has made a map showing geological sections through the area in question and in stating our objectives we will refer to the various figures on this map which we attach hereto. These sections while based on present surface and underground evidence are of necessity partly hypothetical.

December 10, 1957

Mr. E. N. Hartshman
Acting Executive Officer
D.M.E.A. Field Team, Region III
Denver, Colorado

Re: Docket D.M.E.A. 4568
Contract Idm-E1094

Approval is asked for:

A--Extension of the 2nd Tunnel Shaft level westward beyond coordinate 300 W to, as a first stage, to coordinate W 800. Refer to Fig. 5.

Objectives:

(1) Test the porphyry for MoS2.

(2) Explore for the west porphyry contact with the transition green rock.

(3) Explore the transition green rock between the two prophyry intrusions.

(4) Approach and enter the porphyry to the west.

B--Drive a crosscut off the 2nd Tunnel Shaft level at approximately 300 W, as a first stage, a distance of 500 feet south. Refer to Fig. 3 and Fig. 4.

(1) Test the prophyry for MoS2.

(2) Seek a south porphyry transition green rock contact.

(3) Explore intervening green or transition rock.

(4) Enter an area indicated by surface geology to be bounded by porphyry on the north, west and south. Favorable fracturing is expected here. Chances for greater depth in overlying transition rock (silicified and otherwise altered green rock) appear to be favorable. This transitionrrock is considered favorable host rock for MoS2 mineralisation as evidenced in that found in the 2nd level west drift and that found in hole #14 off the No. 1 Crosscut north. We emphasize this objective, for based on information now available, consider it the most favorable of all.

For future reference concerning exploration to the north of the 2nd level west drift there is shown in Fig. 1 and Fig. 2 of the accompanying map a hypothetical ridge line of the intrusive sodic granite. The location of this ridge line was determined by connecting the high points of the east and west massive granite outcrops. Consequently, until more information is available, the ridge, and its location, is indefinite. However, by this sketch, we hope to make more clear the exploration objectives in this locality.

We trust that you will be able to give prompt consideration to the above application as the west drift will shortly reach the approved limit.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J. B. Carman

J. B. Carman

JBC:r

Original & 5 Copies

CC: MH
ALC

Mr. George Selfridge

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RECEIVED DEC 26 1957

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N 235 BUR MINES 12-26-57 10-34

HAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA-4568, CONTRACT IDM-E1094, MOLYBDENUM CORP. OF AMERICA, YOUR TELETYPE OF 12-20-57 AND FURTHER REFERENCE TO OPERATOR'S LETTER OF 12-14, FORWARDED BY COPIES OF OUR MEMO OF 12-16, PERTAINING T TO ANALYSIS OF SLUDGE SAMPLES. RECOMMEND THAT AMENDMENT BEING PREPARED INCLUDE RECITATION TO MODIFY DESCRIPTION IN EXHIBIT A, 4TH AND 5TH PARAGRAPHS FIRST PAGE, FIRST PARAGRAPHY PAGE 2, TO PROVIDE FOR ANALYSIS OF SLUDGE SAMPLES WHEN ADEQUATE CORE NOT OBTAINED. SUCH MODIFICATION SHOULD BE MADE EFFECTIVE THE DATE OF THE CONTRACT. FIELD RECOMMENDATIONS IN THE MATTER WILL BE FORWARDED AIRMAIL.

W H KING

Denver Colo.

DEC 26 12 57 PM '57

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

DMEA
RECEIVED DEC 30 1957

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224 New Customhouse
Denver 2, Colorado

December 26, 1957

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4563
(Molybdenum)Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

The matter of sludge analysis in lieu of core analysis as requested by your letter of December 14, 1957, is under consideration and you will be advised as soon as a decision is reached.

Yours very truly,

Original signed by
W. H. KING

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

cc: Mr. J. B. Carman
Empire, Colorado

JWT:hmh

cc: Chairman, Op. Comm. (2)
Harshman
DMEA/DFC (Winkel)
Townsend
Corres.file, Reg. III
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado
December 26, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 30 1957

DATE	INITIALS	CODE
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AIRMAIL

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum) Contract Idm-E1094
Molybdenum Corporation of America (Moly or Questa mine)
Taos County, New Mexico

In reference to our teletype of this date, enclosed are the original and two copies of a joint memorandum dated December 19, 1957, from W. W. Winkel, Mining Engineer, Bureau of Mines, and R. U. King, Geologist, Geological Survey, pertaining to the analyses of sludge samples if adequate core is not obtained to provide a representative sample.

Three copies of the Operator's letter of December 14, 1957, pertaining to the matter were forwarded to your office by copies of our memorandum of December 16, 1957, to the field examiners requesting their recommendations.

The field examiners in the enclosed memorandum voice the opinion that it might be worth while to consider substituting non-core drilling for core drilling as presently provided for; however, it is our recommendation that the provision for core drilling be retained to provide such core as is possible to obtain for visual inspection.

Steps are being taken to review the Operator's drilling technic to ascertain whether or not changes should be recommended toward improvement of core recovery.

W. H. King

W. H. King

Enclosures

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

DEC 23 1957

REGION III

DENVER, COLORADO

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

December 19, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 30 1957

DATE	INITIALS	CODE

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: W. W. Winkel
R. U. King

Subject: DMEA Docket No. 4568 (Molybdenum), Contract ~~No. Idm-E 1094~~, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

On December 14, 1957, the operator of the subject contract project requested approval to include sludge analyses in his monthly report where sufficient core is not recovered from drilling to make up a core sample for analysis of the required footage interval.

As this proposal in no way lowers the quality of the work under the contract, but in fact appears to be an effort on the operator's part to provide data which otherwise would be lacking, it is recommended that where necessary sludge sample analyses be accepted in lieu of the required core sample analyses, and the operator's request be approved.

In view of the past record of poor core recovery, (10 to 30 percent), it is suggested that the operator be urged to make every reasonable effort to improve the core recovery from drilling. However, if due to adverse geologic conditions such as fracturing and rock alteration significant improvment is not practicable, it might be worthwhile to consider substituting non-core drilling with sludge sampling as the preferred method for securing more satisfactory performance in future exploration drilling at Questa.

W. W. Winkel

W. W. Winkel, Mining Engineer

R U King

R. U. King, Geologist

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

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RECEIVED DEC 26 1957

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December 23, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed are three copies each of two letters to the Operator, dated December 23, 1957, which constitute Field Team approval of the change in the location of the horizontal hole northerly from the end of the No. 2 crosscut north, and change in locations of Holes 15 and 16 from the end of the No. 1 crosscut north.

Also enclosed are two copies of the Operator's letters dated December 18, 1957, pertaining to the two matters.

Copies of the Government's concurrence in the location of the drill hole have been distributed to the Operator, Finance Office, Region III, and to others concerned.

W H King
W. H. King

Encls.

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 26 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

December 23, 1957

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of December 18, 1957, this constitutes concurrence by the Government for the drilling of the Stage I hole in Area B, horizontally in a northerly direction from the end of the No. 2 crosscut north, approximately at coordinate E 440, N 400.

Nothing in this concurrence in the change of location of the drill hole shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

Original signed by
W. H. KING
W. H. King
W. H. King

Original signed by
E. N. HARSHMAN
E. N. Harshman
E. N. Harshman

JWT:bh
cc-Chairman, Op. Comm.(3)
Finance Office, Reg.III
Amendment File, Reg.III
Harshman
DMEA/DFC (Winkel)
Corres. File
Townsend
Chron.

cc-Mr. A. L. Greslin
Molybdenum Corp. of America
Questa, New Mexico

DMEA
RECEIVED DEC 28 1957
DATE | INITIALS | COPY

224 New Customhouse
Denver 2, Colorado

December 23, 1957

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of December 18, 1957, and supplementing concurrence by the Field Team under date of October 29, 1957, this constitutes concurrence by the Government for the drilling of Holes Nos. 15 and 16 in Area A under Stage I at the end of the No. 1 crosscut north, approximately at coordinate E 1160, N 830, as follows:

(1) Hole No. 15 is to be directed on a course of approximately north 45° east at an angle of plus 45°.

(2) Hole No. 16 is to be directed on a course of approximately north 45° west at an angle of plus 45°.

Nothing in this concurrence in the change of location of Holes Nos. 15 and 16 shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

Original signed by
W. H. KING
W. H. King

Original signed by
E. N. HARSHMAN
E. N. Harshman

JWT:bh
cc: Chairman, Op. Comm. (3)
Finance Office, Reg. III
Amendment File, Reg. III
Harshman
DMEA/DFC (Winkel)
Corres. File
Townsend
Chron.
cc-Mr. A. L. Greslin
Molybdenum Corp. of America
Questa, New Mexico

WO.

DMEA
DEPARTMENT OF THE INTERIOR
DEC 20 1957
REGION III
DENVER, COLORADO

December 18, 1957

Mr. W. H. King, Executive Officer
D.M.E.A. Field Team, Region III
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. D.M.E.A. 4566
(Molybdenum)
Contract No. Idm-81094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

Please refer to the contract, page 3 under Exhibit A, last paragraph relative to holes No. 15 and 16.

We ask your approval of drilling hole No. 15 North 45° East plus 45 degrees and hole No. 16, N 45° W, plus 45 degrees at the location of the present face of the No. 1 Crescent North at approximately coordinates E 1160 and N 830. This is under Project Area A, Stage I of the contract.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J. B. Carman

J. B. Carman

JBC:r

Original & 5 copies

CC: MC New York
MC Questa

CERTIFIED MAIL
DEC 26 1957

DMEA
DEPARTMENT OF THE INTERIOR
DEC 20 1957
REGION III
DENVER, COLORADO

December 18, 1957

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. D.M.E.A. 4568
(Molybdenum)
Contract No. Idm-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

Kindly refer to the contract, page 3, "Project Area B", 3rd 4th paragraph referring to a crosscut north (Crosscut No. 2 North) at approximately coordinate E 440 to be extended north to approximately N 340:

This crosscut has been driven to approximately coordinate N 400 and we hereby ask your approval to drill the horizontal drill hole under Stage I Area B, north 500 feet from N 400 instead of from N 340.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J B Carman

J. B. Carman

JBC:r

Original & 5 copies

CC: MH New York
AIG Questa

RECEIVED

Depar[redacted]ent of

DMEA

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Secretary)

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T E L E T Y P E

DEC 20 1957

W. H. KING, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT DECEMBER 19, DMEA-4568, MOLYBDENUM CORP. OF AMERICA, THIS OFFICE WILL PREPARE AMENDMENT ALLOWING EXTENSION OF WEST DRIFT TO 800 W.

12/20 Lamb 130
12/20 Nelson 130

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

FMMurphy/gla
12-20-57
cc to: Admr.'s Reading File
Operating Committee
T. H. Kiilsgaard, 5224
Mr. Murphy
Confirmation to Region III

8623

Mr. George Selfridge

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DN 235 BUR MINES X 12-19-57 10-28

CHAIRMAN OPERATING COMMITTEE

To W-800

RE DOCKT DMEA 4568, CONTRACT IDM-E1094, ~~MOLYBDENUM CORXXX CO~~RP. OF AMERICA WORK REQUEST ITEM A OPERATORS LETTER OF DECEMBER 10, 1957, FORWARDED TO YOU BY COPY OF OUR MEMO OF DECEMBER 12. DRIFT EXTENSION WESTERLY UNDER STAG EXXXX STAGE II HAS APPROVAL OF FIELD AND THIS OFFICE. HOWEVER, WE BELIEVE PREREQUISITE TO APPROVAL FOR WORK WOULD INVOLVE AMENDMENT TO CONTRACT TO ELIMINATE, QUOTE, TO APPROXIMATELY COORDINATE W 300, END QUOTE, IN LAST LINE OF PAGE 3 OF EXHIBIT "A" . PLEASE TELETYPE ADVICE IF YOU CNXXX CONSIDER EXECUTON XXXXX EXECUTION OF SUCH AN MXXX AMENDMENT WITHIN OUR DELEGATED AUTHORTXX QXXXXX AUTHORITY. IF NOT, WILL YPXXX YOU PREPAR E THE AMENDMENT.

W H KING

Denver, Colo.

DEC 19 1 40 PM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D.C.

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224 New Customhouse
Denver 2, Colorado

December 17, 1957

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC-Winkel - " "

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of December 14, 1957, wherein approval of the Government is requested for the following:

1. To defer temporarily the balance of drilling proposed for performance under Stage I.

2. Approval for the drilling of a vertical down hole under Stage II at the approximate co-ordinate location of E 50 and 300 South.

Both the matters under items 1 and 2 were discussed in the conference with the Operator's representative in this office December 11, 1957.

Please submit a joint memorandum report of your recommendations in the matter.

Original signed by
W. H. KING

W. H. King

JWT:prl

cc: Chmn. Op. Comm. - 3 } w/copy of
Corres. file } enclosure.
Townsend }
Chron.

W O

ORIGINAL FILE COPY
DMEA
RECEIVED DEC 19 1957
DATE | INITIALS | CODE

Questa, New Mexico
December 14, 1957

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 4568
Molybdenum
Contract No. IDM-E 1094
Molybdenum Corporation
of America
Moly or Questa Mine
Taos County, New Mexico

Dear Mr. King:

We are herewith making application for approval to defer the diamond drilling on Stage 1 for the present time and drill a diamond drill hole on Stage 2 of the contract at coordinate E 50 and 300 South.

This hole to be a 500 foot hole drilled 90° down to explore the formation below the second level tunnel.

Yours very truly,
Molybdenum Corporation of America

A. L. Greslin

A. L. Greslin, Manager

DMEA
DEPARTMENT OF THE INTERIOR
DEC 16 1957
REGION III
DENVER, COLORADO

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 19 1957

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224 New Customhouse
Denver 2, Colorado

December 16, 1957

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC-Winkel - " "

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of December 14, 1957, requesting the Government's approval to analyze sludge samples in lieu of core samples because of inability to obtain satisfactory core recovery in the drilling.

Please submit a joint memorandum report of your recommendations in the matter.

Original signed by
W. H. KING
W. H. King

JWT:prl

cc: Chmn. Op. Comm. - 3) w/copy of
Corres. file) enclosure
Townsend)
Chron.

We are also waiting for F.T. recommendations about channel versus muck samples of each round broken in raises and drifts.

Probably combine in an amendment No. 3

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 19 1957
DATE | INITIAL | CODE

Questa, New Mexico
December 14, 1957

Mr. W. H. King, Executive Officer, D.M.E.A.
Field Team, Region III
U. S. Bureau of Mines
224 New Custom House
Denver 2, Colorado

Re: Docket No. DMEA 4568
Molybdenum
Contract No. IDM-E1094
Molybdenum Corporation
of America
Moly or Questa Mine
Taos County, New Mexico

Dear Mr. King:

We are herewith making application for approval to include the sludge analyses in our monthly reports where there is not enough core to make a sample in a given footage, to comply with the contract.

Yours very truly,
Molybdenum Corporation of America

A. L. Grealin

A. L. Grealin, Manager

DMEA
DEPARTMENT OF THE INTERIOR
DEC 16 1957
REGION III
DENVER, COLORADO

DMEA
RECEIVED DEC 16 1957

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224 New Customhouse
Denver 2, Colorado

December 12, 1957

Memorandum

To: E. N. Harshman - w/enclosure
DMEA/DFC-Winkel- " "

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-X1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of December 10, 1957, which constitutes a request for further work under Stage II of the contract, on and from the second tunnel shaft level drift as follows:

A. Extend the second tunnel shaft level westerly to approximately coordinate W 800.

B. Drive a crosscut south a distance of 500 feet from a point in the second tunnel shaft level at approximately coordinate W 300.

Approval of the work requested under A will necessitate a prior amendment to the contract to eliminate the present restriction of drifting to coordinate W 300 under Stage II.

The crosscutting under B was approved verbally by the Field Team in the discussion with Mr. Carman and Mr. Greslin on December 11.

In support of the Government's action on the Operator's requests, please submit joint memoranda containing your recommendations separately pertaining to the work requested under A and under B. Please submit with each memorandum report twelve extra copies of a map, or maps, showing progress on the project to date and the additional work recommended by the memorandum.

Original signed by
W. H. KING
W. H. King

JWT:prl

cc: Chmn. Op. Comm. (2) - w/copy of enclosure
Townsend
Corres. file
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED DEC 16 1957

DATE	INITIALS	CODE

December 10, 1957

Mr. E. N. Harshman
Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract Ima-11068
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

We are herewith making application for D.M.E.A. approval under Stage II Area B for additional work on the west end of the second level. We consider this quite necessary at the present time even though we have recently been granted approval for 800 feet of crosscutting back from the west face which we plan to carry on concurrently with the west end exploration.

Certain extraordinary operating problems are present in the Questa Mine work. To explain: The face of the west drift is reached from the surface by the 5,000 ft. Moly tunnel, then down 800 feet of winze to the 2nd level, then by some 3,500 feet of drift to the west. About 1,000 feet west of the winze a raise connects through various drifts and raises through "Z" tunnel with the surface, a total of 700 feet upward and about 5,000 feet horizontal.

Ventilation is obtained by circulation through Moly tunnel, down the winze to the 2nd level then up through the 2nd level raise and finally out "Z" tunnel.

The present workings are all west of the 2nd level raise connection. Just east of this raise, two fans in series are located to ventilate the west workings through 15 inch vent pipe. Power facilities are sufficient to ventilate only from 2 to 3 headings at one time.

The ground through the last 1,200 feet of the 2nd level has been heavy requiring continuous timbering. Suspension of circulating air through this timbered section will cause almost unbelievable rapid deterioration of the timber. Thus, continuous work to the west becomes a necessity as long as more work is contemplated there.

Further, in turning off crosscuts, it is necessary, as a matter of economy and not later interrupting work ahead, that, whenever possible, such crosscuts be anticipated so that they can be started as the main drift reaches the point of the crosscut.

In connection with this application for work approval our geologist Hans Heinicke has made a map showing geological sections through the areas in question and in stating our objectives we will refer to the various figures on this map which we attach hereto. These sections while based on present surface and underground evidence are of necessity partly hypothetical.

December 10, 1957

Mr. D. W. Harshman

Re: Docket D.M.E.A. 4568
Contract Idm-21094

Approval is asked for:

A--Extension of the 2nd Tunnel Shaft level westward beyond coordinate 300 W to, as a first stage, to coordinate W 800. Refer to Fig. 5.

Objectives:

(1) Test the porphyry for MoS2.

(2) Explore for the west porphyry contact with the transition green rock.

(3) Explore the transition green rock between the two porphyry intrusions.

(4) Approach and enter the porphyry to the west.

B--Drive a crosscut off the 2nd Tunnel Shaft level at approximately 300 W, as a first stage, a distance of 500 feet south. Refer to Fig. 3 and Fig. 4.

(1) Test the porphyry for MoS2.

(2) Seek a south porphyry transition green rock contact.

(3) Explore intervening green or transition rock.

(4) Enter an area indicated by surface geology to be bounded by porphyry on the north, west and south. Favorable fracturing is expected here. Chances for greater depth in overlying transition rock (silicified and otherwise altered green rock) appear to be favorable. This transitionrrock is considered favorable host rock for MoS2 mineralization as evidenced in that found in the 2nd level west drift and that found in hole #14 off the No. 1 Crosscut north. We emphasize this objective, for based on information now available, consider it the most favorable of all.

For future reference concerning exploration to the north of the 2nd level west drift there is shown in Fig. 1 and Fig. 2 of the accompanying map a hypothetical ridge line of the intrusive sodic granite. The location of this ridge line was determined by connecting the high points of the east and west massive granite outcrops. Consequently, until more information is available, the ridge and its location is indefinite. However, by this sketch, we hope to make more clear the exploration objectives in this locality.

We trust that you will be able to give prompt consideration to the above application as the west drift will shortly reach the approved limit.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J. B. Carman

J. B. Carman

JBC:jr

Original & 5 Copies

CC: MM
ALG

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

DEC 11 1957

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DMEA
RECEIVED DEC 16 1957

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Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of confirmation of work approval issued by the DMEA Field Team, Region III, approving crosscutting in Area B, under Stage II of the Contract.

Also enclosed are three copies of the Operator's request of November 29, 1957 and three copies of a joint memorandum report, dated December 6, 1957, from W. W. Winkel and R. U. King, pertaining to the crosscutting.

Copies of the confirmation of work approval have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

W H King
W. H. King

Enclosures

Note: The proposed x-cuts to the north and south from the west drift at coordinates 0.0 and E-900, respectively, appear to be well placed. However, it is possible that the porphyry encountered in the DMEA west drift and No. 2 x-cut north may be a later intrusion or intrusions, than the one on the contact of which the high-grade MoS_2 was found and mined farther east.

F Myers

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
DEC 9 - 1957
REGION III
DENVER, COLORADO

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DMEA
RECEIVED DEC 16 1957
DATE | CODE

December 6, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: W. W. Winkel
R. U. King

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

In a letter dated November 29, 1957, the operator of the subject contract requested approval of Stage II work in the amount of 800 feet of crosscutting. The operator requested that the crosscut be located along coordinate E 40 and be driven northerly and southerly from the west drift.

Preliminary evaluation of the results of exploration (Joint Interim Report November 20, 1957) supports the earlier conclusion that the soda granite-green rock contact dips gently southwestward. The contact of the granite with the overlying green rock crosses the west drift at approximate coordinate E 1000.

The No. 2 north crosscut, along coordinate E 400, crosses from green rock into a coarse rhyolite porphyry, and the west drift encountered the same rock type at about coordinate W 100.

If the porphyritic rocks encountered in these two openings are facies of the soda granite then it would appear that the strike of the granite-green rock contact has changed from NW to NE with a corresponding change in dip from SW to SE. If, on the other hand, the porphyritic rocks represent late intrusive dikes or stocks not directly related to soda granite then no change in the original strike and dip of the contact is indicated.

A crosscut driven northward along coordinate E 40 should cross the green rock-porphyry contact at somewhat less than 400 feet from the west drift, and would provide a third point on which to base geologic correlations.

In either case a northerly crosscut would trend toward the contact and therefore would constitute exploration in the zone most favorable for disseminated low grade molybdenite mineralization.

A crosscut driven southerly from the west drift although appearing to trend away from the contact would reach locations from which holes could be drilled downward and laterally to explore for the granite-green rock contact below the second tunnel shaft level.

In contrast to earlier hypothesis that the molybdenite mineralization would be chiefly confined to the border zone of the granite, data are being accumulated that indicate that all of the rock types encountered have been subjected to faulting and fracturing and have been relatively equally mineralized.

Because at this time so little is known of the relationship of rock type to MoS_2 distribution it is recommended that the first southerly crosscut be located so as to provide a wide spaced uniform exploration pattern in the area south of the west drift. Such a pattern would require the crosscut to be driven approximately along coordinate E 400. This location would be approximately midway between holes 11 and 8A, and the western limit of proposed exploration.

With the accumulation of information indicating a widespread uniformly low grade type of MoS_2 mineralization every attempt should be made to establish a systematic exploratory pattern, and at this early stage of exploration it is believed advisable to avoid unnecessary concentration of exploration in small areas.

It is recommended therefore that the operator's request for 800 feet of crosscutting along coordinate E 40 be modified to provide for about 400 feet of crosscutting northerly approximately along coordinate E 40 and about 400 feet of crosscutting southerly approximately along coordinate E 400. This relocation of the southerly crosscut was discussed with and agreed to by operator on December 2, 1957, subsequent to verbal authorization given by the Field Team on the same date.

The operator was advised by letter dated December 2, 1957, that formal confirmation by the DMEA Field Team, Region III would follow receipt of his written request.

W. W. Winkel

W. W. Winkel, Mining Engineer

R U King

R. U. King, Geologist

RUKing:mp

DMEA
DEPARTMENT OF THE INTERIOR
DEC 2 - 1957
REGION III
DENVER, COLORADO

November 29, 1957

Mr. E. N. Harshman
Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
(Molybdenum)
Contract No. Idm-E 1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

We ask government approval of work under Stage II Area B:

Crosscutting a total of 800 feet north and south from the west drift second tunnel shaft level at approximately coordinate 40 E.

Objectives:

1. Explore for MoS2 values.

2. Explore for geological features.

3. Make openings from which drilling may be done to further accomplish the above objectives.

We have, you will note, asked approval for 800 feet of crosscutting without specifying how much to the north and how much south. We suggest that the distance crosscut in either direction be left open to depend on conditions encountered as the work progresses.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By: J B Carman

J. B. Carman

JBC:r
Original, 5 copies
CC: MH
ALG

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DMEA
RECEIVED DEC 16 1957

DATE	INITIALS	CODE

OFFICE FILE COPY
DMEA
RECEIVED DEC 13 1957
DATE
Form 700

224 New Customhouse
Denver 2, Colorado

December 11, 1957

Mr. J. B. Carman
Molybdenum Corporation of America
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to your letter of November 29, 1957, this confirms verbal approval by the DMEA Field Team, Region III, given December 2, 1957, for the performance of the following work in Area B, under the provision of Stage II of the contract:

1. From the second tunnel shaft level westerly at approximately coordinate 0 - 0, crosscut northerly for a distance not to exceed 400 feet.

2. From a point in the second tunnel shaft level westerly at approximately coordinate E - 400, crosscut southerly for a distance not to exceed 400 feet.

The objective of the crosscuts is to explore for possible contacts of the granite and overlying "Green rock" or volcanics.

Nothing in this confirmation of verbal approval shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

JWT:prl
cc: Chm. Op. Comm. (3)
Finance Office, Reg. III
Amendment file, Reg. III
Harshman
DMEA/DFC-Winkel
Corres. file
Townsend Chron.

Very truly yours,

DMEA Field Team, Region III

By W. H. King
W. H. King

By E. N. Harshman
E. N. Harshman

cc: Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

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224 New Customhouse
Denver 2, Colorado

December 2, 1957

Memorandum

To: E. N. Harshman - with enclosure
DMEA/DFC (Winkel) " "

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094
Molybdenum Corporation of America (Moly or Questa Mine)
Taos County, New Mexico

Enclosed is a copy of the Operator's letter of November 29, 1957, requesting the Government's approval for a total of 800 ft. of crosscutting north and south from a point in the westerly drift on the second tunnel shaft level at approximately coordinate 40 E.

Please submit a joint memorandum report containing your recommendations in the matter and enclose twelve extra copies of any map used in the report to show the crosscutting recommended.

Original signed by
W. H. KING

W. H. King

JWF:bh

cc-Chairman, Op. Comm. (2)
Townsend
Corres. File - w/copy Operator's letter 11/29/57
Chron.

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

DMEA RECEIVED NOV 27 1957		
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November 25, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the following concerning approval for certain work and concurrence in the modification of the description of other work to be performed:

1. Three copies of letter of approval and concurrence by the DMEA Field Team, Region III, dated November 25, 1957.

2. Two copies each of the Operator's letter of October 29, and two letters of October 30, 1957.

3. Three copies of a joint memorandum, dated November 20, 1957, from W. W. Winkel, Mining Engineer, Bureau of Mines, and R. U. King, Geologist, Geological Survey, pertaining to stopping of hole No. 1, continuation of drifting under Stage II, and change in the location, inclination, and bearing of three holes to be drilled under Stage I in Area A.

Copies of the Field Team's letter have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

Enclosures

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RECEIVED NOV 27 1957
DATE
CODE

224 New Customhouse
Denver 2, Colorado

November 25, 1957

Mr. J. B. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. 14s-K109k
Molybdenum Corporation of America
(Maly or Questa mine)
Taos County, New Mexico

Dear Mr. Carman:

In reference to Mr. Grenlin's letter of October 29 and your two letters of October 30, 1957, pertaining to stopping hole No. 1 at a depth of 336 feet; continuation of the Second Tunnel Shaft Level westerly; and change in the direction pertaining to drill holes Nos. 8, 12, and 13, the Government's approval and concurrence are as follows:

1. Confirming verbal approval by this office on October 29, 1957, the Second Tunnel Shaft Level may be continued westerly under the provisions of Stage II of the Contract to the extent provided therefor.

2. The Government concurs that hole No.1 be considered as having reached its objective at a depth of 336 feet.

3. The Government concurs that holes Nos. 8, 12, and 13 will be replaced by holes Nos. 8A, 12A, and 13A, which will be drilled as follows in reference to the map, "Figure 4," attached to the Contract and in conformance with provisions in the Contract pertaining to the drilling under "Stage I," "Project Area A":

Hole No. 8A will be collared approximately at coordinate S 310, W 1240, and will be directed horizontally on a course due south.

Hole No. 12A will be located at the same point as shown for deleted hole No. 12 and will be directed north at an angle of -45°.

Hole No. 13A will be located at the same point as shown for deleted hole No. 13 and will be directed south at an angle of +45°.

Nothing in this confirmation of verbal approval and concurrence in the modification of the description of work to be performed shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By E. H. Kerchman
E. H. Kerchman

By J. W. Townsend
J. W. Townsend
Acting Member

cc: Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

JWT:prl

cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment file, Region III
Kerchman
DMEA/DFC (Winkel)
Corres. file
Townsend
Chron.

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DATE	INITIALS	CODE

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

Questa, New Mexico
October 29, 1957

Mr. E. N. Harshman
Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4568
Molybdenum
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

This is a request to stop diamond drill hole No. 1. This is the drill hole at coordinate E-2000, drilled horizontal to the north.

This hole was drilled 336 feet deep and was stopped on September 3, 1957.

The reason we stopped the hole was that the last 50 feet of hole drilled was in very hard ground and with very little MoS_2 showing.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager

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DATE	INITIALS	CODE

DMEA
DEPARTMENT OF THE INTERIOR
NOV 4 - 1957
REGION III
DENVER, COLORADO

October 30, 1957

Mr. E. B. Harshman
Acting Executive Officer
D.M.E.A. Field Team, Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. 4568
Molybdenum
Contract Idm-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

We propose and ask your agreement to changes in the location and direction of drill holes #8, #12 and #13 as shown on Fig. 4 of the contract in Sec. E 1400, E 1200 and Sec. E 1050. These are part of Stage I, Area "A" of the contract.

We send you herewith a map on which these changes are indicated. This map is to be used in connection with Fig. 4 of the contract.

Change 1. Omit hole #8 Sec. E 1400 and substitute for it #8A, Sec E 1200, a horizontal hole bearing South.

Reasons: Hole #11 now drilling S at -45° from Sec. E 1200 cut two high grade veins 1½" to 2" wide at hole depth 158-164 feet. A horizontal hole S would prospect the ground above this location. We believe this would give more information than hole #8. Hole #8 as planned would supposedly roughly parallel the contact at a comparatively short distance from it. If favorable results were obtained from this hole, we would probably discount their value due to the hole's proximity to the contact.

Change 2. Omit hole #12, -30° N at Sec. E 1050. Substitute for it #12A, -45° N.

Reasons: #12A would be more nearly normal to the contact and would explore practically the same territory as both #12 and #13 holes.

Change 3. Omit hole #13, -90° Sec. E 1050. Substitute #13A, plus 45° S Sec. E 1050.

Reasons: Hole #14, N 175, E 1230 in the No. 1 Crosscut North, just completed to 500 feet, shows appreciable MoS2 mineralization throughout. Thus ore mineralization might penetrate the overlying "green rock" much more than was originally contemplated. Overlying "green rock" therefore warrants exploration.

Yours very truly,

J. B. Carman

J. B. Carman

JBC:r

CC: MH
AIG

DMEA
DEPARTMENT OF THE INTERIOR
OCT 31 1957
REGION III
DENVER, COLORADO

October 30, 1957

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DMEA
RECEIVED NOV 27 1957

DATE	INITIALS	CODE

U. S. Department of the Interior
234 New Customhouse
Denver 2, Colorado

Att: Mr. E. N. Harshman, Acting Executive Officer

Re: Docket No. MEL-4[illegible] (Molybdenum)
Contract No. I[illegible]
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sirs:

We herewith make application for approval of Stage II (Area B) as the Second Tunnel Shaft level has now approximately reached the end of Stage I and shows visible molybdenum. This is in accord with the stipulations set forth in Exhibit A, page 10, under paragraph "Stage II (Area B)" of the contract.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

by J B Carman

J. B. Carman
Urad Mine
Empire, Colorado

JBCir

CC: Marx Hirsch, N.Y.
A. L. Greslin, Questa, N.M.

IN REPLY REFER TO:

DMEA
DEPARTMENT OF THE INTERIOR
NOV 21 1957
REGION III

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

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DATE	INITIALS	CODE

November 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: W. W. Winkel
R. U. King

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E 1094
Molybdenum Corporation of America (Moly or Questa mine),
Taos County, New Mexico
Joint Interim Engineering and Geologic Report

In letters dated October 29 and 30, 1957, the operator requested approval of (1) stopping hole No. 1, (2) Stage II exploration, and (3) changes in locations, inclinations, and bearings of holes Nos. 8, 12, and 13.

The property was visited on November 6, 1957, by W. W. Winkel, U. S. Bureau of Mines, and R. U. King, U. S. Geological Survey, in company with Mr. A. L. Greslin, manager.

Hole No. 1 was drilled horizontally due north from the West drift along coordinate E 2000 for 336 feet. Its purpose was to explore the marginal zone of the soda granite intrusive for disseminated molybdenum mineralization. The operator's core log indicates the hole penetrated aplite containing in addition to molybdenite, quartz, pyrite, and fluorite. Molybdenite is visible megascopically in the bottom

50-foot section only at 319 feet and from 330 to 336 feet. Silicification and brecciation are intense with fully 50 percent of the rock being replaced by fine crystalline quartz, the remainder having a white, chalky, aplitic texture. The rock is tentatively correlated with the soda granite on the basis of spatial relationship only. Under the microscope finely divided molybdenite is sparsely disseminated throughout the silicified rock and is not confined to veinlets and areas of quartz. Core recovery ranges from none to 85 percent, and averages about 30 percent. The average MoS_2 content of all sludge samples is 0.24 percent, and the average content of core samples is 0.22 percent MoS_2. Mechanical grouping of assays of core samples gives the following averages: 0 to 130 feet, 0.24 percent; 130 to 210 feet, 0.18 percent; 210 to 336 feet, 0.21 percent MoS_2.

The hole has penetrated a sufficient distance into the marginal zone of the soda granite, consistent with geologic data at hand, to be considered as having accomplished its original objective. We therefore concur with the operator's decision to complete the hole at 336 feet.

We wish to point out, however, that the hole has bottomed in rock that is highly silicified, which may have important bearing on MoS_2 deposition. Although the relationship of pervasive silicification to MoS_2 mineralization at Questa is not yet understood, it may be worth noting that at the Climax Molybdenum deposit this has for many years served as a major guide to ore.

The face of the West drift on November 6, 1957, was in weakly mineralized porphyritic granite (Red Rock). It is mapped by the operator as a coarse-grained facies of the soda granite intrusive. The drift had penetrated about 50 feet of this rock after crossing a fault contact with mineralized "Green Rock". Although the grade for the last 50 feet does not appear to be better than 0.2 percent MoS_2, molybdenite veinlets and quartz-molybdenite veins are visible in the rock up to the face.

It is recommended, therefore, that the West drift be continued under Stage II, with limitations as specified, in the contract.

Results of DMEA exploration to date indicate that disseminated mineralization ranging from 0.3 percent to better than 0.5 percent MoS_2 occurs not only in the marginal zone of the soda granite near the contact with "Green Rock", but that it also extends for a considerable distance into the "Green Rock". In view of this new information, exploration along the contact zone would be less desirable than exploration normal to the contact zone. We therefore recommend approval of the operator's request for the following changes in location, bearing, and inclination of Stage I drill holes Nos. 8, 12, and 13.

Hole 8 is to be abandoned and replaced with hole 8 A. Hole 8 A will be horizontal, bear south, and collared in the face of existing No. 2 south crosscut (coord: S 310, E 1240). This recommended collar location is modified from the operator's proposed

location to avoid duplicate exploration near existent workings. The operator concurred in conference, with the above modification. Hole 8 A will explore for MoS_2 mineralization in the "Green Rock" south of the West drift in an area largely untested except for the West drift, and hole 11.

Holes 12 and 13 are to be replaced with holes 12 A and 13 A respectively. Hole 12 A will bear north but be inclined at -45° to explore more nearly normal to the granite-"Green Rock" contact. Hole 12 A would effectively explore the ground previously covered by holes 12 and 13. Hole 13 A will bear south but be inclined at +45°. The recommended holes, 12 A and 13 A, if drilled to their maximum length would indicate a thickness of nearly 1,000 feet to the mineralized zone.

Hole No. 11, collared at coordinates S 190, E 1200, was drilled southward at -45° a depth of 500 feet. Core recovery averaged slightly less than 10 percent. This hole collared in the soda granite and stayed in the same formation to the bottom with the exception of 20 feet of porphyry at 110 to 130 feet. MoS_2 content of the core ranges from 0.12 percent to 0.72 and averages 0.26 percent; the sludge assays range from 0.25 to 1.28 percent MoS_2 and average 0.50 percent. No explanation is offered at this time for the variance between the core and sludge assays.

Hole 14, collared at coordinates N 200, E 1220 was drilled westward at +45° to a depth of 500 feet. The core log indicates the

hole penetrated aplite to 70 feet and Transition (Green Rock ?) Rock from that point to the bottom of the hole. The MoS_2 content of the core samples representing 26.1 percent recovery, range from 0.15 to 0.70 percent, and average 0.24 percent, whereas assays of sludge samples range from 0.20 percent to 0.57 percent and average 0.29 percent. Results of this hole confirm the predicted flat southwesterly dip (15° SW) of the soda granite-"Green Rock" contact.

Holes 14 and 15 were drilled to their maximum allowable length and are considered to have been satisfactorily completed.

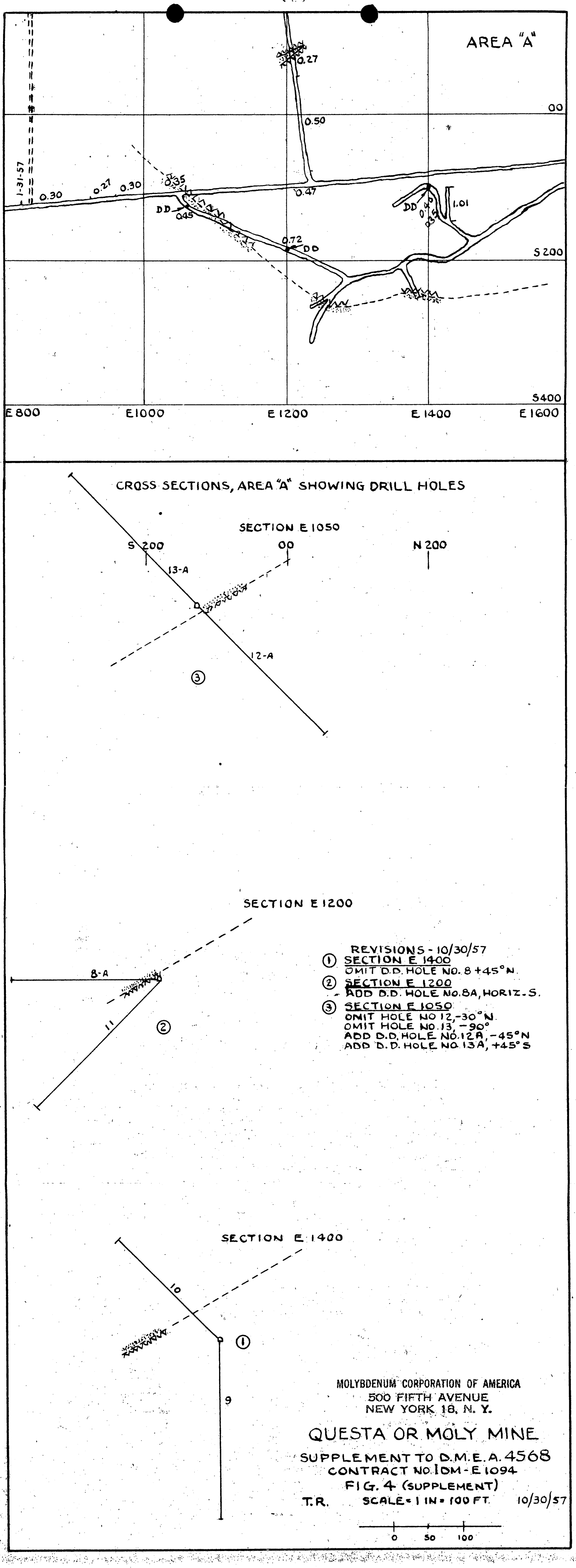
W. W. Winkel

W. W. Winkel
Mining Engineer

R U King

R. U. King
Geologist

RUKing:mp


AREA "A"
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S 200
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E 1400
E 1600
CROSS SECTIONS, AREA "A" SHOWING DRILL HOLES
SECTION E 1050
S 200
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N 200
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12-A
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SECTION E 1200
8-A
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SECTION E 1400
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REVISIONS - 10/30/57
1 SECTION E 1400
OMIT D.D. HOLE NO. 8 +45° N.
2 SECTION E 1200
ADD D.D. HOLE No. 8A, HORIZ. S.
3 SECTION E 1050
OMIT HOLE NO 12, -30° N.
OMIT HOLE NO 13, -90°
ADD D.D. HOLE NO. 12A, -45° N
ADD D.D. HOLE NO 13A, +45° S
MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.
QUESTA OR MOLY MINE
SUPPLEMENT TO D.M.E.A. 4568
CONTRACT NO. IDM-E 1094
FIG. 4 (SUPPLEMENT)
T.R.
SCALE = 1 IN = 100 FT.
10/30/57
0
50
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 1 1957

DATE	INITIALS	CODE
11/1	C	220
		700

October 29, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of agreement by this office for the location of drill holes Nos. 15 and 16.

Also enclosed are three copies of the Operator's request, dated October 19, 1957, and three copies of a joint memorandum, dated October 28, 1957, from W. W. Winkel, Mining Engineer, Bureau of Mines, and D. H. Richter, Geologist, Geological Survey, pertaining to the location of the drill holes.

Copies of the agreement have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

Enclosures

Offical

EXTRA COPY
DMEA
RECEIVED NOV 1 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

October 29, 1957

Mr. A. L. Greslin
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

In reference to your letter of October 19, 1957, and consistent with provisions in the Contract pertaining to the drilling of holes Nos. 15 and 16, this constitutes agreement by the Government for the drilling of the holes from a point in the No. 1 crosscut north at approximately co-ordinate 840 N. The holes will be directed on the bearing and at the inclination as indicated on the map, "Figure 4," attached to the Contract.

Nothing in this agreement as to the location of holes Nos. 15 and 16 shall be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, nor the fixed unit cost of any item of work.

Very truly yours,

DMEA Field Team, Region III

By E. N. Harneman
E. N. Harneman

By J. W. Townsend
J. W. Townsend
Acting Member

JWT:prl

cc: Chmn. Op. Comm. (3)
Finance Office, Region III
Amendment File, Region III
Harshman
DMEA/DFC (Winkel)
Corres. file
Townsend
Chron.

cc: Mr. J. B. Carman
Molybdenum Corporation of America
Empire, Colorado

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

OCT 28 1957

REGION III

DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 1 1957

DATE	INITIALS	CODE

October 28, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: E. N. Harshman

From: W. W. Winkel
D. H. Richter

Subject: Docket DMEA 4568 (Molybdenum), Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

The operator in a letter dated October 19, 1957, requests permission to change the location of two Stage I drill holes (nos. 15 and 16) from coordinate N 400 on the No. 1 crosscut north to coordinate N 840 on the No. 1 crosscut north (see fig. 4, Examination Report).

Holes 15 and 16 were originally designed to aid in delineation of the possible low grade ore-body in Project Area 1. The drill station for the two holes was tentatively located at coordinate N 400 on the No. 1 crosscut north--the estimated face of the crosscut when (and if) the contract was approved. Due to various delays, however, the No. 1 crosscut north was extended to N 840 before the contract was signed. The requested relocation of these two holes would move them 650 feet north of the closest hole (No. 14) in Project Area 1 and it appears that, although their primary purpose will be geologic exploration rather than delineation of the ore zone, the change is apparently

justified. Inasmuch as the No. 1 crosscut north is in mineralized granite along its entire length, the relocated holes, while giving valuable information on the nature of the granite and possible granite-"greenrock" contact, can still be considered exploration of the low-grade ore body.

It is recommended, therefore, that holes 15 and 16 be relocated from coordinate N 400 to N 840 without changing their original bearing or inclination. This recommendation, however, does not imply that the 650 feet of mineralized crosscut between coordinate N 190 (hole 14) and coordinate N 840 does not warrant further exploration. Certainly additional work, which may necessitate an amendment to the contract, will have to be undertaken to properly evaluate this part of Project Area 1.

H. M. Townes
for W. W. Winkel
Mining Engineer

E. M. Hershman
for D. H. Richter
Geologist

DHRichter:mp

Questa, New Mexico
October 19, 1957

Mr. W. H. King
Executive Officer, D.M.E.A.
Region III, U.S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Re: Docket No. DMEA 4568
(Molybdenum)
Contract No. IDM-E1094
Molybdenum Corp. of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

This is a request to establish the location of diamond drill holes 15 and 16 shown on map figure 4 under stage 1, Project area A.

Crosscut North No. 1 was advanced beyond coordinate 400N and we would like to drill the holes above mantioned at Coordinate 840N. This is approximately the end of No. 1 Crosscut North.

Yours very truly,

A. L. Greslin

A. L. Greslin

OFFICIAL FILE COPY
DMEA
RECEIVED NOV 1 1957

DATE	INITIALS	CODE

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

RECEIVED 10/28 1957

Date	Initials	Code
10/28	C	220
"	FMM	700

October 24, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the Government's and Audit copies of Amendment No. 1 to Contract No. Idm-E1094, which were forwarded by your letter of October 7, 1957, which have been executed by the Operator.

Copies of the Amendment have been distributed to the Operator, the Finance Office, Region III, and to others concerned.

E. N. Harshman

E. N. Harshman

Enclosures

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 17 1957

DATE	INITIALS	CODE
10/17	C	220
10/17	[illegible]	800
10/18	[illegible]	700

224 New Customhouse
Denver 2, Colorado

October 14, 1957

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket DMEA-4568 (Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Form MF-104, Operator's Monthly Report and Voucher, Form MF-104A, Operator's Unit Cost and Progress Report, Operator's Narrative Report, and supporting data for September, 1957, have been received in this office.

Processing of the September, 1957, voucher is deferred pending resolution of the sampling method to be employed in conjunction with the project drifting and crosscutting.

We have not as yet received the results of the test sampling methods outlined in Mr. J. B. Carman's letter to this office of August 26, 1957. We suggest that this information be submitted to this office as soon as possible.

Enclosed are nine copies each of Forms MF-104 and MF-104A for use in your next monthly report.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enclosures
JDC:jy
cc: Chm. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corresp. E1094
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 14 1957

DATE		
10/14	C	220
10/14		800
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224 New Customhouse
Denver 2, Colorado

October 10, 1957

Mr. J. B. Carmen
Molybdenum Corporation of America
Empire, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Carmen:

Enclosed are the Government's, Audit, Finance Office, and Field Team copies of proposed Amendment No. 1 to Contract No. Idm-E1094, which was prepared in Washington and has been signed by the Administrator, DMEA, for the Government, to modify the description of the work to be performed under Stage I in Area B.

The contract, as amended by this amendment, provides for 1,000 feet of drifting and crosscutting under Stage I, Area B, which is to be divided approximately 500 feet in the No. 2 N. crosscut and approximately 500 feet in the drift westerly on the Second Tunnel Shaft Level. Our records indicate that the starting point of the latter drift under the DMEA contract was the approximate coordinate E. 390. Therefore, Stage I drifting will terminate at approximately coordinate W. 100. Consequently, any drifting beyond that point is to be considered Stage II work, the performance of which is subject to prior written approval by the Government.

If the amendment is satisfactory, all copies are to be signed by an official of Molybdenum Corporation of America, authorized to sign such an instrument, the signer's title inserted, the corporate seal affixed, and all copies promptly returned to this office, upon receipt of which the "Operator's copy" will be forwarded to you.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enc.
JWT:bh
cc-Chairman, Op. Comm. (2)
Harshman
DMEA/DFC (Winkel)
Townsend
Corres. File - w/copy Chairman's letter of 10/7/57
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 14 1957

DATE	INITIALS	CODES
10/14	C	220
10/14	[illegible]	800
~~11/5/57~~		~~700~~

224 New Customhouse
Denver 2, Colorado

October 10, 1957

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA-4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Greslin:

In reference to your letter of October 9, 1957, regarding Government approval for drifting westward beyond coordinate E. 90, the enclosed copy of our letter to Mr. Carmen should clarify the matter for you.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enc.

JWT:bh

cc--Chairman, Op. Comm.(2)) with copy
Harshman) of
DMEA/DFC (Winkel)) Greslin's
Townsend) letter of
Corres. File) 10/9/57
Chron.

Questa, New Mexico
October 9, 1957

Mr. W. H. King
Executive Officer, D.M.E.A.
Region III, U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
OCT 10 1957
REGION III
DENVER, COLORADO

Re: Docket No. D.M.E.A. 4568
Molybdenum
Contract No. IDM-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Sir:

This is to request to get approval of a change in the contract to continue the West drift from Coordinate E90 on west, starting stage two of the contract (project area B).

Hold up the drilling of the 500 ft. diamond drill hole from coordinate E 90 westward until such time when we encounter an area that does not show any mineralization.

Then and at that time it may be more advantageous to drill the diamond drill hole to see if there is more mineralized ground ahead of the barren ground encountered.

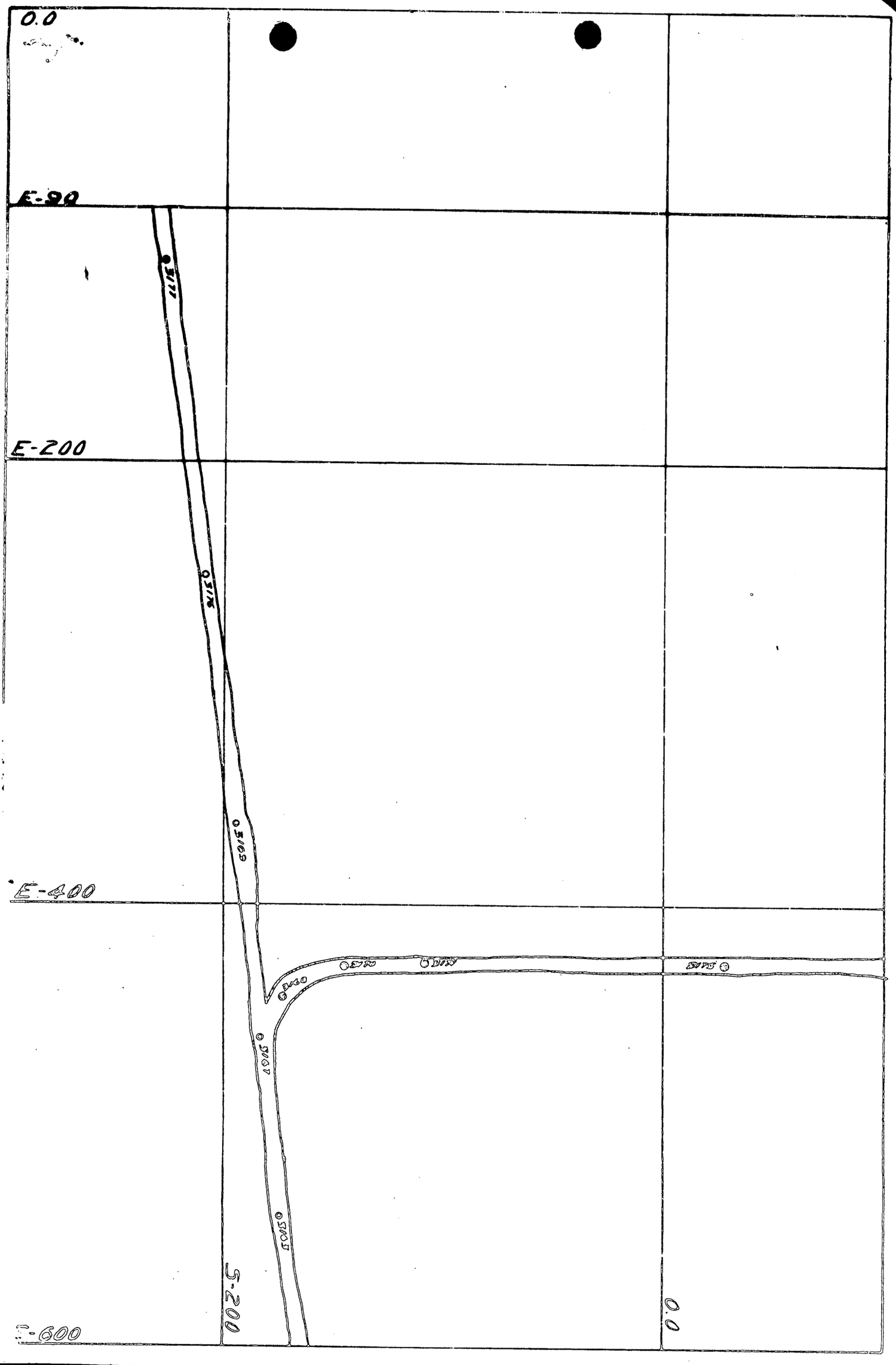
The area just prior to coordinate E 90 shows more MoS_2 and a more favorable fractured ground even though it is transitional rock.

We encountered some spots of redrock in this area which may indicate that we are close to the granite.

Yours very truly,

A. L. Greslin

A. L. Greslin, Manager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DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/4	Murphy	700
10/4	[illegible]	700
10-4	Chambers	800
10/4	[illegible]	130
	Johnson	110
	Matteucci	100
10/7	[illegible]	220
		700

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

OCT 7 1957

Re: Docket No. DMEA-4566 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Harshman:

In accordance with our teletype of September 20, 1957, enclosed are the original and four copies of a proposed Amendment No. 1 to the subject contract, signed by the Administrator for the Government. Also, enclosed are two extra copies for Field Team use.

If you and the Operator find the proposed amendment in order, please have an authorized representative of the corporation sign the original and four copies. Thereafter, kindly distribute the copies in the usual manner.

You will note that work under Stage II of the contract may be initiated if either the west tunnel or west drill hole is in rock containing visible molybdenum mineralization at the end of Stage I work.

Sincerely yours,

George C. Selfridge
(esf)

Chairman, Operating Committee

Enclosures

APPROVED:

Frank D. Lamb
(esf)

Member, Bureau of Mines

W. P. Williams (esf)

Member, Geological Survey

FMMurphy/izm 10-4-57
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

~~Re-Issued from memo August 27, 1969,~~

DMER-G 568. Idm-E1094

Molybdenum Corp. of America

Justification for Amendment No. 1

Under Project Area B pg. 3. Description of the work, Stage I, From coordinate E 90 "a hole shall be drilled to the west to a depth of about 500 feet."

Stage II, ... work would not be performed unless the face of the west drift is in rock containing visible molybdenum or the formation of Stage I or the above-mentioned hole from its face penetrated rock containing visible molybdenum.

The Operator has completed part of the ... west drift and it is still in mineralized rock. There is sufficient footage left in Stage I to continue the drift past coordinate E 90 because the Operator had advanced the drift prior to work under the contract. Our estimate of 500 feet was based on a starting point farther east than the actual one.

The drift should be continued as long as it is in mineralized material and then, if necessary, the drill hole to the west should be started. However, since the contract definitly states the drill hole should be started at Coordinate E 90, an amendment will be required to delete the drill hole and continue with the drift under Stage I, and possibly Stage II, until barren ground is encountered.

In Amendment No. 1. if 50 feet of barren ground is encountered in a section of the west tunnel then the drill hole to the west will be drilled, otherwise, the tunnel will be continued.

Jay Murphy

DRAFT
FMMurphy/izm
9-24-57

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568
CONTRACT NO. Idm-E1094

AMENDMENT NO. 1

It is agreed this _____ day of _____, 1957, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and the Molybdenum Corporation of America, hereinafter called the "Operator," parties to that certain Exploration Project Contract No. Idm-E1094 (Docket No. DMEA-4568), dated May 31, 1957, hereinafter called the "Contract," is amended effective May 31, 1957, as follows:

In Exhibit "A," Description of the Work, Stage I, under Project Area B (page 3) the second paragraph is deleted and replaced as follows:

"From the west face of the second tunnel shaft level at the time work under this contract begins, continue the tunnel westward a distance of approximately 500 feet, or to a point where the tunnel has penetrated rock which does not contain visible molybdenum over a section measuring approximately 50 feet in length. At the west end of such a barren section a hole shall be drilled approximately horizontal westward until rock containing visible molybdenum has been penetrated, or the bottom of the hole has reached the approximate intersection of coordinate W. 300 shown on map Figure 4."

This amendment shall not be construed to increase the estimated total cost of the project, the aggregate amount which the Government may be required to contribute, or the fixed unit cost of any item of work.

Executed in quintuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By _____
Administrator, Defense Minerals
Exploration Administration

THE MOLYBDENUM CORPORATION OF AMERICA

By _____

Title _____

FMMurphy/izm 9-24-57

cc: Mr. Murphy

OFFICIAL FILE COPY

Date	Surname	Code
9/20	Murphy	700
9/20	Ellis	700
9/20	GCS	130
"	Johnson	110
		210
9/23	C	220
		700

9/20 Yager 130
9/20 Nelson 130

SEP 20 1957

Department of the Interior

DMEA
14X4401(01) Revolving
Fund, Defense
Production Act, Interior (Transfer
to Office of Secretary

T E L E T Y P E

J.-W. TOWNSEND
ALTERNATE ACTING EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REFERENCE SEPTEMBER 18, DMEA 4568, MOLYBDENUM CORPORATION OF AMERICA. WE WILL PREPARE RECOMMENDED AMENDMENT. DRILLING TO WEST IN STAGE I WILL BE RETAINED FOR POSSIBLE LATER USE.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

FMMurphy/izm 9-20-57
cc: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 23 1957

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"	~~[illegible]~~	700

224 New Customhouse
Denver 2, Colorado
September 18, 1957

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket DMEA-4568 (Molybdenum)
Contract Idm-E1004
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

Form MF-104, Operator's Monthly Report and Voucher, for August, 1957, has been received in this office.

None of the sampling reported to date has been performed in accordance with the terms of the contract, therefore payment will not be made on the August, 1957 Voucher, or any subsequent Vouchers until the drifts have been sampled to meet present contract requirements, or until the matter has been otherwise resolved to the satisfaction of the Government.

We suggest that you submit to this office, as soon as possible, the results of the test sampling methods outlined in Mr. J. B. Carman's letter to this office of August 26, 1957, so that the matter can be forwarded to the Washington Office, DMEA, for a final decision.

Enclosed are six copies each of Forms MF-104 and MF-104A for use in your next monthly report.

Yours very truly,

Original signed by
J. W. TOWNSEND

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

Enclosures
JDC:hmh

cc: Chmn. Op. Comm. (2)
Harshman
DMEA, DFC (Winkel)
Townsend
Corres. file, Reg. III
Chron.

cc: Mr. Marx Hirsh, President
Molybdenum Corporation of America
New York 18, New York

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

OFFICIAL FILE COPY
DMEA
RECEIVED SEP 20 1957

DATE	INITIALS	CODE
9/20	C	220
"	FMM	700

September 18, 1957

VIA AIR MAIL

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the original and two copies of a joint memorandum, dated September 11, 1957, from D. H. Richter, Geologist, Geological Survey, and W. W. Winkel, Mining Engineer, Bureau of Mines, which is in reference to matter discussed in your teletype of August 27, 1957 and prior correspondence relative to continuing the west drift under Stage II of the Contract.

The field examiners recommend that the Operator be permitted to continue drifting west of coordinate E 90 under Stage II in lieu of first drilling a long hole to the west as presently provided for upon completion of Stage I drifting, the drift to continue toward its objective unless 50 feet of barren ground is penetrated.

This office concurs in the recommendations of the field examiners and recommends that a suitable amendment be prepared.

After the matter has been reviewed, please teletype advice as to you decision so that appropriate advice can be forwarded to the Operator.

J. W. Townsend

J. W. Townsend

Enclosures

WO

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
SEP 12 1957
REGION III
DENVER, COLORADO

RECEIVED
SE 20 1957
D.M.E.A.

September 11, 1957

Memorandum

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

From: D. H. Richter
W. W. Winkel

Subject: Docket No. DMEA 4568 (Molybdenum) Contract No. Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

On September 4, 1957, an examination of the subject property was made for the dual purpose of checking monthly progress and to gain additional information for action on the operator's letter of August 23, 1957, wherein it was requested that Stage II drifting be substituted for Stage I drilling, in Project Area B, if the face of the west drift is in mineralized ground at coordinate E. 90.

Since June 15, 1957, when a measurement station was established at the beginning of the contract work, 429 feet of drifting and crosscutting and 336 feet of drilling have been completed. These totals represent 194.5 feet of advance in the west drift to approximate coordinate E. 190, 234.5 feet of advance in the No. 2 crosscut north to approximate coordinate N. 60, and 336 feet of core drilling which completed drill hole no. 1 along coordinate E. 2000 (see figure 4 in examination report).

Although both the west drift and No. 2 crosscut north have been in "greenrock" (altered andesitic volcanics) since the beginning of the contract, the amount and nature of the molybdenite mineralization encountered has been very encouraging. The "greenrock" in both workings is highly fractured and contains visible molybdenite on practically all fracture and shear surfaces, very similar to the occurrence in the more productive granitic rocks east of the "greenrock"--granite contact at coordinate E. 1060. The MoS_2 content, as determined by car grab samples taken by the operator, is approximately 0.45 percent for the 194.5 feet of west drift and 0.40 percent

for the 234.5 feet of crosscut. Core recovery in drill hole no. 1 was very poor, and chemical assays of the first 40 feet of split core assayed only 0.22 percent MoS_2. Sludges, which are collected over 10-foot drilling intervals, will also be analyzed.

The operator's request to delete the 500-foot long drill hole from the face of the west drift at coordinate E. 90 and continue with Stage II drifting, if mineralization persists, is well founded and justified. In fact this was the intent of the examiner's recommendations in their examination report. However at that time it was generally believed, both by the examiners and the operator, that mineralization never persisted more than a few feet into the relatively soft and incompetent "greenrock" and consequently the terms "granite" and "mineralization" were in part used synonymously.

Approval of the operator's request to continue drifting, as authorized under Stage II, west of coordinate E. 90 is recommended. However, this does not imply that the Stage I drilling be deleted entirely. Should the drift penetrate 50 feet of barren "greenrock" it would be to the interest of the Government and operator as well, to discontinue drifting and drill as stipulated under Stage I, to insure against the loss of the target area.

D. H. Richter

D. H. Richter
Geologist

W. W. Winkel

W. W. Winkel
Mining Engineer

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
8/30	Murphy	700
8/30	Ellis	700
8/30	Bishop	130
"	Johnson	110
"	Butterfield	100
8/30	[illegible]	130
8/30	[illegible]	130
8/30	[illegible]	220
		700

AUG 30 1957

Dept. of the Interior

DMEA
14X4401(01) Revolving Fund, Defense Production Act, Interior, (Transfer to Office of Secretary)

T E L E T Y P E

WILLIAM H. KING
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER, COLORADO

REURMEMO AUGUST 27, DOCKET DMEA-4568, MOLYBDENUM CORPORATION OF AMERICA. AGREE WEST DRIFT SHOULD CONTINUE AS LONG AS ROCK IS MINERALIZED. UPON RECEIPT OF ADDITIONAL INFORMATION WASHINGTON WILL PREPARE AMENDMENT RELATING TO DRIFT AND DRILL HOLE TOWEST.

George C. Selfridge

CHAIRMAN, OPERATING COMMITTEE

FMMurphy/izm 8-30-57
cc to: Mr. Murphy'
Admr.'s Reading File
Operating Committee
THKillsgaard, 5224

8623

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

August 27, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of the Operator's letter of August 23, 1957, wherein the Government's approval is requested to eliminate the drill hole provided for under Stage I, Area B, and continue the drift westward under Stage II.

Enclosed also are three copies of a memorandum, dated August 27, 1957, from this office, whereby the matter was referred to the field examiners for their recommendations.

Tentatively, the field examiners are in accord with continuing the drift under Stage II without drilling the hole provided for under Stage I as long as the drift continues in mineralized material. In the event the drift goes out of the mineralized material, then the hole would be drilled to its original objective, provided that the drifting under Stage II had not already reached that point. A positive decision will be made at the time the drift actually reaches the point of coordinate E 90, its objective under Stage I.

It appears that an amendment to the contract will be necessary to provide for the foregoing conditions.

When you have reviewed the matter, we will appreciate advice from you by teletype, so that we will know how to proceed by the time the drift has reached the objective under Stage I.

E. N. Harshman

E. N. Harshman

OFFICIAL FILE COPY
D M E A
RECEIVED AUG 29 1957
DATE | INITIALS | CODE
8/29 | | 220
| | 130
| FHM | 700

224 New Customhouse
Denver 2, Colorado

August 27, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are three copies of the Operator's letter of August 23, 1957, wherein the Government's approval is requested to eliminate the drill hole provided for under Stage I, Area B, and continue the drift westward under Stage II.

Enclosed also are three copies of a memorandum, dated August 27, 1957, from this office, whereby the matter was referred to the field examiners for their recommendations.

Tentatively, the field examiners are in accord with continuing the drift under Stage II without drilling the hole provided for under Stage I as long as the drift continues in mineralized material. In the event the drift goes out of the mineralized material, then the hole would be drilled to its original objective, provided that the drifting under Stage II had not already reached that point. A positive decision will be made at the time the drift actually reaches the point of coordinate E 90, its objective under Stage I.

It appears that an amendment to the contract will be necessary to provide for the foregoing conditions.

When you have reviewed the matter, we will appreciate advice from you by teletype, so that we will know how to proceed by the time the drift has reached the objective under Stage I.

Original signed by
E. N. HARSHMAN

E. N. Harshman

JWT:prl

cc: Harshman
DMEA/DFC (Winkel)
Townsend
Corres. file
Chron.

EXTRA COPY
DMEA
RECEIVED AUG 29 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

August 27, 1957

Memorandum

To: E. N. Marshman - w/enclosure
DMEA/DFC (Winkel) - w/enclosure

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

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed is a copy of the Operator's letter of August 23, 1957 wherein the Government's approval is requested to continue drifting in Area B, under Stage II, of the contract without drilling the 500-foot hole provided for under Stage I.

Please submit a joint memorandum report of your recommendations in the matter.

It appears that an amendment to the contract will be necessary in order to defer drilling of the hole. Therefore, we will refer the matter to the Washington Office, DMEA, for advice pending the rendering of your joint memorandum report.

Original signed by
E. N. MARSHMAN

E. N. Marshman

JWT:prl

cc: Chmn. Op. Comm. - 3
Townsend
Corres. file - w/copy of Operator's letter.
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 29 1957
DATE | INITIALS | CODE

116

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

DMEA
ARTMENT OF THE INTERIOR
AUG 26 1957
REGION III
DENVER, COLORADO

August 23, 1957

United States Department of the Interior
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Attention: Mr. W. H. King
Executive Officer D.M.E.A.
Field Team, Region III

Re: Docket No. DMEA 4566 (Molybdenum)
Contract No. Idm-E 1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Gentlemen:

Kindly refer to the contract (1094) page 5, 2nd paragraph under "Project Area B" in which it is stated that the west drift shall be continued to about coordinate E 90, which distance was estimated to be 500 feet. Then a horizontal drill hole is to be driven 500 ft west from the face of the drift. Then, refer to page 3 under Stage II Area B, if molybdenum mineralization is found in the drill hole, Stage II would be approved and drifting westward would be resumed under Stage II.

We believe that the sense of the contract understood by both parties was, if molybdenum mineralization was evident in the face of the west drift at approximately coordinate E 90, that drifting would be continued. If not, that a 500 ft drill hole would be driven ahead. If it encountered MoS_2, then the drifting would be resumed.

The west drift has now proceeded within about 135 feet of coordinate E 90. Our assays show an average of 0.51% MoS_2 over the last 120 feet of drift. We therefore ask your approval for the continuation of the drifting beyond coordinate E 90 as long as we have molybdenum mineralization in the face, providing however, until Stage II is approved the amount of additional drifting shall not exceed the Stage I budget.

When the contract was approved some of the drifting under Stage I had been done. Also, most of the drill stations under Stage I had been cut. Can the amounts not used above or not used for drilling in the west heading, if drifting takes the place of drilling, be used for the west drift?

We therefore seek your approval of continuing the west drift under Stage I beyond coordinate E 90 as far as its budget will allow.

We believe that approval of the above request will not alter but clarify the original intent of the contract.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA
EMPIRE, COLORADO

By J B Carman
J. B. Carman

JBC:r

CC: New York Office
Questa, N.M. Office

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DMEA
RECEIVED AUG 29 1957

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8/29	C	220
8/29	[illegible]	800
	~~[illegible]~~	~~700~~

224 New Customhouse
Denver 2, Colorado

August 27, 1957

Mr. J. E. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

Re: Docket No. DMEA-4368 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Carman:

Receipt is acknowledged of your letter of August 26, 1957, concerning the method of sampling as presently provided for in Contract No. Idm-E1094.

As you were informed on your recent visit to this office, any change in the sampling specifications will require an amendment to the contract, which cannot be prepared within the authority delegated to this office. Therefore, the matter must be forwarded to the Washington Office, DMEA, for their consideration and appropriate action.

When you have obtained results from the different methods of sampling you propose, it is suggested that you submit at that time for the Government's consideration your proposal relative to revision of the sampling specifications presently incorporated in the contract.

We will be very interested to learn the results of the different methods of sampling. In the meantime we are unable to express an opinion on your conclusions as stated in your letter of August 26; neither can we make a commitment relative to our willingness to modify the sampling procedure in the contract, inasmuch as the final decision in the matter is not within the authority delegated to this office.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

JWT:bh
cc-Chairman, Op. Comm.(3)) with copy
DMEA/DFC (Winkel)) of Opera-
Harshman) tor's
Townsend) letter of
Corres. File E-1094) 8/26/57
Chron.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

DMEA
PARTMENT OF THE INTERIOR
AUG 27 1957
REGION III
DENVER, COLORADO

August 26, 1957

Mr. E. N. Harshman
Acting Executive Officer
D.M.E.A. Field Team Region III
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA-4568 (Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. Harshman:

We have your letter to Mr. Hirsch of August 16th concerning the disallowances of the amount reported for analyses on Forms MF-104 for June and July, 1957.

We question the efficacy of the method of sampling outlined in the contract both due to the friability of the rock and the mineral occurence as well as previous experience in this type of sampling. We are, we might add, more concerned with obtaining true results than getting credit from D.M.E.A. for analysis costs.

We propose therefore to run a test on the two methods of sampling, i.e., grab and trench by the following proceedure:

Send all the muck from at least two rounds in the drift to the mill and obtain automatic samples of them.

Grab sample each round as we are now doing.

Trench sample the drift from the same place the rounds samples came.

We believe that a comparison of the results should give a conclusion as to the better method of sampling.

We will be pleased to have your opinion on our conclusions and an expression as to your willingness to modify the sampling proceedure in the contract should our ideas be verified.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

By J. B. Carman

J. B. Carman

JBC:r
CC: MH
ALG
GRW

224 New Customhouse
Denver 2, Colorado

8/19 220 800

August 16, 1957

Mr. Marx Hirsch, President
Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

Re: Docket DMEA-4568 (Molybdenum)
Contract Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Hirsch:

Forms MF-104, Operator's Monthly Report and Voucher, for the months of June and July, 1957, have been received in this office and are being processed for payment.

The entire amount reported for analyses on the two vouchers is disallowed as the sampling procedure employed is not in accordance with the sampling procedure required by the contract. The drifts and cross cuts will have to be resampled and the new samples analyzed in accordance with the contract provisions. You will be further advised of the details of the above disallowances by means of an Administrative Audit Difference Statement, which will be forwarded to you by the Finance Office, Region III.

If you have any questions regarding the disallowances please feel free to contact this office.

Yours very truly,

Original signed by
E. N. HARSHMAN

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

JDC:hmh

cc: Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

cc: Chmn. Op. Comm. (2)
Harshman
DMEA/DFC
Townsend
Corres. file, Reg. III
Chron

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 8 1957

DATE	INITIALS	CODE
8/8	P.K.	220
	~~EMM 220~~	

224 New Customhouse
Denver 2, Colorado

August 6, 1957

Mr. A. L. Greslin, Manager
Molybdenum Corporation of America
Questa, New Mexico

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Ida-81094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Greslin:

In reference to your letter of July 29, 1957, concerning the matter of taking samples, the Government does not consider that a grab sample would give true representative results. Further, it is believed that a channel or chip sample can be taken without seriously disrupting other operations.

For the reasons stated above, your request to substitute grab sampling for the channel sampling, as provided for in the Contract, is denied.

Very truly yours,

DMEA Field Team, Region III

By E. M. Harshman
E. M. Harshman
Acting Executive Officer

JWT:prl

cc: Chem.Op.Comm.-3) w/copy of Operator's
Townsend) request of July 29 and
Corres. file) joint memorandum report
from field examiners,
dated August 5, 1957.

Harshman) w/copy of joint memorandum
DMEA/DFC) from field examiners.
(Winkle))

Chron.

Molybdenum Corporation of America
500 Fifth Avenue
New York

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

QUESTA UNIT
TELEGRAPH ADDRESS
W. U. VIA TAOS, N. M.

PLEASE REPLY TO
QUESTA, NEW MEXICO

Questa, New Mexico
July 29, 1957

Mr. W. H. King, Executive Officer, D.M.E.A.
United States Department of the Interior
224 New Customhouse
Denver 2, Colorado

Re: Docket D.M.E.A. - 4568
Molybdenum Contract IDM-E1094
Molybdenum Corporation of America
(Moly or Questa Mine)
Taos County, New Mexico

Dear Mr. King:

This is with reference to the part in the Contract concerning the channel sampling of the drifts and crosscuts which call for a 3 inch wide by 1 inch deep horizontal channel along one wall.

This will be extremely hard to do during the time we are driving the drifts and crosscuts as these will be in use for tramming, timbering, etc. during the shift. I don't see how this could be accomplished unless it was done after a drift or crosscut was completed and no work was carried on in that part.

We were wondering if we could continue taking grap samples of the loaded cars as we have in the past and use them for the assay determinations in our report.

Please advise as soon as possible so we may complete our report for work done during June 15th through June 30.

Yours very truly,

Molybdenum Corporation of America

A. L. Greslin

A. L. Greslin, Manager

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 8 1957

DATE	INITIALS	CODE
Memorandum		
To:	Executive Officer, DMEA Field Team, Region III	
	Through: E. N. Harshman	
From:	W. W. Winkle D. H. Richter	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

IN REPLY REFER TO: DMEA
DEPARTMENT OF THE INTERIOR
AUG 5 - 1957
REGION III
DENVER, COLORADO

August 5, 1957

Subject: DMEA Docket 4568 (Molybdenum) Contract Idm-E 1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

In a letter dated July 29, 1957, the operator requests a change, in sampling procedure, from 3-inch wide by 1 inch deep horizontal wall channels, as specified under the contract, to grab samples of loaded cars. The operator's only reason for the change is his contention that the wall channeling will interfere with tramming, timbering, etc.

During the preparation of the examination report, the examiners carefully considered different types of sampling and decided, after weighting of all factors, to require a horizontal wall channel sample. The need for this careful sampling procedure is based on (1) the relatively large size of the exploration program and (2) the necessity of obtaining representative material to accurately evaluate the potential of any low-grade molybdenite body discovered. Prior to work under the subject contract, all sampling employed at the mine was grab sampling and according to Mr. J. B. Carman, Western General Manager, Molybdenum Corporation of America, checks on this method indicated poor representation of the grade in the workings.

The operator's contention that the sampling will interfere with the underground work appears unfounded and is probably based on his belief that such sampling will require floor cloths and perhaps block tramming.

We believe, however, that it would not necessarily be to the Government's interest to require such elaborate procedure and suggest that the operator be advised that channel samples collected directly into boxes or racks be permissible. Certainly the Government will not require a channel exactly 3 inches wide and 1 inch deep, but a reasonable facsimile that a sampler can easily cut in a 5 by 7 drift without hindering the mine work.

The writers recommend that the request be denied.

W.W. Winkle/DHR

W. W. Winkle, Mining Engineer

D.H. Richter

D. H. Richter, Geologist

DHRichter:arh

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

OFFICIAL FILE COPY
DMEA
RECEIVED JUN 20 1957

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		~~225~~
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June 14, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 4568 (Molybdenum), Contract No. Idm-E1094, Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the Government's, Division, and Audit copies of Exploration Project Contract No. Idm-E1094, which was forwarded by your letter of May 31, 1957, for insertion of a suitable starting date under Article 1 and signature by an authorized representative of the Corporation.

Also enclosed are three copies of a letter from this office, dated June 14, 1957, whereby we forwarded the "Operator's Copy" of the Contract, blank report forms and instructions relative to reporting on work performed under the Contract, and procedures to be followed in communicating with this office in all matters pertaining to the Contract.

The Contract, dated May 31, 1957, which has been executed and is in force, provides for work estimated to cost $510,500.00, toward which the Government will contribute 50%, or an amount not exceeding $255,250.00.

W H King
W. H. King

Enclosures

224 New Customhouse
Denver 2, Colorado

June 14, 1957

EXPLORATION
SECTION
RECEIVED JUN 20 1957
DATE | INITIALS | CODE

CERTIFIED MAIL

Mr. Marx Hirsch, President
Molybdenum Corporation of America
500 Fifth Avenue
New York 18, N. Y.

Re: Docket No. DMEA 4568 (Molybdenum)
Contract No. Idm-E1094
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Dear Mr. Hirsch:

Enclosed herewith is the "Operator's Copy" of Exploration Project Contract No. Idm-E1094, Docket No. DMEA 4568.

Also enclosed are six copies of form MF-104, "Operator's Monthly Report and Voucher," and six copies of form MF-104A, "Operator's Unit Cost and Progress Report." At the end of the first calendar month after work is commenced, and monthly thereafter, you are required to submit the original and four copies of each form to the Executive Officer, Defense Minerals Exploration Administration, 224 New Customhouse, Denver 2, Colorado. The extra copy is for your records.

Forms MF-104 and MF-104A are to be combined into five sets of one of each form; each set of the combined forms is to be accompanied by a map or sketch showing the location and extent of work performed, and a signed narrative report which describes the work performed, conditions encountered, and results of the work. The monthly accounting report will not be processed for reimbursement to you unless it is accompanied by a signed narrative report and other required and pertinent data. Additional copies of forms MF-104 and MF-104A will be sent to you each month on receipt of your report for the prior month.

For your information and in reply to many questions that have been asked, after forms MF-104 and MF-104A are received, an engineer will check progress and approve your accountx, after which they will be sent to the Regional Office, Region III, U. S. Bureau of Mines, 224 New Customhouse, Denver 2, Colorado, for administrative examination and vouchering. If the report is in order, a check will

be issued by the Treasury Department for the Government's portion of the approved costs. If you have any difficulty in completing these forms and the reports, please call on this office for assistance.

In the matter of your claim for reimbursement of drilling costs under the terms of the contract, reimbursement to you will be on the basis of a hole or holes completed to the objective, which has, or have been drilled in compliance with the conditions under the "General Provisions" section of Exhibit "A" of the contract and the special conditions pertaining to the drilling under each stage. Therefore, your monthly report should include only such holes which are completed to that extent, and the required records made a part of your claim for reimbursement.

The contract is prepared on form MF-200A, and under its provisions and as outlined in Exhibit "A", the work is to be performed at "Fixed Unit Costs," which will be the basis of reimbursement to you as units of work are completed and reported on forms MF-104 and MF-104A.

Your requests to this office for work approval, changes in the contract, or any other communication pertaining to operations under the contract, must be in writing, of which please supply the original and five copies, each copy complete with maps or other pertinent data. Each request for action by this office must pertain to one matter only and such requests are not to be incorporated in your narrative report accompanying monthly progress report forms MF-104 and MF-104A.

The location of the work to be performed under Stage I is indicated on the map, "Figure 4," attached to the contract. Should conditions encountered necessitate any appreciable change in the location or direction of any of the work, approval of this office for the change must be obtained prior to performance of the work. Otherwise, the work may not be acceptable for reimbursement to you under the terms of the contract.

Your attention is directed to the provision that Stage II work is contingent on the results obtained from Stage I, and performance of the work under Stage II is subject to the prior written approval of the Government.

When work under Stage I has been completed, you must request approval from this office for the work you propose to perform under the next stage. Your request for the work approval must be in sextuplicate, each copy complete with a map showing the location and extent of the work completed and the location of the additional work proposed. Also, your request must include an evaluation of the work completed and include assay returns and any other pertinent data which will be of value to the Government in appraising the results of the work.

You should anticipate a suspension of operations between stages of work, to enable the Government geologist and engineer to evaluate the results of the work performed and make their recommendations to this office relative to the additional work you propose.

To eliminate as much delay to operations as possible, if that is of serious consideration, you should expedite forwarding of the results of the work completed and your request for the Government's approval of the additional work you propose.

No oral statement of any person shall be construed to modify or change the terms of the contract. Field representatives of the Government are not authorized to approve any changes in the work program or contract provisions. Such approval can only be given by the Washington Office, DMEA, or by the DMEA Field Team, Region III.

It is a regulation that reimbursement for the cost of work accomplished prior to the date of the contract will not be allowed.

Very truly yours,

Original signed by
W. H. KING

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

Enclosures

JWT:prl

cc: Chmn.Op.Comm.-3
Finance Office, Reg. III
Amendment file, Reg. III
Harshman
DMEA/DPC
Townsend
Corres. file
Chron.

CORRECT FILE COPY
DMEA
DENVER JUN 7 1957
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6-10 | C | 220

224 New Customhouse
Denver 2, Colorado

June 3, 1957

CERTIFIED MAIL

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, N. Y.

Re: Docket No. DMEA 4566 (Molybdenum)
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico -
Proposed Exploration Project
Contract No. Idm-E1094

Gentlemen:

Enclosed are the Government's, Division, Audit, Finance Office, and Field Team copies of proposed Exploration Project Contract No. Idm-E1094, which has been prepared pursuant to your application for Government assistance in exploration work under the Defense Minerals Exploration Administration program.

If the Contract is satisfactory, all copies are to be signed by an official of the Corporation authorized to sign such an instrument, the signer's title inserted, the signature attested to by the Secretary of the Corporation, the corporate seal affixed, and all copies promptly returned to this office.

In the event the Contract is not satisfactory, all copies are to be returned promptly to this office, together with your comments on or objections to the Contract.

Your attention is especially directed to three provisions in the Contract:

1. The Government will not contribute to the costs of any of the work that is provided for in the Contract which is performed prior to the date of the Contract.

2. The Contract requires completion of the exploration work within the period fixed therefor. Approval must be obtained from this office for any suspension of work which may result in failure to complete the work within the period specified.

2. Royalty is due the Government on all production from the land described in the Contract, beginning on the date of the Contract.

If the Contract is satisfactory, and upon return of all copies properly signed, the "Operator's Copy" of the Contract will be forwarded to you, together with blank report forms and instructions relative to reporting on work performed under the Contract. Also, instructions will be given as to the procedure to be followed in corresponding with this office in matters concerning operations under the Contract.

When the signed copies of the Contract are returned, please advise the date on or before which work will be commenced, for our insertion in Article I of the Contract form.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enclosures

cc: Mr. J. E. Carman
Molybdenum Corporation of America
Urad Mine
Empire, Colorado

JDC:prl

cc: Chmn.Op.Comm.-2
Harshman
Konselman
Townsend
Docket
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
5/28	Murphy	700
5/28	Ellis	700
5-28	Chambers	800
5/31	[illegible]	130
"	Whitaker	100
5/31	C	220
		700

MAY 31 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Harshman:

Enclosed are the original and five copies of a proposed short-form contract signed by the Administrator for the Government. Attached to each contract form MF-200A are Annex I (1 page), Annex II (1 page), Exhibit "A" (5 pages), and two maps (Figures 4 and 5). Also enclosed are two extra copies of Annex I, Annex II, Exhibit "A," and the two maps.

If you and the Applicant find the proposed contract in order, please insert in Article 1 of the contract form the date work shall commence, then have an authorized representative of the corporation sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not meet with your approval and the Applicant's, then the original and all copies, including the extra copies, are to be returned to this office with the proposed changes for consideration.

You will note that the proposed short-form contract does not consider the increase in incidental costs of the drilling if other work is not being done at the same time as suggested by the Field Team. It is believed that if only drilling is being done, then the supervision and other incidental costs could be considerably curtailed to conform with the lesser amount of work.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (SLB)

Enclosures
APPROVED:

/s/ G. D. McMahon (SLB)
Member, Bureau of Mines

Thor H. Kiilsgaard (SLB)
Member, Geological Survey

FMMurphy/gla/izm 5-28-57 (4-30-57)
cc to: Mr. Murphy
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

8623

A. Phase 1

8,000' d.d. = [illegible]

700
400
5) 2700
15
20

B Phase 1

(1) 1,000 [illegible] d.d. x-cut = 5 [illegible]

(2) 1,000 [illegible] d.d. = [illegible]

Phase 2

(1) 6 160' d.d. x-cut =

(2) 8,500

Poor project - Considerable low grade reserves should exist in 30 miles of workings but evidence is lacking for a major low grade deposit which would have to be in the 10's of millions of tons at a grade of 0.50% MoS_2. Costs appear to be padded. If labor for drifting is \$8.00 - \$10.00 per ft. a \$44.00 per ft. total cost is out of line. Dual fixed incidental costs for D.D. would be impossible to administer. Make actual cost with maximum per ft. for each type of work, or cut unit costs to what they would be for an efficient job when the property is otherwise in operation. I agree with Chambers and your objections.

Set drilling cost at units and costs as set up in bid and not averaged. Why don't we spell out direction and distance for drifts and crosscuts instead of to a certain coordinate? We try to confuse everyone and make it difficult to administer.

FEJ

N.J. Zinc have contract price agreeable, winding up beef date cost O.K. minor provisions sampling, etc. sludge sampling objectionable. Insurance will explain risk & disallowance not will beef same date.
talked Klenze yesterday.

cost with max. min. per ft. for each type of work, in cost unit cost to what they would be for an efficient job when VR properly is interested in operation. I agree with Thomas and your objections. The Building cost at unit cost as set up is bad and not arranged. Why don't we report with discussion and discussions for chiefs & commanders to attend? to a uniform coordinate? Why try to compare company & market of different to determine?

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-30	Chambers	800
		130

April 30, 1957

Memorandum

To: Chairman, Operating Committee

From: Jay L. Chambers, Chief
Contract Administration and Audit Division

Subject: Proposed Contract
Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly or Questa Mine
Taos County, New Mexico

I am submitting the attached proposed contract without my surname for the following reasons:

1. The incidental allowance for each foot of drilling at $4.29 a foot amounts to approximately $122,000.00, while the drilling costs on which this incidental allowance is made amounts to only approximately $101,000.00. Because the work outside of drilling is on a fixed unit cost basis, and because the amount per unit for this work appears to be liberal, the incidental allowance can be assumed to pertain only to those expenses incurred in drilling.

2. The proposed method of calculating incidental allowances would be difficult to administer and would require the withholding of all but $1.48 per foot of this allowance until the project was complete. If the project was never complete for some reason, no more than the $1.48 a foot could be used. This might cause us some trouble.

3. In the 4th paragraph on page 2 whose first sentence is "The work shall be performed in two stages", there is a contradiction in terms.

4. The paragraph headed Project Area A forbids the payment for any hole which penetrates more than 20 feet in rock that contains no visible molybdenum. There are other things in this paragraph which also need attention.

5. The first paragraph under Stage II on page 3 contradicts the essence of the description given in Exhibit "A". No

6. Paragraph 3 under Stage II on page 3 is not understandable to me in its present state. It certainly should come after the next succeeding paragraph and probably should be clarified.

7. It appears to me that this type of a contract should be on a long-form with all the categories outlined and probably certain maximums established for certain kinds of work.

JLChambers/wb
April 30, 1957

Copy to: Docket, Admr. Reading File, Mr. Chambers

8623

O.K. by me after we delete that "method of ~~performing~~ sampling"

(unless Fred comes up with a good reason why it should only be in this contract)

Note to Operating Committee

Re: Docket DMEA-4568
Molybdenum Corporation of America.

I would like to call your attention to the following two items for your determination:

1. Annex II, Article 10 (c), line 9. Reference is made to Article 6(b) (2) of the contract. This reference, in my opinion, should read "6(b) (2), as amended in Article 10". This might forestall future misunderstanding.

2. Page 3 of Exhibit A, last sentence of paragraph one. Suppose the Operator encounters rock immediately. According to this line he would have to stop drilling the hole in 20 feet.

J. L. Chambers
5/28/57

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/30	Murphy	700
"	Ellis	700
		800
		130
		110
		100
		220
		700

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Harshman:

Annex II (1 page)

Enclosed are the original and five copies of a proposed ~~long~~ short-form contract signed by the Administrator for the Government. Attached to each contract form NF-200 are Annex I (1 page), Exhibit "A" (5 pages), and two maps (Figure 4 and ~~Figure~~ 5). Also enclosed are two extra copies of Annex I, Exhibit "A," and the two maps.

If you and the Applicant find the proposed contract in order, please insert in Article 1 of the contract form the date work shall commence, then have an authorized representative of the corporation sign the original and all copies. Thereafter, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not meet with your approval and the Applicant's, then the original and all copies, including the extra copies, are to be returned to this office with the proposed changes for consideration.

Sincerely yours,

Chairman, Operating Committee

Enclosures

FMMurphy/gla
4/30/57

APPROVED:

cc to: Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
Code 700, Mr. Murphy

Member, Bureau of Mines

Member, Geological Survey

8623

Government's Copy

MF-200
(Revised June 1954)

Docket No. DMEA 4568

Commodity Molybdenum

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

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] Molybdenum Corporation of America, a Delaware Corporation, whose mailing address is 500 Fifth Avenue New York 18, New York, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and maps Figure 4 and Figure 5

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of New Mexico, County of Taos, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the[4] Owner of[5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a[6] See Annex I, [7] recorded in Book See Annex I, page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: .....

.....

.....

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Molybdenum. The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before December 31, 1960 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall ~~either~~ have completed the work ~~as shall have incurred allowable costs (see Article 8) in an amount not less than the estimated total allowable costs set forth in Exhibit "A",~~ except as otherwise provided in Exhibit "A" with respect to stages of work. (See Article 13.)

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $590,030.00 (rounded) The Government shall contribute 50 percent of the allowable costs as they are incurred in a total sum not in excess of $295,015.00 : *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work.~~ See Article 13.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums. See Article 13.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article ~~9~~ 8. See Article 13.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. **See Article 13.**

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

Administrator, Defense Minerals Exploration Administration

MOLYBDENUM CORPORATION OF AMERICA
(Operator)

By .....

Title .....

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—70017-1

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stages of work."

(b) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon is deleted.

(c) Categories (2) through (7) of Article 6(a) are deleted.

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the Contract.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9."

(f) In Article 8(b)(2), the period ten years is changed to twelve years.

(g) Notwithstanding any other provision of the Contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: Provided, That the Government will not contribute to any portion of an average unit cost of a drilling item that exceeds the estimated unit cost of said item set forth in the contract.

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore for deposits of molydenum ore by means of diamond drilling, drifting, and crosscutting.

The Government will not contribute to the cost of a diamond drill hole that bottoms less than AX size, or to one that is not completed, excepting individual holes where the Government, in writing, waives these provisions because of unforeseen drilling conditions. Drill holes shall be cemented and drilled out as necessary.

All drifts and crosscuts shall be timbered as necessary, and shall be not less than 5 feet by 7 feet in cross section clear of the timber. Drill stations shall be of sufficient size to permit breaking the drill rods in at least 10-foot sections.

Core (~~recovered from holes through mineralized material~~) shall be split over 10-foot sections. In mineralized areas the drifts and crosscuts shall be sampled by cutting a continuous 5-foot horizontal channel approximately three inches wide and one inch deep along one wall. In case it is impractical to cut a continuous 5-foot channel along the same wall, the other wall may be sampled opposite the interval where the channel cut was interrupted and the two samples combined.

The Operator shall have one-half of the mineralized core and one-half of each channel sample assayed for MOS_2. The remaining half of the core shall be stored with the non-mineralized portion of the core in boxes identified as to hole number, with markers placed in the core sections to show the depths represented; and the remaining half of each channel sample shall be stored in a suitable container properly identified as to the location where it was procured in the drifts or crosscuts. The stored core and channel samples shall be kept available for Government inspection and possible use, and the Operator ~~shall~~ may dispose of the stored portions of the core and channel samples only after prior Government approval.

All drill holes shall be logged, and the drifts and crosscuts shall be mapped geologically. The Operator's monthly progress report shall include maps or sketches showing the extent of the

drilling, drifting, and crosscutting completed during the reporting period; the structures and the type of rock formations encountered; and the assay values of the samples. The report shall also include the drill hole logging records, together with the assay certificates of the core and channel samples.

The Operator shall employ at least one engineer-geologist and one supervisor full time to provide the necessary technical services and the direction of the work. When possible, the work under the contract shall be on the basis of at least two shifts for each 24-hour period.

The location, direction, inclination, extent, and methods of performing the work under the contract are subject to Government approval.

The work shall be performed in two stages. The Operator shall perform all the Stage I work, and as much of Stage II work as is approved in advance in writing by the Government. ~~Unexpended funds and requirements of work remaining in Stage I and Stage II may be interchanged to complete work authorized under the contract, when approved in writing in advance by the Government.~~

~~Stage I~~

The work under Stage I consists of cutting drill stations, diamond core drilling, drifting, and crosscutting. The approximate locations, bearings, and extents of the drifts, crosscuts, and drill holes, and also the inclinations of the drill holes, are shown on the map entitled "Figure 4. Plan and Cross Section Map Showing Recommended Exploration on the Second Tunnel Shaft Level, Questa Molybdenum Mine, . . ." attached hereto and made a part hereof.

Project Area A

The core drilling consists of drilling 16 holes, totaling an estimated 8,000 feet, from the drill ~~sites~~ hole locations numbered 1 through 16 on map Figure 4. However, if Crosscut No. 1 North has advanced beyond the 400 N coordinate, the Government and the Operator shall agree in writing as to new locations for Holes Nos. 15 and 16. No holes shall exceed 500 feet in depth, and no hole shall penetrate more than 20 feet into rock that contains no visible molybdenum mineralization.

Project Area B

From the west face of the Second Tunnel Shaft level at the time work under this contract begins, continue the

tunnel westward to about coordinate E 90 on approximately the bearing shown on map Figure 4. From this point a ~~diamond~~ hole ~~drill hole on the same bearing as the tunnel~~ shall be drilled approximately horizontally to a depth of about 500 feet.

to the west

At approximately coordinate E 440 in the above west-trending tunnel, a crosscut shall be driven in a north direction to approximately coordinate N 340. From this point a diamond drill hole shall be drilled approximately horizontal to the north to a depth of about 500 feet.

If the face of the west tunnel or the face of the crosscut is in granite at approximately coordinates E 90 and N 340, respectively, the hole from such a granite face shall not be drilled.

Break up.

It is estimated that 8 drill stations, amounting to 115 linear feet of raises and drifts and/or crosscuts; 9,000 feet of diamond drilling; 1,000 feet of drifting and crosscutting (exclusive of drill stations); 1,000 feet of timbering; and 1,100 sample analyses for MoS_2 content, will be required to complete the work under Stage I.

Stage II

Area B.

Stage II will not be approved by the Government unless the face of the second tunnel shaft level is in ~~granite~~ rock showing visible molybdenum at the termination of Stage I, or unless the westward-bearing diamond drill hole from the face penetrates ~~granite-type~~ molybdenum bearing rock.

The work consists of extending the tunnel on the bearing shown on map Figure 4 to approximately coordinate W 300. At about coordinates E 40 and W 300, crosscuts shall be driven in both north and south directions to explore for possible contacts of the granite and overlying "Green Rock" or volcanics. The crosscuts are shown on map Figure 4.

Favorable areas disclosed by work under Stages I and II shall be further explored by not more than a total of 19,500 feet of diamond drilling. ~~The location, bearing, inclination, and depth of each hole are subject to prior written approval by the Government.~~

~~Under Stage II of this contract,~~ and not in excess of 6,160 feet of drifting and crosscutting (exclusive of drill stations); 250 linear feet of raises and drifts and/or crosscuts for drill stations; ~~19,500 feet of diamond drilling, with attendant cutting of drill stations;~~ 6,160 feet of timbering; shall be performed, nor more than 3,182 samples analyzed for their MoS_2 content.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts 1/

9,000 feet of diamond drilling @ $3.50 2//ft.	$31,500.00
500 feet cementing holes and drilling out @ $1.00/ft. and/or reaming and casing	500.00

~~Fixed Unit Costs 3/~~ Categories 2 thru 7 waived.

Incidental allowance for each foot of drill hole completed, 9,000 feet @ $4.29* 4//ft. (or $1.48*/ft., see footnote)	38,610.00 *
Drill stations:	
115 lineal feet of drifts, crosscuts, and/or raises @ $44.43*/ft.	5,109.45 *
Drifts and Crosscuts:	
1,000 feet @ $44.43/ft.*	44,430.00 *
Timber (as needed), 1,000 feet @ $2.70*/ft.	2,700.00 *
Chemical analyses for MoS_2 content of 1,100 samples @ $3.00*/sample	3,300.00 *
Estimated Total Cost Stage I	$126,149.45

Stage II

Actual Costs

Category (1) Independent Contracts 1/

19,500 feet of diamond drilling @ $3.50 2//ft.	$68,250.00 ok
1,000 feet cementing holes and drilling out @ $1.00/ft. (0-100, 100-200) and/or reaming & casing	1,000.00

Fixed Unit Costs 3/

Incidental allowance for each foot of drill hole completed, 19,500 feet @ $4.29 4//ft. (or $1.48/ft., see footnote)	83,655.00

Drill stations:

250 feet of drifts, crosscuts, and/or raises @ $44.43/ft.	$ 11,107.50	
Drifts and Crosscuts:		
6,160 feet @ $44.43/ft.	273,688.80	
Timber allowance, 6,160 feet @ $2.70/ft.	16,632.00	
Chemical analyses for MoS_2 content of 3,182 samples @ $3.00/sample	9,546.00	
Estimated Total Cost Stage II		$463,879.30

S U M M A R Y

Estimated Total Cost Stage I	$126,149.45	
Estimated Total Cost Stage II	463,879.30	
Estimated Total Cost of Project (rounded)		$590,030.00
Government Participation @ 50 percent		$295,015.00

1/ Categories (2) through (7) do not apply to this contract.

2/ Represents the average cost per foot of drilling (See Article 13(g)).

3/ See Article 13(d).

4/ The "Incidental allowance" covers all costs for which no estimate is made in Exhibit "A," and includes all costs whatsoever that might be allowable under Categories (2) through (7). The rate of $4.29 for each foot of drill hole completed is allowable only in the event that all requirements of drifting and crosscutting under the contract have been completed, and in the event that the Operator is not mining or driving development and/or exploratory openings in the Project Areas A and B for its own account. If the Operator is mining, developing, or exploring for its own account in Areas A or B or if all drifting and crosscutting under the contract have not been completed, the "Incidental allowance" shall be $1.48 for each foot of drill hole completed.

DRAFT
FMMurphy/gla
5/8/57

Annex I remains the same

Docket

MF-200A
(Rev. April 1956)

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
EXPLORATION PROJECT CONTRACT
(Short Form)

DMEA No.	*Commodity*	*Contract No.*	*County*	*State*
		Idm–E		
4568	Molybdenum		Taos	New Mexico

It is agreed ....., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Molybdenum Corporation of America, a Delaware Corporation

whose mailing address is 500 Fifth Avenue, New York 18, New York

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority and project.*—(a) This contract is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF–200A), the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed therein. The project work is a search for indicated or undeveloped deposits of the commodity designated above. The Operator shall begin the work on or before ....., and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 30 months from the date of the contract.

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the project work is $510,500.00. The Government will contribute ..... percent of the fixed unit cost of the work performed, not exceeding $255,250.00, in accordance with the provisions of Articles 4 and 5.

(c) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's rights of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances: None

Operator is the owner of the claims

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached, as follows: None

(c) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing

in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. Two copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. *Performance of the work.*—(a) Operator's responsibility.—The work shall be performed diligently, efficiently, expertly, in a workmanlike manner, and in accordance with good mining standards and State regulations governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work, as specified in Article 1 (a).

(b) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after certification of discovery or development, to inspect production operations and underground workings. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. *Contribution by the Government.*—The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5 (b); but all payments by the Government are provisional only, subject to audit, and until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been rendered, the Government may withhold such sums as it sees fit but not in excess of 10 percent of the estimated total cost of the work. To the extent that excesses over fixed unit costs or any excess over the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such excesses for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(a) Operator's records.—The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing a detailed statement of units of work performed during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and the fixed unit costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after the Operator has rendered a sufficient final report (see Article 5), may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer or as surety if the Operator is not the producer (for example, if the Operator either transfers or fails to retain his interest in the land), shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, for a period of ten years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling, assaying, or transportation performed or paid by the Operator or by anyone other than the buyer are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent) after the lapse of six months from the date the ore was extracted from the ground remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½) percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this Article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 7. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon the Government shall be free of all obligation to pay on account of units of work not then performed, and the Operator shall be free of all further obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and liens to secure the payment thereof, and such rights shall be fully preserved.

ARTICLE 8. *Notices to be given by the Government* may be delivered to the Operator or may be sent by registered mail addressed to the Operator at the mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. *Changes and added provisions.*—

(a) Regardless of any certification, any ore hauled through drifts or crosscuts opened up under this contract will be subject to royalty payment to the Government.

(b) In Article 6(b), the time for repayment of royalties is extended from 10 years to 15 years.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

.....
(Operator)

By .....

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: 1956—O-383069

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FMMurphy/dlm
5-8-57

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore for deposits of ~~xxxxx~~ molybdenum ore by means of diamond drilling, drifting, and crosscutting.

The Government will not contribute to the cost of a diamond drill hole that bottoms less than AX size, or to one that is not completed, excepting individual holes where the Government, in writing, waives these provisions because of unforeseen drilling conditions. Drill holes shall be cemented and drilled out or reamed and cased as necessary.

All drifts and crosscuts shall be timbered as necessary, and shall be not less than 5 feet by 7 feet in cross section clear of the timber. Drill stations shall be of sufficient size to permit breaking the drill rods in at least 10-foot sections.

Mineralized core shall be split over 10-foot sections. In mineralized areas the drifts and crosscuts shall be sampled by cutting a continuous 5-foot horizontal channel approximately three inches wide and one inch deep along one wall. In case it is impractical to cut a continuous 5-foot channel along the same wall, the other wall may be sampled opposite the interval where the channel cut was interrupted and the two samples combined.

The Operator shall have one-half of the mineralized core and one-half of each channel sample assayed for MoS_2. The remaining half of the core shall be stored with the non-mineralized portion of the core in boxes identified as to hole number, with markers placed in the

core sections to show the depths represented; and the remaining half of each channel sample shall be stored in a suitable container properly identified as to the location where it was procured in the drifts or crosscuts. The stored core and channel samples shall be kept available for Government inspection and possible use, and the Operator may dispose of the stored portions of the core and channel samples only after prior Government approval.

All drill holes shall be logged, and the drifts and crosscuts shall be mapped geologically. The Operator's monthly progress report shall include maps or sketches showing the extent of the drilling, drifting, and crosscutting completed during the reporting period; the structures and the type of rock formations encountered; and the assay values of the samples. The report shall also include the drill hole logging records, together with the assay certificates of the core and channel samples.

The Operator shall employ sufficient personnel to provide the necessary technical services and the direction of the work. When possible, the work under the contract shall be on the basis of at least two shifts for each 24-hour period.

The location, direction, inclination, extent, and methods of performing the work under the contract are subject to Government approval.

The work shall be performed in two stages. The Operator shall perform all the Stage I work, and as much of Stage II work as is approved in advance in writing by the Government.

Stage I

The work under Stage I shall consist of exploring the two areas designated as Area A and Area B on the map entitled "Figure 4. Plan and Cross Section Map Showing Recommended Exploration on the Second Tunnel Shaft Level, Questa Molybdenum Mine, . . . , " attached hereto and made a part hereof.

The approximate locations, bearings, and extent of the exploratory drifts, crosscuts, and drill holes the last with their inclinations, are also shown on Figure 4.

The work in the areas may be performed simultaneously as follows:

Project Area A

The work in project Area A shall consist of drilling 16 holes from the locations shown on map Figure 4. However, if Crosscut No. 1 North has advanced beyong the 400 N. coordinate, the Government and Operator shall agree in writing as to new locations for holes Nos. 15 and 16.

It is estimated that 8 drill stations and 8,000 feet of diamond drilling will be required to complete the 16 holes. No drill hole shall exceed 500 feet in depth and no hole shall penetrate more than 20 feet into rock that contains no visible molybdenum mineralization.

Project Area B

The work in Area B shall consist of drifting, crosscutting, and drilling as follows:

From the west face of the Second Tunnel Shaft Level at the time work under this contract begins, continue the

tunnel westward to about coordinate E90 shown on map Figure 4. From this point a hole shall be drilled approximately horizontal to the west to a depth of about 500 feet.

At approximately coordinate E440 in the above mentioned west-trending tunnel, a crosscut shall be driven in a north direction to approximately coordinate N340. From this point a diamond drill hole shall be drilled approximately horizontal to the north to a depth of about 500 feet.

It is estimated that to complete the exploratory work in Areas A and B will require the cutting of 8 drill stati ns amount to 115 lineal feet of raises, drifts, and/or crosscuts; 9, 000 feet of diamond drilling; 1,000 feet of drifting and crosscutting; 1,000 feet of timbering; and 1,100 sample analyses for MoS_2 content. However, if this estimate is too low, then with previous written Government approval, the required units of work and their costs may be transferred from Stage II with a corresponding reduction in that stage.

Stage II

The work under Stage II shall be limited to exploring Area B. The work will not be approved by the Government unless the face of the Second Tunnel Shaft Level is in rock containing visible molybdenum at the termination of Stage I, or unless the westward-bearing diamond drill hole from its face penetrates rock containing visible molybdenum.

The work consists of extending the Second Tunnel Shaft Level westward to approximately coordinate W. 300 shown on map Figure 4. At about coordinates E 40 and W 300, crosscuts shall be driven in both north and south directions to explore for possible contacts of the granite and overlying "Green rock" or volcanics.

Favorable areas disclosed by work under Stage I and Stage II in this Area B shall be further explored by not more than 19,500 feet of diamond drilling.

Under Stage II of this contract, not in excess of 19,500 feet of diamond drilling with 250 feet of drifts, crosscuts and/or raises for drill stations; 6,160 feet of drifting and crosscutting; 6,160 feet of timbering, shall be performed; nor more than 3,182 samples analyzed for their MoS_2 content.

Fixed Unit Costs

Stage I - Areas A and B

Diamond drilling:	
9,000 feet @ $5.00/ft.	$45,000.00
Reaming and casing or cementing and drilling out drill holes, 500 feet @ $1.00/ft.	500.00
Drill stations:	
115 lineal feet of drifts, crosscuts, and/or raises @ $44.43/ft	5,109.45
Drifts and crosscuts:	
1,000 feet @ $44.43/ft	44,430.00

Timbering drifts and crosscuts
(as needed)

1,000 feet @ $2.70/ft $2,700.00

Chemical analyses for MoS_2
content of

1,000 samples @ $3.00/sample 3,300.00

Estimated Total Cost Stage I $101,039.45

Stage II - Area B

Diamond drilling:

19,500 feet @ $5.00/ft 97,500.00

Reaming and casing or cementing

and drilling out drill holes,

1,000 feet @ $1.00/ft 1,000.00

Drill stations:

250 linsal feet of drifts, crosscuts,

and/or raises @ $44.43/ft 11,107.50

Drifts and crosscuts:

6,160 feet @ $44.43/ft 273,688.80

Timbering drifts and crosscuts
(as needed)

6,160 feet @ $2.70/ft 16,632.00

Chemical analyses for MoS_2
content of

3,177 samples @ $3.00/sample 9,531.00

Estimated Total Cost Stage II $409,459.30

S U M M A R Y

Estimated Total Cost Stage I $101,039.45
Estimated Total Cost Stage II 409,459.30

Total Estimated Cost of Project (rounded).....$510,500.00
Government Participation @ 50% $255,250.00

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Revisions of Exhibit "A"
Molybdenum Corporation of America
Docket No. DMEA-4568

Page 1 - under General Provisions - in fifth paragraph, 10th line, change "shall" to "may".

Beginning with page 2, delete balance of Exhibit "A", and replace with the following:

drilling, drifting, and crosscutting completed during the reporting period; the structures and the type of rock formations encountered; and the assay values of the samples. The report shall also include the drill hole logging records, together with the assay certificates of the core and channel samples.

The Operator shall employ at least one engineer-geologist and one supervisor full time to provide the necessary technical services and the direction of the work. When possible, the work under the contract shall be on the basis of at least two shifts for each 24-hour period.

The location, direction, inclination, extent, and methods of performing the work under the contract are subject to Government approval.

The work shall be performed in two stages. The Operator shall perform all the Stage I work, and as much of Stage II work as is approved in advance in writing by the Government.

Stage I

The work under Stage I shall consist of exploring the two areas designated as Area A and Area B on the map entitled "Figure 4. Plan and Cross Section Map Showing Recommended Exploration on the

Second Tunnel Shaft Level, Cuesta Molybdenum Mine, . . . ," attached hereto and made a part hereof.

The approximate locations, bearings, and extent of the exploratory drifts, crosscuts, and drill holes with their inclinations, are also shown on Figure 4.

The work in the areas may be performed simultaneously as follows:

Project Area A

The work in project Area A shall consist of drilling 16 holes from the locations shown on map Figure 4. However, if Crosscut No. 1 north has advanced beyond the 400 N. coordinate, the Government and Operator shall agree in writing as to new locations for holes Nos. 15 and 16.

It is estimated that 8 drill stations and 8,000 feet of diamond drilling will be required to complete the 16 holes. No drill hole shall exceed 500 feet in depth and no hole shall penetrate more than 20 feet into rock that contains no molybdenum mineralization.

Project Area B

The work in Area B shall consist of drifting, crosscutting, and drilling as follows:

From the west face of the Second Tunnel Shaft Level at the time work under this contract begins, continue the tunnel westward to about coordinate E90 shown on map Figure 4. From this point a hole shall be drilled approximately horizontal to the west to a depth of about 500 feet.

At approximately coordinate E40 in the above west-trending tunnel, a crosscut shall be driven in a north direction to approximately coordinate N340. From this point a diamond drill hole shall be drilled approximately horizontal to the north to a depth of about 500 feet.

It is estimated that to complete the exploratory work in Areas A and B will require the cutting of 8 drill stations amount to 115 lineal feet of raises, drifts, and/or crosscuts; 9,000 feet of diamond drilling; 1,000 feet of drifting and crosscutting; 1,000 feet of timbering; and 1,100 sample analyses for MoS_2 content. However, if this estimate is too low, then with previous written Government approval, the required units of work and their costs may be transferred from Stage II with a corresponding reduction in that stage.

Stage II

The work under Stage II shall be limited to exploring Area B. The work will not be approved by the Government unless the face of the Second Tunnel Shaft Level is in molybdenum-bearing rock at the termination of Stage I, or unless the westward-bearing diamond drill hole from the face penetrates molybdenum-bearing rock.

The work consists of extending the Second Tunnel Shaft Level westward to approximately coordinate W. 300 shown on map Figure 4. At about coordinates E 40 and W 300, crosscuts shall be driven in both north and south directions to explore for possible contacts of the granite and overlying "Green rock" or volcanics.

Favorable areas disclosed by work under Stage I and Stage II shall be further explored by not more than 19,500 feet of diamond drilling.

Under Stage II of this contract, not in excess of 19,500 feet of diamond drilling with 250 feet of drifts, crosscuts and/or raises for ~~cutting~~ drill stations; ~~6,60~~ 6,160 feet of drifting and crosscutting; 6,160 feet of timbering, shall be performed; nor more than 3,182 samples analyzed for their MoS_2 content.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts

Diamond drilling:

from 0 to 200 feet @ $3.00/ft.

from 200 to 400 feet @ $3.50/ft.

from 400 to 500 feet @ $4.00/ft.

or a total of 9,000 feet — $31,500.00

Reaming and casing or cementing and drilling out holes, 500 feet @ $1.00/ft. — 500.00

Categories (2) through (7) are hereby waived 1/ for the following items:

(1) Incidental allowance for each foot of drill hole completed, 9,000 feet, @ $4.29*/ft. (or $1.48*/ft., see footnote 2/) — 38,610.00*

(2) Drill stations:

115 lineal feet of drifts, crosscuts, and/or raises @ $44.43*/ft. $ 5,109.45*

(3) Drifts and Crosscuts:

1,000 feet @ $44.43*/ft. 44,430.00*

(4) Timbering (as needed) 1,000 feet @ $2.70*/ft. 2,700.00*

(5) Chemical analyses for MoS_2 content of 1,100 samples @ $3.00*/sample 3,300.00*

Estimated Total Cost Stage I $126,149.45

Stage II

Actual Costs

Category (1) Independent Contracts

Diamond drilling:

from 0 to 200 feet @ $3.00/ft.

from 200 to 400 feet @ $3.50/ft.

from 400 to 500 feet @ $4.00/ft.

or a total of 19,500 feet $68,250.00

Reaming and casing or cementing and drilling out holes, 1,000 feet @ $1.00/ft. 1,000.00*

Categories (2) through (7) are hereby waived 1/ for the following items:

(1) Incidental allowance for each foot of drill hole completed, 19,500 feet @ $4.29/ft. (or $1.48*/ft., see footnote 2/) 83,655.00*

(2) Drill Stations:

250 ft. of drifts, crosscuts, and/or raises @ $44.43*/ft. 11,107.50*

(3) Drifts and Crosscuts:

6,160 ft. @ $44.43*/ft. 273,688.80*

(4) Timbering (as needed):

6,160 ft. @ $2.70*/ft. 16,632.00*

(5) Chemical analyses for MoS_2 content of 3,182 samples @ $3*/sample 9,546.00*

Estimated Total Cost Stage II $463,879.30

S U M M A R Y

Estimated Total Cost Stage I	$126,149.25
Estimated Total Cost Stage II	$463,879.30
Estimated Total Cost of Project (rounded) ...	$590,030.00
Government Participation @ 50 percent	$295,015.00

* Indicates maximums

1/ The unit cost shown for items (1), (2), (3), (4), and (5) under Stage I and Stage II include all costs whatsoever that are not included in the estimates for Category (1) Independent Contracts and includes such items as supervision, technical services, labor, payroll taxes, supplies, transportation, depreciation and repair of the Operator's equipment that would otherwise be allowed under Categories (2) through (7)

2/ The "Incidental allowance" rate of $4.29 for each foot of drill hole completed is allowable only in the event that all requirements of

drifting and crosscutting under the contract have been completed, and in the event the Operator is not mining or driving development and/or exploratory openings in the Project Areas A and B for its own account. If the Operator is mining, developing, or exploring for its own account in Areas A or B or if all drifting and crosscutting under the contract have not been completed, the "Incidental allowance" shall be $1.48 for each foot of drill hole completed.

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

APR 29 1957

Memorandum

To: The Administrator, DMEA
Attention: Chief, Rare & Miscellaneous Metals Division

From: Associate Solicitor, Division of Mineral Resources

Subject: Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly or Quartz Mine
Taos County, New Mexico

As requested in a reference slip dated April 17, 1957, from Mr. Ellis, we have prepared the attached contract.

We did not have a copy of the claim map (Figure 5) referred to in Annex I, when preparing the Annex, and it should be attached to the contract prior to execution.

Robert P. Dwyer

HCRubin/wog
April 26, 1957
Copy to: Solicitor's Docket (2)
DMEA Docket
E.W.Ellis
R.P.Dwyer
H.C.Rubin
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED APR 29 1957

DATE	INITIALS	CODE
4/29	C	220
	~~Murphy~~	~~700~~

April 25, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico

Enclosed as a supplement to the application is one copy of a bid from an independent drilling contractor for the work proposed.

By the above-mentioned enclosure the Applicant fulfills our original request for three drilling bids.

One copy of the enclosed bid is being forwarded to Mr. Harshman's office as a supplement to the application used by the U. S. Geological Survey. Two copies of the bid are being retained in our file.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED APR 25 1957

DATE	INITIALS	CODE
4/25	C	220
4/25	Mgby	700

AIR MAIL

April 23, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico

In reply to your memorandum of April 17, 1956, subject as above, we enclose 9 copies of a revised "Figure 5" for use in the proposed contract.

E. N. Harshman

E. N. Harshman

Enclosures (9)

7343

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE
4/22	C	220
"	Murphy	~~700~~
"		~~440~~
		225

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, 1957

AIR MAIL

April 19, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

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

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico

In conjunction with the application, included under the subject docket, we enclose copies of the following:

1. Mining Deed, dated February 14, 1939, between J. B. Carman and Bertha W. Carman, his wife, and Molybdenum Corporation of America conveying to the latter the Rhyolite Claims Nos. 1, 2 and 3 and the Granite Lode Mining Claim.

2. Quitclaim Deed, dated November 27, 1956, between Mrs. Joan Greslin and A. L. Greslin and the Molybdenum Corporation of America conveying to the latter Aplite Claims Nos. 1-10.

3. Undated letter from J. B. Carman, Molybdenum Corporation of America, transmitting the foregoing Items 1 and 2 to this office.

One set of the above copies is being sent to Mr. Harshman. Two sets are being retained in our files as a supplement to the original application.

E. N. Harshman

E. N. Harshman

Enclosures

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
APR 18 1957
REGION III
DENVER, COLORADO

Executive Officer, D.M.E.A.
Bureau of Mines, Region III
224 New Customhouse Building
Denver 2, Colorado

Subject: D.M.E.A. 4560

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

Dear Sir:

In a recent conversation with one of your representatives in Denver we were advised that copies of instruments of transfer of any claims in our application had been conveyed to the Molybdenum Corporation since location would be necessary.

We are enclosing herewith four (4) photostat copies of these instruments of transfer covering Aplite claims Nos. 1 through 10 and Rhyolite claims Nos. 2 and 3.

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

by J. B. Carman

J. B. Carman

JBC:r

encls

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE

NO

DRAFT
EMurphy/izm
4-17-57

Docket copy

MF-200
(Revised June 1954)

Docket No. DMEA 4568

Commodity Molybdenum

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

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] Molybdenum Corporation of America, Incorporated in the State of Delaware, whose mailing address is 500 Fifth Avenue New York 18, New York, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and maps Figure 4 and Figure 5

The Operator shall not transfer or assign this contract or any right thereunder without the written consent of the Government.

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of New Mexico, County of Taos, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] Owner of [5] the entire interest in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of a [6] See Annex I, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: None

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: .....

.....

.....

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Molybdenum The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before December 31, 1960 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall either have completed the work or shall have incurred allowable costs (see Article 6) in a sum not less than the estimated total allowable cost set forth in Exhibit "A."

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 590,030.00 (rounded) The Government shall contribute 50 percent of the allowable costs as they are incurred in a total sum not in excess of $ 295,015.00 : *Provided,* That until the Operator has rendered to the Government his final report, and any final 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; but except for any such necessary excesses in categories, subcategories, or items thereunder the Operator is not obligated to incur more than his agreed percentage of the estimated, total allowable cost of the work.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) *Final report.*—Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with five copies of a final report (in addition to the final progress report and voucher). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and related costs incurred.

(d) *Report of sales.*—The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's percentage royalty relates, such as copies of smelter or concentrator settlement sheets, and certified accounts of production and sale or other disposition of production.

(e) *Compliance with requirements.*—If in the opinion of the Government any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the making or completion of such with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

(d) *Unsold production.*—If any production (ore, concentrates, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used by the Operator in integrated manufacturing or fabricating operations (for instance, if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrates, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used by the Operator in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value therof in the form in which and at the time when it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(j) *Government not obligated to buy.*—Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals mined or produced from the land.

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—**In Article 6(b)(2) the period of 10 years is extended to 12 years, within which the Royalty provisions of the contract are effective.**

(a) That part of the last sentence of Article 3 beginning with the word "either" is deleted and replaced by the words "have completed the work, except as otherwise provided in Exhibit 'A' with respect to stage of work."

(b) That part of the last sentence in the first paragraph of Article 6(a) commencing with the semicolon is deleted.

(c) Categories (2) through (7) of Article 6(a) are deleted.

(d) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs not set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.

(e) In the last sentence of Article 6(c), the words "Article 8" are substituted for the words "Article 9."

(f) Notwithstanding any other provision of the Contract, the allowable unit cost per foot of a drilling item is the average unit cost per foot computed on the basis of all the actual unit costs of said drilling item incurred by the Operator: *Provided*, That the Government will not contribute to any portion of an average unit cost of a drilling item [illegible] the actual unit cost of said item set forth in the contract.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....

.....
(Operator)

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—70617-1

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. DMEA-4568

ANNEX I

The land referred to in Article 2 of the Contract consists of twentyone (21) contiguous patented and unpatented lode mining claims. Notices of the location of the claims are recorded in the County Clerk's Office, Taos, New Mexico, as follows:

Name of Claim	Section	Township	Range	Book	Page
Rhyolite No. 2	36	29 N	13 E	F-15	38
" " 3	35-36	29 N	13 E	F-15	38
" " 4	35-36	29 N	13 E	F-28	232
	2	28 N	13 E		
" " 5	35	29 N	13 E	F-28	233
	2	28 N	13 E		
" " 6	35	29 N	13 E	F-28	234
" " 7	35	29 N	13 E	F-28	250
" " 8	35	29 N	13 E	F-28	251
	2	28 N	13 E		
" " 9	35	29 N	13 E	F-28	252
	2	28 N	13 E		
" " 10	35	29 N	13 E	F-28	253
	2	28 N	13 E		
Aplite No. 1	2	28 N	13 E	5-33	6
" " 2	2	"	"	"	7
" " 3	2	"	"	"	8
" " 4	2	"	"	"	9

Name of Claim	Section	Township	Range	Book	Page
Aplite No. 5	2	28 N	13 E	5-33	10
" " 6	2	"	"	"	11
" " 7	2	"	"	"	12
" " 8	2	"	"	"	13
" " 9	2	"	"	"	14
" " 10	2	"	"	"	15
Sargent No. 6	35-36	29 N	13 E	Patent No. 1909	
Sargent No. 7	35-36	29 N	13 E	Patent No. 1909	

The approximate locations of the above claims with reference to section, Township, and Range lines are shown on the map entitled "Figure 5. Claim Map, Moly or Questa Mine, Molybdenum Corporation of America, Taos County, New Mexico," attached hereto and made part hereof.

DRAFT
4/5/57
EMMurphy/gla

EXPLORATION PROJECT CONTRACT
MOLYBDENUM CORPORATION OF AMERICA
DOCKET NO. IMEA-1568

EXHIBIT "A"

Description of the Work

General Provisions

The object of this project is to explore the subject property for possible deposits of molybdenum ore by means of diamond drilling, drifting, and crosscutting.

The Government will not contribute to the cost of a diamond drill hole that bottoms less than AX size or to one that is not completed, excepting individual holes where the Government, in writing, waives these provisions because of unforeseen drilling conditions.

All drifts and crosscuts shall be timbered where necessary, and shall be not less than 5' x 7' in cross section clear of the timber. Drill stations shall be of sufficient size to permit breaking the drill rods in at least 10-foot sections.

Core recovered from holes through mineralized material shall be split over 10-foot sections. In mineralized areas the drifts and crosscuts shall be sampled by cutting a continuous 5-foot horizontal channel approximately three inches wide and one inch deep along one wall. In case it is impractical to cut a continuous 5-foot channel along the same wall, the other wall may be sampled opposite the interval where the channel cut was interrupted and the two samples combined.

The Operator shall have one-half of the mineralized core and one-half of each channel sample assayed for MoS_2. The remaining half of the core shall be stored with the non-mineralized portion of the core in

boxes identified as to hole number, with markers placed in the core sections to show the depths represented; and the remaining half of each channel sample shall be stored in a suitable container properly identified as to the location where it was procured in the drifts or crosscuts. The stored core and channel samples shall be for Government inspection and possible use. With previous verbal or written Government approval, the Operator shall dispose of the stored portionsof the core and channel samples.

All drill holes shall be logged and the drifts and crosscuts shall be mapped geologically. The Operator's monthly progress report shall include maps or sketches showing the extent of the drilling, drifting, and crosscutting completed during the reporting period; and also the assay values of the samples, the structures, and the type of rock formations encountered. The report shall also include the drill hole logging records, together with the assay certificates of the core and channel samples.

The Operator shall employ one engineer-geologist and one supervisor full time to provide the necessary technical services and the direction of the work, also, sufficient other personnel shall be employed to complete the project in a satisfactory manner. When possible the work under the contract shall be on the basis of at least two shifts for each 24-hour period.

The location, direction, extent, and the method of performing the work under the contract are subject to Government approval.

The work shall be performed in two stages. The Operator shall perform all the Stage I work and as much of Stage II work as is approved

of in advance in writing by the Government. With previous written Government approval, unexpended funds and units of work remaining in Stage I andStage II may be interchanged to complete work authorized under the contract.

Stage I

The work under Stage I shall consist of cutting drill stations, diamond core drilling, drifting, and crosscutting. The approximate locations, bearings, and extent of the drifts, crosscuts, and drill holes, and also theinclinations of the drill holes, are shown on the map entitled "Figure 4. Plan and Cross Section Map Showing Recommended Exploration on the Second Tunnel Shaft Level, Questa Molybdenum Mine, . . ." attached hereto and made a part hereof.

Project Area A

The core drilling shall consist of drilling not in excess of 16 holes, totaling an estimated 8,000 feet, from the drill sites shown on map Figure 4. However, if Crosscut No. 1 North has advanced beyond the 400 N coordinate, then with the concurrence of the Government and the Operator, new locations for Holes Nos. 15 and 16 shall be agreed upon in writing. Holes Nos. 1 through 16 shall in no event exceed 500 feet in depth and shall not penetrate more than 20 feet into rock that contains no visible molybdenum mineralization.

Project Area B

From the west face of the second tunnel shaft level at the time work under this contract begins, the tunnel shall be continued westward/to about coordinate E90 on approximately the bearing shown on

map Figure 4. From this point a diamond-drill hole on the same bearing as the tunnel will be drilled approximately horizontally to a depth of about 500 feet.

At approximately coordinate E 440 in the above west-trending tunnel, a crosscut shall be driven in a north direction to approximately coordinate N 340. From this point a diamond-drill hole shall be drilled approximately horizontally to the north to a depth of about 500 feet.

If the face of the west tunnel or the crosscut are in granite at approximately coordinates E 90 and N 340, respectively, the hole from such a granite face shall not be drilled.

It is estimated that 8 drill stations, 9,000 feet of diamond drilling, 1,000 feet of drifting and crosscutting with timber where necessary, and 1,100 sample analyses for MoS_2 content will be required to complete the work under Stage I.

Stage II

Stage II shall be approved by the Government only if the face of the second tunnel shaft level is in granite at the termination of Stage I or if the westward-bearing diamond-drill hole from the face penetrates granite-type rock.

The work shall consist of extending the tunnel on the bearing shown on map Figure 4 to approximately coordinate W 300. At about coordinates E 40 and W 300, crosscuts shall be driven in both north and south directions to explore for possible contacts of the granite and overlying "green rock" or volcanics. The crosscuts are shown on map Figure 4.

Favorable areas disclosed by work under Stage I and II shall be further explored by not more than a total of 19,500 feet of diamond drilling. The location, bearing, inclination, and depth of each hole shall be subject to prior written approvalby the Government.

Under Stage II of this contract, not in excess of 6,160 feet of drifting and crosscutting with timber where necessary, and 19,500 feet of diamond drilling,with attendant cutting of drill stations, shall be performed; nor more than 3,182 samples shall be analyzed for their MoS_2 content.

Estimated Costs of the Project

Stage I

Actual Costs

Category (1) Independent Contracts[1]

9,000 ft. of diamond drilling @ $3.50[2]/ft.	$31,500.00
500 ft. cementing holes & drilling out @ $1/ft.	500.00

Fixed Unit Costs[3]

Incidental allowance for each foot of drill hole completed, 9,000 ft. @ $4.29[4]/ft.	38,610.00
Drill stations:	
115 lineal ft. of drift's crosscuts, and/or raises @ $44.43/ft.	5,109.45
Drifts and Crosscuts:	
1,000 ft. @ $44.43/ft.	44,430.00
Timber allowance (as needed) 1,000 ft. @ $2.70/ft.	2,700.00
Chemical analyses for MoS_2 content of 1,100 samples @ $3/sample	3,300.00

Total Estimated Cost Stage I $126,149.45

Stage II

Actual Costs

Category (1) Independent Contracts[1]

19,500 ft. of diamond drilling @ $3.50[2]/ft.	$68,250.00
1,000 ft. cementing holes & drilling out @ $1/ft.	1,000.00

Fixed Unit Costs[3]

Incidental allowance for each foot of drill hole completed, 19,500 ft. @ $4.29[4]/ft.	83,655.00

Drill stations:

250 ft. of drifts, crosscuts, or/and raises

@ $44.43/ft. 11,107.50

Drifts and Crosscuts:

6,160 ft. @ $44.23/ft. 273,688.80

Timber allowance (as needed) 6,160 feet @ $2.70/ft 16,632.00

Chemical analyses for MoS_2 content of 3,182

samples @ $3/sample 9,546.00

Total Estimated Cost Stage II $463,879.30

S U M M A R Y*

Total Estimated Cost Stage I $126,149.45

Total Estimated Cost Stage II $463,879.30

Total Estimated Cost of Project ..... $590,030.00 (rounded)

Government Participation @ 50 percent ... $295,015.00

1/ Categories (2) through (7) do not apply to this contract.

2/ Represents the average cost per foot of drilling.

3/ The unit cost for each item under Fixed Unit Costs includes all costs whatsoever that are not included in the estimate for Category (1) Independent Contracts, and includes such items (where applicable) as supervision, technical services, labor, payroll taxes, supplies, transportation, depreciation and repair of the Operator's equipment, etc., which would otherwise be allowable under Categories (2) through (7).

4/ The "Incidental allowance" of $4.29 per foot of drill hole completed is only applicable in the event that all approved drifting and cross-cutting under the contract has been completed and the Operator is not mining or driving development and/or exploratory openings in the Project Areas A and B for its own account, otherwise, the "Incidental allowance" shall be $1.48 for each foot of drill hole completed.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4/16	Murphy	700
"	Ellis	700
4/17	Selfridge	130
"	Johnson	110
"	Hartenberg	100
4/18	C	220
		700

Mr. E. H. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

APR 17 1957

Re: Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Harshman:

This is to acknowledge your memorandum, dated April 9, 1957, and the enclosed copies of bids for drilling on the subject property.

Mr. William R. Kuntz, Jr., of the corporation, visited the Washington Office in connection with the application. He stated that the corporation would include the Rhyolite Nos. 2 and 3 and Sargent Nos. 6 and 7 claims along with the other claims in the application. We expect to receive the recording data for these claims about April 16-17, and then draft the proposed contract. In the meantime, will you prepare copies of map "Figure 5. Claim Map ... " (Field Team report), including the above four claims, for attachment to the contract if approved. If it will require more than a week to submit the copies to Washington, kindly hold the maps and attach them to the copies of the contract before execution by the Applicant.

Sincerely yours,

George C. Selfridge

see letter 4/15/57 from applicant

Chairman, Operating Committee (JHB)

APPROVED:

Frank D. Lamb (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

FMMurphy/gla
4-16-57
cc to: Admr.'s Reading File
Operating Committee
Code 700, Mr. Murphy
THKiilsgaard, Rm. 5224

8623

Molybdenum Corporation of America
500 Fifth Avenue
New York

OFFICE OF THE
TREASURER

April 15, 1957

DMEA-4568

Mr. Fred Murphy
Defense Minerals Exploration Administration
Room - 4447
Dept. of the Interior
Washington 25, D. C.

Dear Mr. Murphy:

Enclosed is copy of letter from Mr. J. B. Carman in which he gives the information required by you in connection with the following claims:

Rhyolite No. 2
Rhyolite No. 3
Sargent No. 6
Sargent No. 7

Yours very truly,

Wm. R. Kuntz

WRK/mm
encls.

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

April 12, 1957

Executive Officer, D.M.E.A.
Bureau of Mines, Region III
224 New Customhouse Building
Denver 2, Colorado

Subject: D.M.E.A. 4568

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

Gentlemen:

In conference with our Mr. W. B. Kunts, March 28, Mr. Fred Murphy, D.M.E.A. Room 4447, Department of Interior, Washington 25, D.C. requested that we include in our application four (4) additional claims. We are agreeable to this inclusion.

Following are the claims requested:

Rhyolite No. 2 Unpatented
Section 36 Twp 29 N R 13 E
Recorded, Taos, New Mexico. Book F 15 Page 37-38

Rhyolite No. 3 Unpatented
Section 35 & 36 Twp 29 N R 13 E
Recorded Taos, New Mexico. Book F 15 Page 38

Sargent No. 6 Patent No. 1909
Section 35 & 36 Twp 29 N R 13 E

Sargent No. 7 Patent No. 1909
Section 35 & 36 Twp 29 N R 13 E

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

by J. B. Carmen

JBC:F

CC: WBK

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
APR 15 1957
REGION III
DENVER, COLORADO

April 12, 1957

Executive Officer, D.M.E.A.
Bureau of Mines, Region III
224 New Customhouse Building
Denver 2, Colorado

Subject: D.M.E.A. 4566

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

Gentlemen:

In conference with our Mr. W. E. Kunts, March 28, Mr. Fred Murphy, D.M.E.A. Room 4447, Department of Interior, Washington 25, D.C. requested that we include in our application four (4) additional claims. We are agreeable to this inclusion.

Following are the claims requested:

Rhyolite No. 2 Unpatented
Section 36 Twp 29 N R 13 E
Recorded, Taos, New Mexico. Book F 15 Page 37-38

Rhyolite No. 3 Unpatented
Section 35 & 36 Twp 29 N R 13 E
Recorded Taos, New Mexico. Book F 15 Page 38

Sargent No. 6 Patent No. 1909
Section 35 & 36 Twp 29 N R 13 E

Sargent No. 7 Patent No. 1909
Section 35 & 36 Twp 29 N R 13 E

Yours very truly,

MOLYBDENUM CORPORATION OF AMERICA

by J. B. Carman

J. B. Carman

JBC:r

CC: WRK

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE
4/22	C	220
	Murphy	700

W

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED APR 11 1957

DATE	INITIALS	CODE
4/11	C	220
"	Murphy	700

April 9, 1957

AIRMAIL

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
(Moly or Questa mine)
Taos County, New Mexico

Enclosed are two copies each of the following items:

1. Drilling bid dated March 23, 1957 from Golden Drilling Company.

2. Drilling bid dated March 13, 1957 from George Marshall, Diamond Drill Contractor.

3. Letter of March 18, 1957 from Joy Manufacturing Company (Refusal to bid).

4. Letter of transmittal dated April 4, 1957 from the subject Operator.

The Operator has attempted to obtain additional bids but has not been successful. Please notify the Operator if an additional bid will be required.

E. N. Harshman

E. N. Harshman

Enclosures

MOLYBDENUM CORPORATION OF AMERICA
URAD MINE
EMPIRE, COLORADO

DMEA
DEPARTMENT OF THE INTERIOR
APR 8 - 1957
REGION III
DENVER, COLORADO

April 4, 1957

Executive Officer, D.M.E.A.
Bureau of Mines, Region III
224 New Customhouse Building
Denver 2, Colorado

Subject: D.M.E.A. 4568

Gentlemen:

We are enclosing four (4) copies of core drilling bids requested for the above on each of two bids received and the original and three (3) copies of the refusal of one concern to bid.

Upon receipt of the refusal, we sent out two more requests for bids (March 21st.) We have had no reply from either one.

We are therefore sending these bids to you to avoid further delay. We trust that, under the circumstances, they will be sufficient. If not, kindly advise us to the above address and we will continue our efforts to secure another bid.

Yours very truly,

J. B. Carman

J. B. Carman

JBC:r

OFFICIAL FILE COPY
DMEA
RECEIVED APR 11 1957

DATE	INITIALS	CODE

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

Mr. H. Selfridge

Send

OFFICIAL FILE COPY
D M E A
RECEIVED APR 4 1957
DATE | INITIALS | CODE
4/4 | C | 220

DN 235 BUR MINES 4-3-57 1-53

CHAIRMAN, OPERATING COMMITTEE, DMEA

RE DOCKET DMEA -4568, MOLYBDENUM CORP. OF AMERICA, TELEPHONE CONVERSATION WITH MEMBERS OF YOUR STAFF TODAY. HAVE ASCERTAINED THAT THE WEST DRIFT IS AT EAST CO-ORDINATE - 618, AND TH XX THE CROSSCUT NO.1 NORTH IS AT NORTH CO-ORDINATE 392. BOTH HEADING WILL BE ADVANCED ABOUT 150 FEET IN THE NEXT 30 DAYS.

E N HARSHAMAN, ACTING EXECUTIVE OFFICER

Denver, Colo.

APR 4 7 55 AM '57
BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

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

OFFICIAL FILE COPY
DMEA
RECEIVED APR 3 1957

DATE	INITIALS	CODE
4-3	C	220
"	Murph	700
April 2, 1957		

Memorandum

To: E. W. Ellis, Chief, Rare and Miscellaneous Metals Division-DMEA

Through: Chief, Branch of Ferrous Metals and Ferroalloys

From: Wilmer McInnis, Commodity Specialist, Branch of Ferrous Metals and Ferroalloys

Subject: Review of Report of Examination
Docket No. DMEA-4568
Molybdenum Corporation of America
Questa Mine, New Mexico

After review of subject report, I concur with the Field Team that the revised proposal contains items that may not be fully justified. For example, to do 1,200 feet of drifting and crosscutting without regard to type of rock encountered appears to be more prospecting than exploration.

The applicant appears to be more interested in either proving or disproving his theory that an important mineralized area will be found by drifting Westward from present working than it is in exploring the present indicated low-grade mineralized area. Page 24 of the report seems to bear this out. "The porphyry problem was not resolved and Mr. Carman flatly rejected our alternate program (appendix A) informing us that he was pessimistic about the low-grade area and did not wish to explore it further. Yet he still contends that they are exploring primarily for a large low-grade deposit, since the nature of the high-grade veins has made them uneconomical to mine." The proposed work in this low-grade area (project area A) appears to be the most favorable area for making a significant discovery. However, since molybdenum is a highly strategic commodity and few commercial deposits are known, I concur with the Field Team recommendation that the applicant's revised proposal as modified by the examiners be accepted.

Wilmer McInnis

Wilmer McInnis

Copy to: Mr. Lamb
Ferrous Metals
Files

IN REPLY REFER TO:

COPY
REC APR 2 1957
DATE | INITIALS | CODE
4/3 | C | 220
" | Murphy | 700
C

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

April 2, 1957
Re: DMEA 4568
Molybdenum Corp. of Amer.
Questa or Moly Mine
Taos County, New Mexico
Appl. Est. $471,803.30
Rec'd " 534,454.42
Molybdenum

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Field Team Report

The applicant requested assistance in a large prospecting and/or exploratory project. Classification depends to a great extent on the validity of conclusions based on long projections of rocks whose origins and natures are the subject of differing authoritative opinions.

At best, the proposed work savored of prospecting, as it was necessary to guess what the rock relationships would be 1500 feet below poorly understood surface conditions. The examiners, as was to be expected, could not 'see' the work as exploration, but compromised on a work program consisting of part of the questionable work, in part of good exploratory work in a section of the project area, the 'A' area, where rock relationships have been revealed by underground work done by the applicant. The work has revealed and partially explored what may be a large body of low grade, molybdenite-bearing material.

I concur with the part of the recommended work program of the examiners and the Field Team having to do with the 'A' area. The applicant is determined (and able) to test the hypothesis on which the original application was based, and since filing the application, has done considerable drifting - crosscutting toward the hypothesized target area. Nearly 900 feet of driving remains to be done to reach the area following which a large amount of crosscutting and diamond drilling is proposed.

I recommend that participation in the prospecting be limited. Should conditions appear more favorable when a point near the target area is reached and further work is warranted, participation

could no doubt be increased.

As said above, I concur with the "A" area work. A low grade, 0.50% MoS_2, oval mass of fractured material has been partially outlined at the second tunnel shaft level. It measures 250 x 400 feet and has a possible area of 80,000 square feet. It appears to be open downward and at one end. Upward it seems to be cut off just above the level by the flatly dipping green rock 'roof'. The mineralized mass may occupy the 'nose' which extends, apparently without a break, to a peak 4000 feet to the northeast and 1600 feet higher. The molybdenite-bearing veins of the Questa mine, occur in a slab-like, wedged shaped mass of propylitized rock resting on the southerly slope of the intrusive soda granite, between the granite and the intruded green rock. The wedge points diagonally downward and when the point was reached, near the elevation of the second tunnel shaft level, the mine was about finished.

Sorely needed geologic maps and sections of the upper levels of the mine have been withheld, but the descriptive matter says the westerly end of levels ran into green rock as though an abrupt change in strike of the ore zone had been met. A similar condition appears to exist in the west drive on the second tunnel shaft level but instead of following the contact to the northwest, the drive is being continued westerly. Thus, the existence of a possible 'nose' is not being investigated, but some of the proposed 'A' area work will tend to clarify the situation. The unusual, large scale fracturing and mineralization by molybdenite is, I judge, a new condition and work is warranted here rather than far to the west in a wholly unknown block.

In summary, I concur with the recommended work in the "A" area but recommend that participation in the work to the west be limited in the first stage to enough drifting to reach within 500 feet of the applicant's target area and a 500 foot horizontal diamond drill hole.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

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DMEA		

Memorandum

March 20, 1957

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Joint Report of Examination, Docket DMEA 4568 (Molybdenum), Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico

Enclosed are the original and three copies of a Joint Report of Examination by D. E. Redmon, USBM, and D. H. Richter, USGS, on the subject property.

The field examiners conclude that there is a good chance of making significant discoveries of ore as a result of the proposed exploration program and recommend Government participation in the work as outlined in the subject report. The Field Team concurs in this recommendation.

From the report you will note in Stage I of the proposed project that the cost of diamond drilling is specified at $5.48 per foot. This amount is an estimate only and must be adjusted upon receipt of bids from each of three drilling companies which the applicant has promised to furnish in the immediate future.

Also enclosed are nine extra copies of Figure 4 of the subject report which will be of assistance in the preparation of the contract.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
3-27-57
(date)

ON-SITE EXAM REPORT

IN REPLY REFER TO:

DMEA

DEPARTMENT OF THE INTERIOR

MAR 19 1957

REGION III

DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

TRANSMITTED

MAR 20 1957

March 18, 1957

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Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman
J. F. Shaw

Subject: DMEA Docket 4568 (Molybdenum), Molybdenum Corporation of America (Moly or Questa mine), Taos County, New Mexico

Enclosed are the original and eight copies of a joint examination report on the subject docket.

Molybdenum Corporation of America proposed to explore for "high grade" molybdenum veins in a supposedly favorable granitic intrusive hypothecated to occur in an area about one-half mile west of existing mine workings. We concur with the examiners that such an objective does not constitute exploration.

However, when coupled with exploration for several million ton bodies of "low grade" molybdenum ore, indications of which have been obtained by continuous sampling of a few drifts, and for which geologic relationships are partly known, progressive exploration of new ground westward from existing workings has considerable merit.

We agree with the examiners that there is a good chance of making significant discoveries of molybdenum at the Questa mine, and recommend approval of the project outlined in the report.

RU King for
E. N. Harshman
Member, Field Team

E N Harshman for
J. F. Shaw
Supervising Mining Engineer

Reviewed by
DMEA OPERATING COMMITTEE
3-27-57
(date)

Enclosures: 9

RUKing:arh

FOR UNITED STATES GOVERNMENT USE ONLY

TRANSMITTED

MAR 20 1957

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

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DMEA 4568

Molybdenum Corporation of America

Moly or Questa mine

Taos County, New Mexico

Molybdenum

Joint Engineering and Geological Report

by

D. H. Richter, Geologist
Geological Survey

D. E. Redmon, Mining Engineer
Bureau of Mines

March 14, 1957

Reviewed by
DMEA OPERATING COMMITTEE
3-27-57
(date)

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DMEA 4568

MOLYBDENUM CORPORATION OF AMERICA
MOLY OR QUESTA MINE
TAOS COUNTY, NEW MEXICO

INTRODUCTION AND SUMMARY

Molybdenum Corporation of America applied for DMEA assistance to explore for molybdenum on 17 unpatented mining claims adjacent to its Moly or Questa mine in Taos County, New Mexico. The application was submitted December 5, 1956, and referred for field examination on December 27, 1956.

The property was examined December 14, 1956, by D. E. Redmon, U. S. Bureau of Mines, and D. H. Richter, U. S. Geological Survey, accompanied by Mr. Al Greslin, resident manager for the applicant.

The Questa molybdenum mine is in the rugged Taos range of the Sangre de Cristo mountains of north central New Mexico. In the vicinity of the mine, Precambrian metamorphic and granitic rocks, and Tertiary volcanics are intruded by small stocks of late Tertiary soda granite. Molybdenite, the ore mineral, occurs as fracture fillings in a relatively thin marginal zone in one of the soda granite stocks. The mineralization is very closely related, both spatially and genetically, to the soda granite.

The applicant's original exploration plan consisted of driving 8,500 feet of drifts and crosscuts to explore an area

west of the present mine workings that could conceivably be favorable for molybdenite deposition. The total cost of the program was estimated to be $471,803.30. Government participation at 50 percent would be $235,901.65.

In a joint memorandum report of December 18, 1956, the examiners expressed their opinion that the objective designated by the applicant was conceived by hopeful hypothesis not supported by factual geologic data.

The presence of a significant low-grade molybdenum deposit in the vicinity of the lower level workings, was recognized however, and it was concluded that exploration for such low-grade ore in the vicinity of present mine workings was warranted.

Over a period of four weeks three lengthy discussions, between examiners and applicant representatives, were held to obtain additional geologic support for their original program and to discuss possible exploration in the potential low-grade area. The principal outcome of these discussions was a revised program submitted by the applicant on February 11, 1957. This revised program, although not entirely compatible with the examiners' alternate recommended program (appendix A) is certainly more feasible than the applicant's original proposal.

The applicant's revised two-stage program consists of 7,360 feet of drifting and crosscutting, and 28,200 feet of diamond

drilling to cost a total of $635,360. Government participation at 50 percent would be $317,680.

It is concluded that exploration north and west of the present heading in the Second Tunnel Shaft level may delineate significant amounts of molybdenum ore and a two-stage program comprising 7,160 feet of drifting and 28,500 feet of diamond drilling is recommended. The estimated total cost of the program is $534,454.42, Government participation 50 percent ~~at~~ or $267,227.21.

ACKNOWLEDGEMENTS

The resident manager of the Moly mine, Mr. A. Greslin, was very cooperative in furnishing available information concerning the property.

PROPERTY, LOCATION, PHYSICAL FEATURES

The property proposed for subordination under the exploration contract consists of 17 unpatented mining claims in secs. 35 and 36, T. 29 N., R. 13 E., and sec. 2, T. 28 N., R. 13 E., N.M.P.M., Taos County, New Mexico (figs. 2 & 5). The location notices are recorded in the County Clerk's Office, Taos, New Mexico, as follows:

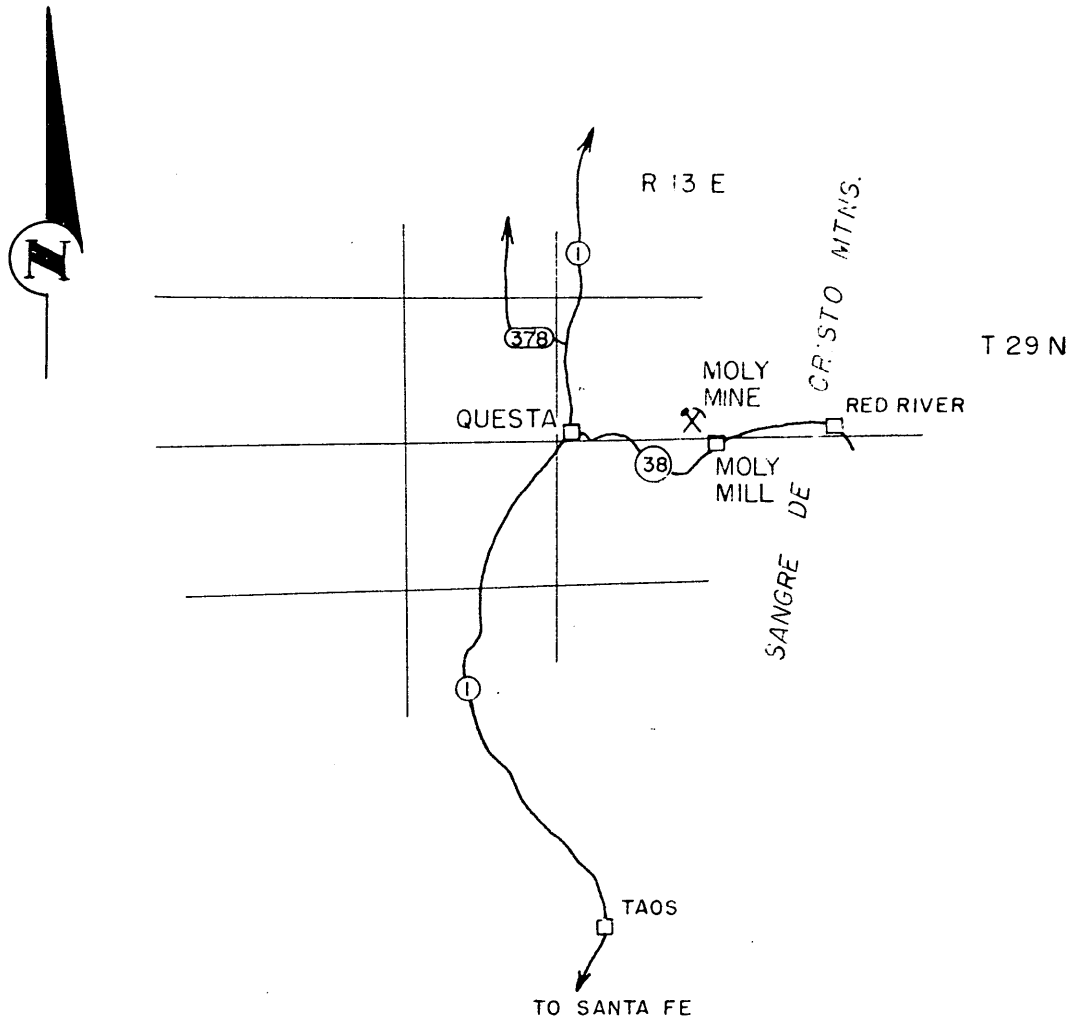

FIGURE 2 - AREA MAP, MOLY OR QUESTA MINE, MOLYBNENUM CORPORATION OF AMERICA, TAOS COUNTY, N. MEX.
DMEA 4568

add Rhyolite 2-3

Name of claim	Section	Township	Range	Book	Page
Rhyolite No. 4	35	29 N.	13 E.	F-28	232
"	36	29 N.	13 E.		
"	2	28 N.	13 E.		
Rhyolite No. 5	35	29 N.	13 E.	F-28	233
	2	28 N.	13 E.		
Rhyolite No. 6	35	29 N.	13 E.	F-28	234
Rhyolite No. 7	35	29 N.	13 E.	F-28	250
Rhyolite No. 8	35	29 N.	13 E.	F-28	251
	2	28 N.	13 E.		
Rhyolite No. 9	35	29 N.	13 E.	F-28	252
	2	28 N.	13 E.		
Rhyolite No. 10	35	29 N.	13 E.	F-28	253
	2	28 N.	13 E.		
Aplite No. 1	2	28 N.	13 E.	5-33	6
Aplite No. 2	2	28 N.	13 E.	5-33	7
Aplite No. 3	2	28 N.	13 E.	5-33	8
Aplite No. 4	2	28 N.	13 E.	5-33	9
Aplite No. 5	2	28 N.	13 E.	5-33	10
Aplite No. 6	2	28 N.	13 E.	5-33	11
Aplite No. 7	2	28 N.	13 E.	5-33	12
Aplite No. 8	2	28 N.	13 E.	5-33	13
Aplite No. 9	2	28 N.	13 E.	5-33	14
Aplite No.10	2	28 N.	13 E.	5-33	15

Sargent No. 6
" " 7.

On the map

The property is reached by traveling east, about 8 miles, from Questa, New Mexico, on State Highway 38, toward the town of Red River. The road passes the Molybdenum Corporation's mill and mine office. Questa is 35 miles from Jaroso, Colorado, a station on the San Luis Valley Southern Railroad (narrow gauge), and 100 miles by road from Santa Fe, New Mexico (fig. 1).

The climate is moderate, but occasional heavy snowfalls during winter months might cause difficulties for an open-pit operation. Heavy rainstorms during summer months often create mudflows that block highways and back-country roads.

The claim area is mountainous with steep slopes; altitudes range from 8,000 to 10,000 feet.

Skilled mine labor is not always available in the villages of Questa or Red River, but the labor supply is usually adequate.

Accommodations for an average mine crew are available in nearby communities.

An REA power line extends past the tunnel portal and up Red River Canyon, but it is not considered adequate as a main power source.

Adequate water is available from the Red River which flows by the tunnel portal.

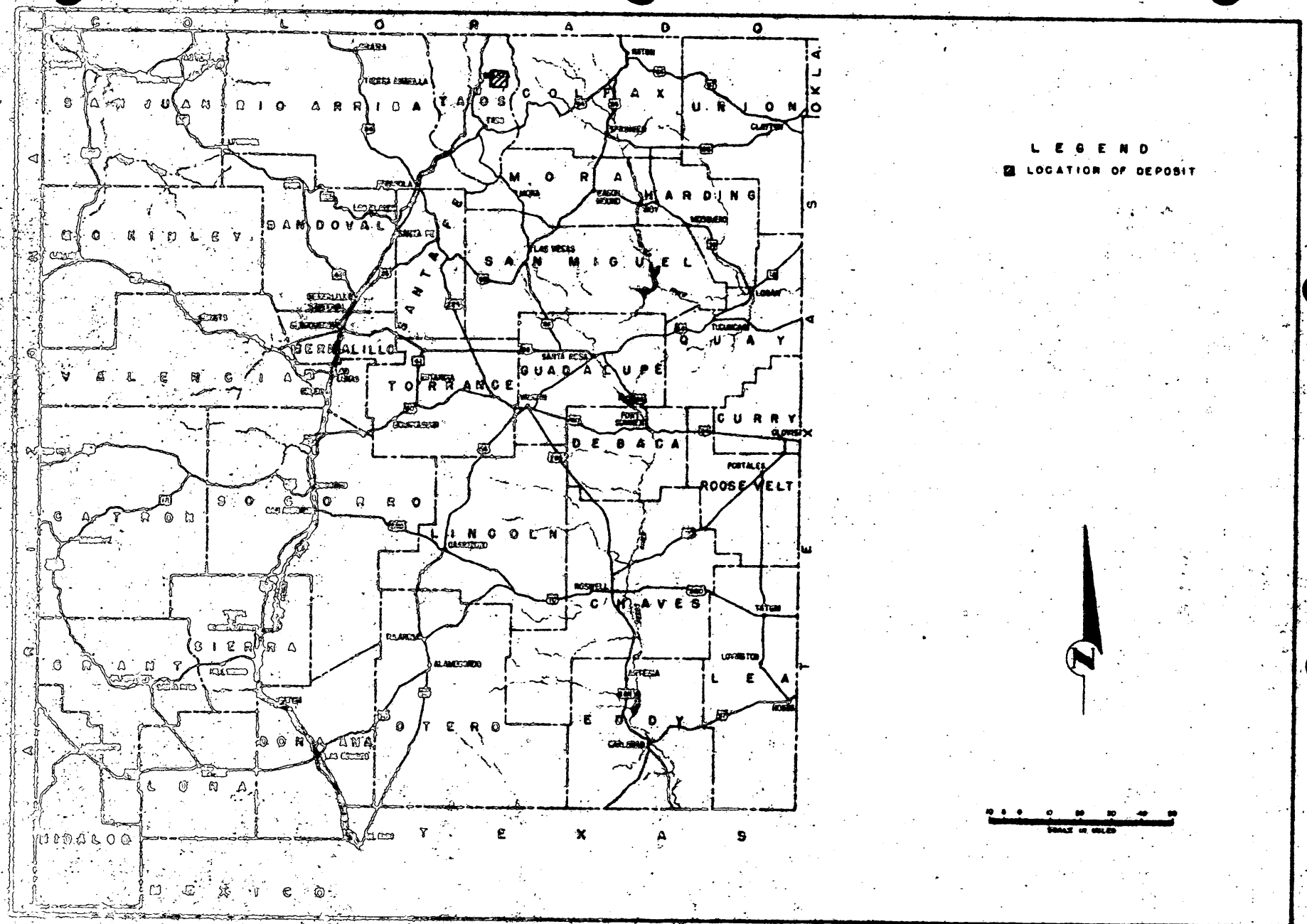

FIGURE 1 - GENERAL AREA MAP, MOLY OR QUESTA MINE, MOLYBNENUM CORPORATION OF AMERICA, TAOS COUNTY, NEW MEXICO.
DMEA 4568

OWNERSHIP, HISTORY AND PRODUCTION

The ground to be explored consists of 17 unpatented mining claims that lie immediately west of, and are contiguous to, property from which the Molybdenum Corporation of America has recovered 18.1 million pounds of molybdenum sulfide during the period 1923-56. Known ore bodies were exhausted by about 1953, but since then, some molybdenite has been produced from old tailings. Exploration is being carried out through a winze from the main tunnel level, known as the Tunnel Shaft. Two levels have been developed from the Tunnel Shaft. They are called the 1st. level and 2nd. level, and extend mainly to the west of the winze. The 2nd., or 200-foot level, has been extended by a relative straight drift to a point about 2,000 feet due west of the Tunnel Shaft. Much of the intervening ground has been explored by other drifts and crosscuts. No diamond drilling has been done and, except for the last few hundred feet of drift, assay records have not been kept or are not available.

PRESENT STATUS

The surface plant consists of a mill having a capacity of 50 tons of mine ore a day. The capacity of the mill is considerably greater when running tailings. Concentrates contain an average of 85 percent MoS_2.

The office building, assay laboratory, cookhouse, bunkhouse, school, and houses for employees are currently in use but are in general, unpainted, and weatherbeaten, and in poor condition.

The mine plant is currently in use and is adequate for the suggested exploration program.

Operating equipment consists of:

1-Sirroco fan (American Blower Corp.) 5 hp. electric motor
1-Motor pump, I.R. No. MRV 1-1/2, 125 g.p.m. 20 hp. motor
1-Motor pump, I.R. No. HVH 15, 125 g.p.m. 15 hp. motor
26-Ore cars, Card Z-18
10-Ore cars, Card Z-20

1-Double drum hoist, Stearns-Rogers, 30 hp. electric motor and starting equipment
10-Side dump 3-ton ore cars (Tunnel)
1-Battery locomotive, 3-ton, General Electric
1-Steel cutter, size 500, I-R
1-Cameron air pump No. 3, 6 x 3 x 7 VPS

1-Drill sharpener No. 54, I-R
1-Shank and bit punch, No. 45 SP, I-R
1-Oil furnace, No. 7F, I-R
1-Multivane grinder, size 4V4, I-R
2-D-17000 Caterpillar engines, 160 hp.

2-Generators, General Electric, Model 5G S91, 80 kw.
1-Switchboard panel for generator
1-Air compressor, diesel powered, Comp. 17 x 19, 16-1/2 x 13-1/4 x 19, 93.5 hp., POC 2 80 C
1-Air compressor, 2-stage I-R Model 90 type 40, 100 HP Westinghouse motor, starting equipment
1-Fairbanks-Morse engine, 6 hp., 450 r.p.m.

1-Air compressor, Fairbanks-Morse, 3-3/4 x 3-3/8 LP, 475 r.p.m., 250 lbs.
1-Steam pump, Marsh 4 x 6 x 6
1-Western Electric motor, type FT 954, 12-1/2 hp., 1800 r.p.m.
1-Western Electric d.c. Generator Model 48A861, 175 v., with panel and switches
1-MSA mine lamp charger, 250 v., 2 a., No. 9861

40-MSA model Prop lamps
1-Tungar rectifier, 115-230 v. d.c.
1-Band saw, 2 in. x 15 ft. Sidney Mach Tool Co. with 2 hp. electric motor
1-Cut-off saw, 24" arm susp., with 5 hp. motor
3-Cars, man-trip, Card

2-Rocker-shovels, Eimco model 12B
4-DA-30 Drifters, I-R

GEOLOGY

General statement

The Questa molybdenum mine is in the Taos Range of the Sangre de Cristo Mountains in north central New Mexico. The range is composed chiefly of Precambrian metamorphic (amphibolites, schists, and quartzites) and intrusive granitic rocks overlain by Tertiary volcanics. Late Paleozoic sedimentary rocks are scattered throughout the area, especially along the eastern edge of the range. The Tertiary volcanics, which in certain zones are highly altered hiding any primary textures or structures consist of andesites, latites, rhyolites, breccias, and tuffs. Late Tertiary soda-granite rocks intrude all the older rocks.

The dominant structural features in the Taos Range are high-angle normal faults and thrust faults. Folding is evident in the Precambrian rocks, but is relatively unimportant in the younger rocks. The Questa molybdenum mine is in a long east-west down-faulted zone that trends across the main Taos Range. This down-faulted zone has apparently localized or controlled the emplacement of three soda-granite stocks and two "hydrothermal pipes" (?) that are present between Questa on the western side of the range and Red River in the middle of the range.

Molybdenum is the only economically important metal in the area, and the Questa molybdenum mine has been the only producer. Molybdenite, the principal ore-bearing mineral in the deposit, occurs as fracture fillings in a relatively thin marginal zone in the middle soda-granite intrusive. The mineralization is very closely related, both spatially and genetically, to the soda granite.

Questa Molybdenum mine

The accompanying geologic map of the Questa mine area (fig. 3) has been taken largely from the work of Carpenter 1/ and, with the exception of one controversial rock type which will be discussed

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1/ Carpenter, R. H., Consulting geologist, Molybdenum Corp. of America.

later, is in agreement with the general geologic picture of other authorities 2/ 3/.

The soda-granite intrusive, host rock for the molybdenite veins, is well exposed throughout the Questa mine workings and at the surface northeast of the mine. This stock-like body probably represents one of the uppermost appendages of a large granitic mass that underlies the Taos Range. The granite can be divided into the following phases on the basis of textural, mineralogical, and structural differences: (1) "normal" inequigranular or porphyritic, (2) pegmatitic, and (3) aplitic. The finer-grained "normal" and porphyritic varieties are probably restricted to the outermost shell of the stock, whereas the coarser inequigranular varieties are typical of depth. Pegmatites and aplites are common along the contact zone and show sharp contacts with each other and with "normal" granite. The "normal" and porphyritic phases, which are intergradational and mineralogically similar, probably constitute 99 percent of the granite and contain approximately 35 percent albite, 30 percent orthoclase, 30 percent quartz, 5 percent biotite, and very minor amounts of apatite, magnetite, sphene, and zircon.

2/ Vanderwilt, J. W., Geology of the "Questa" Molybdenite Deposit, Taos County, New Mexico: Colo. Sci. Soc. Proc., vol. 13, no. 11, 1938.

3/ Schilling, J. H., Geology of the Questa Molybdenum (Moly) mine area, Taos County, New Mexico: N. Mex. Bur. Mines Bull. 51, 1956.

The Tertiary volcanics and Precambrian metamorphic rocks surrounding the soda granite have been intensely propylitized. This zone of alteration, called "greenrock" by the miners, decreases rapidly away from the granite and is characterized by the development of chlorite, epidote, quartz, carbonate, sericite, and pyrite. The propylitic alteration probably is due to contact metamorphism by the granite, which supplied the necessary water, sulfur, carbon dioxide, and silica.

The ore deposits of the Questa mine occur in narrow veins along the western edge of the southerly plunging soda granite stock. In the upper workings the veins are developed where the north-trending contact locally strikes east and dips to the south. This jog in the contact is more pronounced in the lower levels where the granite forms a ridge plunging to the south-west. The veins are restricted to the upper fringe of the granite and to a narrow transition zone between the granite and altered volcanic country rock. In general, three types of veins have been recognized: (1) veins that roughly parallel the contact, (2) veins that dip steeply away from the contact, and (3) irregular stockwork veins in highly shattered rock. All the larger vein structures, whether of type 1 or 2, are discontinuous, usually pinch out within a few hundred feet along the strike, and seldom extend through more than one level interval along the dip. Veins which transect the granite-greenrock contact do not

usually extend more than a few feet into the relatively incompetent greenrock, and similarly, few extend more than a hundred feet down into the granite. Type 3 veins are common in the western extremity of the granite stock along the Second Tunnel Shaft level. This zone, also referred to as the low-grade area, is a highly shattered portion of the granite which is at least 500 feet long and of undetermined height and width. Exploration of this area was recommended by the writers during the initial discussions with the applicant.

The veins consist largely of quartz and molybdenite, with varying amounts of pyrite, fluorite, rhodochrosite, biotite, chalcopyrite, and calcite. The veins in the older workings ranged from less than 1 foot to over 7 feet in thickness, and mine-run ore has contained as much as 20 percent MoS_2. However during the last few years that the mine was operated the ore averaged between 4 and 6 percent MoS_2. The veins visible in the workings at the present time rarely exceed a few inches in thickness, and, in general, the veins in the low-grade stockwork zones range from minute molybdenite-filled fractures to veinlets as much as one-half inch thick. The low-grade material on the Second Tunnel Shaft level has an average content of approximately 0.50 percent MoS_2 along 700 feet of drift and crosscuts.

The minerals of the veins were deposited primarily as fissure fillings. There is very little evidence, other than a slight silicification of the wall rock, suggestive of replacement. The principal

requisite for vein development was the formation, or presence, of open spaces. Evidence gathered throughout the mine indicates that intense stresses originated around the granite stock soon after solidification of the outermost shell, but while the core remained essentially fluid. These stresses were relieved, in part, by faulting along the contact, sheeting within the granite, and intense shattering and fracturing in the outermost granite shell. In some of these areas, where the rocks moved or fractured to relieve the stress, open spaces were formed. In the high-grade area of the mine the ore shoots at vein intersections, and along veins where the dip or strike changes abruptly, are manifestations of open-space control. In the low-grade area of the mine, where intense shattering has affected a large volume of rock, no large openings have been formed, but the area as a whole has probably acted as a large dilatant or low pressure zone allowing the ingress of mineralizing solutions.

The close spatial and time relation between the molybdenite veins and the soda-granite stock also strongly suggests that the ore-forming solutions and granite came from a common source. The actual course that the mineralized solutions took, however, is debatable. Schilling postulates that the ore solutions were enriched in the still-fluid core of the granite stock while the shell crystallized, and that deep fractures tapped this core allowing

and abetting the exit of the ore solutions into the highly fractured shell.

APPLICANT'S ORIGINAL PROPOSAL AND COST ESTIMATE

The applicant proposed an extensive program, consisting of drifting and crosscutting, to explore for a molybdenite deposit in a hypothetically favorable area, located from 1,000 to 2,000 feet from the old mine workings.

The proposed work is shown on figure 3. It consists of 8,500 feet of drifts and crosscuts.

The cost estimates submitted by the applicant and reportedly based on past and current costs were presented in considerable detail. They are rather difficult to reduce to a unit basis and they include several items of overhead, such as: office and superintendence, watchmen, and janitors. They also take into account annual wage increases as provided for in existing wage contracts, and the changes in the distribution of overhead that depend upon whether the mill is in operation or idle.

For purposes of this report, the applicant's cost-estimate schedules are condensed, and listed in major categories as follows:

Wage schedule, labor, supervision and consultants - (2 years)

Consultants	Rate/hr.	Salaries (annual)	Fees
Geologist			$100.00/day ?
Surveyor			60.00/day
Legal			300.00
Office and Superintendence			
Superintendent		$9,676.80	
Accountant		6,339.24	
Assayer	$1.70		
Watchmen-janitors	1.40		
Cook	1.25		
Mine foreman		6,144.00	
Mine boss (night)	2.00		
Shopmen	1.62		
Hoistmen, timber-men	1.595		
Moterman	1.56		
Helpers, trammers, laborers	1.40		

Miners - Contract labor, per foot.

Drift or crosscut rates: Based on two men to a heading, the men pay for explosives they use.

First 70 feet in a month	$7.65/foot
70 to 80 feet "	8.15
81 to 90	8.65
91 to 100	9.15
101 to 110	10.15
111 ft and up	10.65
Timbering, per set	5.00
Switches, each	12.00
Slabbing, per linear foot	3.00

Following are the applicant's estimated costs of its proposed 8,500 feet of exploration work.

Schedule I

Costs with mill operating applicable to 10-1-57

Mine Share	Account	Material and other expense-not labor 1st Shift	Material and other expense-not labor 2nd Shift	Labor-incl. super. office & mine foreman 1st Shift	Labor-incl. super. office & mine foreman 2nd Shift
	General overhead				
75	Pre-employment exam.	$ 145.00			
75	Extra compenstion exp.	50.00			
100	Geol. and Prof. Service	500.00			
100	Legal	300.00			
100	Mine Surv. & Materials	510.00			
		$1,505.00			

Mine Share	Account	Material and other expense-not labor 1st Shift	Material and other expense-not labor 2nd Shift	Labor-incl. super. office & mine foreman 1st Shift	Labor-incl. super. office & mine foreman 2nd Shift
	General Overhead				
	Office & Superintendence				
50	(General)	$1,953.00		$16,204.55	$5,008.00
50	Watchmen, Janitors			5,484.86	
50	Analytical Work	250.00		1,110.00	
		$2,203.00		$22,799.41	$5,008.00
	Mine Lamps & Lighting	$ 410.00	$ 370.00		
	Mine B'ld'ng, Dumps	$ 537.00	$ 95.00		
	Compressed Air	$2,562.00	$2,324.00	$4,056.48	$4,056.48
	Generating Plant	$2,694.16	$2,425.00		
	Blacksmith	$ 640.00	$ 574.00	$4,056.48	
	Tunnel Haulage	$ 879.00	$ 791.00	$7,411.84	
	Hoisting	$ 150.00	$ 135.00	$4,074.23	$4,074.23
	Pumping	$ 37.00	$ 33.00		
	Timbering (upkeep)	$4,199.00	$1,993.00	$7,499.48	
Direct Exploration (Based on 2,024 feet of work)					
	Contract drifting	$15,154.42	$13,635.83	$22,039.26	$17,000.00
	Tramming	$ 160.00	$ 160.00	$17,528.00	$14,022.40
	Totals	$31,130.58	$22,535.83	$89,465.18	$44,161.11

Summary

Labor -	1st Shift	$89,465.18	
Labor -	2nd Shift	44,161.11	
Materials -	1st Shift	31,130.58 (incl. $1,505 o'head)	
	2nd Shift	22,535.83	
Add 5 percent for materials		2,608.07	
Labor insurance		13,634.30	
Schedule I Total			$203,535.07

Schedule 2

Includes full charge for General Overhead and Office and Superintendence.

Item		Schedule I	Schedule 2	Increase
Materials -	1st shift	$ 31,130.58	$ 33,303.58	$ 2,173.00
	2nd shift	22,535.83	22,535.83	--
Labor -	1st shift	89,465.18	106,049.53	16,584.35
	2nd shift	44,161.11	44,161.11	--
Totals		$187,292.70	$206,050.05	$ 18,757.35

Grand Total - Schedule 2

Total Materials	$ 55,839.41 (incl. $1,505 o'head)
Add 5 percent increase	2,716.72
Total Labor	150,210.64
Insurance	14,614.99
Schedule 2, Total	$223,381.76

Schedule 3

Increases in Labor Costs over Schedules 1 & 2, 5 cents an hour, beginning 10-1-57. Piece work in same proportions.

10-1-57 to 10-1-58	Men employed	Per man	12 mo. total
Mill Operating	30.5	$125.20	$3,818.60
Mill not operating	34.0	125.20	4,256.80
10-1-58 to 10-1-59			
Mill Operating	30.5	$250.40	$7,637.20
Mill not Operating	24.0	250.40	8,513.60

Miscellaneous Costs

Track-12-lb. rail, bars, ties, etc.	$ 1.075 per foot
Timber - 1 set (6 feet) (average 45 percent of drifts timbered)	$10.59
Powder	5.519 pound/foot
Fuse	24.38 feet/foot
Caps	3.94 caps/foot

Summary of Costs

Mill Operating

Period	Footage	Cost per foot	Total Cost
3-1-57 to 10-1-57	2,492	$47.63	$118,693.96
10-1-57 to 10-1-58	4,273	49.19	210,188.87
10-1-58 to 3-1-59	1,735	50.18	87,062.30
Equipment rental	____	____	14,400.00

Period	Footage	Cost per foot	Total Cost
Total and Average	8,500	$50.63	$430,345.13

Mill Not Operating

Period	Footage	Cost per foot	Total Cost
3-1-57 to 10-1-57	2,492	$52.28	$130,281.76
10-1-57 to 10-1-58	4,273	54.13	231,297.49
10-1-58 to 3-1-59	1,735	55.23	95,824.05
Equipment rental	____	____	14,400.00
Total and Average	8,500 ft.	$55.51	$471,803.30

Equipment Rental

The operating equipment, as listed, was offered by the applicant for $600 a month rental or $14,400 for the estimated 24 months, it would be used under applicant's proposed program.

36,000

DISCUSSION OF APPLICANT'S ORIGINAL PROPOSAL

Following an examination of the subject property, the examiners, in a memorandum to the Executive Officer, Region III, dated December 18, 1956, briefly discussed the applicant's proposal and concluded that the program was not based on sound geology and was therefore not warranted in its entirety. Briefly, the applicant's proposal consisted of drifting westward along a "possible granite intrusive ridge" to a contact zone with volcanics and porphyry, and then exploring

this zone which "may be fractured" and which "may have acted as a collecting area for the ore-bearing solutions." The last 150 feet of the west drift (an active heading) is in green rock, a fact that does not lend support to the applicant's supposition that a westerly-trending granite ridge reaches the target area (fig. 4). In three lengthy discussions with the applicant's representatives, it has been apparent that they are strongly biased in favor of their proposed exploration program and are confident the granite will be encountered again. Furthermore, in the discussions they also take a firm stand on the potential of the target area (granite-volcanic-porphyry contact) and assert that the shape of the intrusive porphyry on the surface indicates the presence of an ideal trap for mineralizing solutions, if that shape persists downward to the possible granite contact (a minimum of 1,500 feet), and if the physical nature of the rocks are amenable to deposition. They also state that the porphyry is genetically related to the soda granite and may also be a source and/or channelway for ore solutions. In other words, they want to drive to the porphyry contact and can think of many reasons, valid or not, to justify the work. At the time of the examination the examiners had no geologic basis, upon which to judge the hypothetical target. Subsequently, however, the recent work of Schilling 1/, who conducted an extensive 14-month study

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1/ Schilling, J. H., op. cit.

of the mine and its environs, was reviewed by the examiners. Schilling, throughout his entire report, makes no mention of an intrusive porphyry, but shows on his maps (at approximately the same location occupied by the applicant's porphyry) an area of intensely altered volcanics, which he refers to as "hydrothermal pipes." Furthermore Vanderwilt 2/ did not map any intrusive porphyries, but did mention a zone of altered volcanics extending westward from the head of Sulphur Gulch (fig. 3); or in the same general area shown as porphyry by the applicant. In other words, there are essentially, two schools of thought regarding this altered rock mass west of the old mine workings. Granted, it probably is difficult to determine the genesis of these structureless zones, but the point remains that if Schilling and Vanderwilt are correct in their interpretation, the ideal target postulated by the applicant is not there.

Therefore, inasmuch as we are not in the position to say who is right or wrong, we are inclined to be less specific and put broader limits on the target area. As a result of our study of the evidence and information available, we are willing to recommend further exploration to the west provided, of course, that the granite is there. The granite, where the west drift encounters it on the Second Tunnel Shaft level, contains appreciable low-grade mineralization which may be economical if a large enough body can

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2/ Vanderwilt, J. W., op. cit.

be developed. Moreover, this zone of low-grade mineralization is the only tangible evidence that the granite, if present to the west, may carry large bodies of low-grade molybdenite ore. In summarizing then, it appears that the only present, justifiable formation to be prospected is the granite directly underneath the granite-greenrock contact. Exploration in this zone on the Second Tunnel Shaft level would give some indication of the size and grade of the low-grade mineralization already observed, and would determine the continuity, if any, of granite and/or mineralization to the west. With these objectives in mind the examiners held several conferences with the applicant's representatives in an attempt to formulate a mutually satisfactory exploration program.

During the first post-examination meeting with the applicant's representatives held January 11, 1957, a tentative modification of their proposal, which would stage the work and first determine if the granite actually extends to the west, was discussed. Drilling from the surface or from the face of the present drift was suggested as a means to explore for the granite, which, if found, would justify further work. Mr. Carman appeared to favor the latter suggestion. Exploration of the known low-grade zone was also discussed.

At our second meeting held on January 18, 1957, we presented an alternate program (Appendix A) in detail. It included a drilling

project in the low-grade area, and, although we were almost mutually agreed on the program, Mr. Carman was still adamant in his belief that the granite would continue to the west and therefore the initial drilling was unnecessary. We stressed the point that the drilling was only to insure the presence of a target, and that if granite were encountered west of the present heading, exploration would continue almost as proposed in the application. However, if the drilling failed to find granite, which it was agreed is necessary for the occurrence of ore, the consequence would be to abandon exploration in that area and concentrate on continuing work in the low-grade mineralized zone. Mr. Carman stated he could see our point and informed us he would think it over. It was decided that a third meeting would be held, to which Dr. Vanderwilt would be invited, in hopes of clarifying the "porphyry problem" and thereby give more credence to the applicant's purported target.

The third meeting held on January 23, 1957, was a fiasco. The "porphyry problem" was not resolved and Mr. Carman flatly rejected our alternate program (Appendix A) informing us that he was pessimistic about the low-grade area and did not wish to explore it further. Yet he still contends that they are exploring primarily for a large low-grade deposit, since the nature of the high-grade veins has made them uneconomical to mine! Since no

mutual agreement could be reached it was decided that the applicant would submit a revised proposal including in that proposal some diamond drilling in lieu of drifting.

APPLICANT'S REVISED PROPOSAL

The applicant's revised exploration proposal was received February 11, 1957.

Stage I of the proposal consists of (1) 1,200 feet of drifting and crosscutting (Project Area B) to both explore the granite and to bring the present heading within reasonable drilling distance of the granite-porphyry (?) contact, and (2) 8,700 feet of diamond drilling in both the low-grade area (Project Area A) and from the face of the workings in Project Area B. The 1,200 feet of drifting and crosscutting is to be done regardless of the rock type at the start of the contract or encountered during the Stage I period.

Stage I submitted costs are as follows:

Drifting, 1,200 feet at $54 a foot	$ 64,800.00
Drilling, 8,700 feet at $8 a foot	69,600.00
Total	$134,400.00

The drilling rate includes station preparation, core, logging, sampling, assaying, air for drills, and the contractors estimated bid.

Stage II of the applicant's revised proposal was comparable to the original, but included considerable diamond drilling in

addition to drifting and crosscutting. Stage II is to explore any favorable areas disclosed in Stage I.

Stage II submitted costs are as follows:

Drifting, 6,160 feet at $56 a foot	$344,960.00
Drilling, 19,500 feet at $8 a foot	156,000.00
Total	$500,960.00
Total cost Stage I and II	$635,360.00

EXAMINERS' RECOMMENDED PROGRAM

Work units and objectives

The examiners accept the applicant's revised proposal with two minor modifications, that are subsequently discussed. The acceptance however, does not imply complete agreement with the proposal; but the examiners believe that the project has considerable merit and that further attempts to substitute diamond drilling for a portion of the Stage I drifting, proposed by the applicant, would be futile.

The recommended program is shown on figure 4 and consists of the following work units:

Stage I

(1) 1,000 feet of drifting and crosscutting in Project Area B to explore the granite and/or to bring the present workings within reasonable drilling distance of favorable targets. The 200 feet

of drifting proposed by the applicant in Crosscut No. 1 north from coordinate N 400 is not recommended. Two drill holes from the same coordinate will provide adequate information and are recommended in the drilling program below.

(2) 9,000 feet of diamond drilling divided among 16 holes in Project Area A for a subtotal of 8,000 feet and 2 holes in Project Area B for a subtotal of 1,000 feet. The 16 holes in Project Area A, with a maximum length of 500 feet, are intended to fully explore the low-grade area disclosed on the Second Tunnel Shaft level. One drill hole (coordinates N 200, E 1230) proposed by the applicant is not recommended as it duplicates d.d.h. no. 8, and two additional drill holes (nos. 15 and 16) are recommended.

In Project Area B the two drill holes, with a maximum length of 500, are intended to explore for granite and/or other possibly favorable rocks from the headings of the drifts and crosscuts completed under Item 1, Stage I. If these workings are in mineralized granite at the termination of the drifting these holes would be unnecessary.

Stage II

(1) 6,160 feet of drifting and crosscutting in Project Area B to explore areas deemed favorable from Stage I work.

(2) 19,500 feet of diamond drilling in Project Area B to fully explore favorable areas disclosed in Stage I and in Item 1, Stage II.

The following miscellaneous but important items are included for contract preparation:

(1) Rhyolite No. 2, Rhyolite No. 3, Sargent No. 6, and Sargent No. 7 claims should be subordinated under the contract in addition to claims listed in the application. (fig. 5)

(2) The locations, bearings, and inclinations of the 16 diamond drill holes in Stage I, Project Area A, are shown in figure 4. The holes will have a maximum length of 500 feet, but should not penetrate more than 20 feet into visually barren rock. The two holes in Project Area B will have a maximum length of 500 feet.

(3) In mineralized areas the drifts should be sampled by cutting a continuous horizontal channel along its wall, approximately 3 inches wide and 1 inch deep. Cuttings from 5-foot sections should be analyzed for MoS_2. In case it is impractical to cut a continuous channel along the same wall, the other wall may be sampled opposite the interval where the continuous channel was interrupted.

Mineralized sections of the diamond-drill core should be split and analyzed in 10-foot sections.

(4) Stage II exploration may be concurrent with Stage I drilling in Project Area A, but in no event may Stage II exploration be undertaken without prior Government approval.

(5) To enable the operator to work two headings, immediately upon starting work under the contract it may be preferable to shift the proposed Crosscut No. 2 north from coordinate E 440 to approximate coordinate E 640.

Cost estimates

The costs submitted by the applicant are, in part, probably based on actual experience but include some charges for overhead and miscellaneous items that are not related to exploration work. Other charges were considered to be exorbitant and are revised in the examiners' estimate of costs.

The examiners attempted to break down the applicant's submitted costs to units that would be more amenable to contract application. The estimated recommended costs are as follows:

Resume of costs

Stage I

Diamond drilling (concurrent with drifting)

AX size, 9,000 feet at $5.48 per foot	$ 49,320.00
Drill stations-115 feet of drifts and/or raises in 8 locations (as needed) at $44.43 per foot	5,109.45

Analyses, 9,000 feet, 10-foot interval 900 samples at $3 each	$ 2,700.00		
Total drilling Stage I		$ 57,129.45	
* Cost per foot			$ 6.35

* If drilling is not concurrent with drifting, total costs will average $9.16 per foot. (Drilling only at $4.00 per foot)

Drifting

4.27 months

1,000 feet at $44.43 per foot	$ 44,430.00		
Timber allowance (as needed) 1,000 feet at $2.70 per foot	2,700.00		
Analyses, 1,000 feet, 5-foot interval, 200 samples at $3 each	600.00		
		$ 47,730.00	
Total Stage I allowance			$104,859.45

Stage II

Drifting

26.3 months

6,160 feet at $44.43 per foot	$273,688.80		
Timber allowance (as needed) 6,160 feet at $2.70 per foot	16,632.00		
Analyses, 5-foot interval 1,232 samples at $3 each	3,696.00		
Total Stage II drifting		$294,016.80	
(With 4 percent increased costs			$305,777.47)

Diamond drilling (concurrent with drifting)

19,500 feet at $5.48 per foot	$106,860.00		
Drill stations, 250 feet of drifts and/or raises at $44.43 per foot	11,107.50		
Analyses, 19,500 feet, 10-foot interval, 1,950 samples at $3 each	5,850.00		
Total Stage II drilling		$123,817.50	
Total Stage II allowance (drifting plus drilling):			$417,834.30
Total Stage II if drifting cost increased 4 percent			$429,594.97
Stage I allowance		$104,859.45	
Stage II allowance		429,594.97	
Total project cost			$534,454.42
Government participation at 50 percent			$267,227.21

Itemized costs

Drifts and crosscuts, 4-1/2 feet advance per shift, six day week, 234 feet advance per month.

	per month
Independent contracts	
none	
Labor, supervision, consultants	
Engineer-geologist at $600 per mo. (1/3)	$ 200.00

		per month
Supervision, $600 per month (2/3)	$ 400.00	
Shop and repairmen, 1 each shift at $1.62 per hr.	730.08	
Motormen, 1 each shift, $1.56 per hour	703.04	
Hoistmen, 1 each shift, $1.60 per hour	721.06	
Timberman and helper, 1 shift (Maintenance)	676.00	
Mine labor & trammer, 1 ea. shift at $1.40/hr.	630.94	
Contract mining ($10.65-$2.46 powder) $8.19/ft.	1,916.46	
* Blacksmith, 1 shift at $1.62 per hour	365.04	
		$ 6,342.62

Operating materials and supplies

Fuel (general heating)	$ 50.00
Compressed air - fuel and lubricants	392.00
Generating plant fuel and lubricants	330.00
Other lubricants	35.00
Tunnel haulage Locomotive batteries (2 yr. life)	45.00
Blacksmithing	
sharpener	50.00
tools	5.00
fuel	5.00

		per month
Track at 1.10 per foot	257.40	
Pipe - air, water & fittings at $0.963 per foot	225.34	
Explosives, caps, fuse, dynamite, $2.46 per foot	575.64	
Vent tube - $1.28 per foot	299.52	
Hose and small tools	20.00	
Drill steel and bits at $0.25 per foot	58.50	
		$ 2,348.40

Operating equipment

By schedule posted previously, full use of all equipment	$ 600.00

Rehabilitation and repairs

not applicable

New buildings, improvements and installations

not applicable

Miscellaneous

Compressed air repairs	$ 14.20
Gen. plant repairs	39.60
Tunnel haulage car and locomotive repairs	38.30
Hoisting repairs and upkeep	23.80
Pumps repairs and upkeep	6.00

	per month
Rock drills repairs	$ 100.00
Mucking machines repairs	50.00
Accounting and supplies	200.00
Payroll taxes & insurance 10 percent of labor costs	634.26
	$ 1,106.16

Total per month (less Analyses and timbering but including maintenance of drift)	$10,397.18
Cost per foot	$ 44.43

	per foot
Analyses - 5-foot interval at $3 each	$ .60
Timber - $10.60 per set (6 feet) $5 setting charge - $15.60 per set	$ 2.60
Total maximum cost per foot of drift	$47.63

* The blacksmith is considered to be an assistant to the shopman and for drill-steel fabrication and sharpening. For this reason the allowance for drill steel and bits is relatively low. Coromont integral steel can be purchased for an estimated $0.85 per foot of drift advance and would require a small amount of time for bit sharpening. Its use would eliminate the need for a blacksmith, but would leave only one man for machine and equipment repair and maintenance.

Diamond drilling costs
(If drilling and drifting is concurrent)

20 feet a shift, 2 shifts, 960 feet a month based on 48 shifts actual drilling

		per month
Independent contracts		
Diamond drilling-AX size, (average $4 per foot-Applicant's verbal estimate)		$ 3,840.00
Labor		
Engineer-geologist $600 per month (2/3)	$ 400.00	
Supervision at $600 per month (1/3)	200.00	
Track and pipe men - 1 shift	676.00	
Miscellaneous		
Core boxes, 10-foot capacity 96 boxes at $1 each	96.00	
Bookkeeping	50.00	
		$ 5,262.00
Cost per foot (less analysis)	$ 5.48	
Analyses - 10-foot interval, 96 samples at $3 each	.30	
Total cost per foot, diamond drilling (Subject to change by contract bid)		$ 5.78

Diamond drilling costs
(If no drifting, 960 feet per month)

		per month
Independent contracts		
Diamond drilling, AX size (average $4 per foot, Applicant's verbal estimate, subject to change by contract bid.)		$ 3,840.00
Labor		
Engineer-geologist $600 per month	$ 600.00	
Shopman - $1.62 an hour, 1 each shift	730.08	
Hoistman-motorman, 1 each shift	721.06	
Track, timber, and pipe men, (2) 1 shift	676.00	
		$ 2,727.14
Operating materials and supplies		
Fuel general heating etc.	$ 50.00	
Compressed air Fuel and lubricants	300.00	
Generating plant fuel and lubricants	300.00	
Pipe tools and equipment	25.00	
Core boxes, 10-foot capacity $1 per box	96.00	
		$ 771.00

			per month
Operating equipment			
(No rental price suggested by the applicant, estimated at $200 per month)			
Compressor			
Generating plant			
Hoisting equipment			
Man trip equipment			$ 200.00
Contingencies			
Transportation of equipment and supplies		$ 50.00	
Bookkeeping		100.00	
Payroll taxes and insurance (10 percent)		272.71	
			$ 422.71
Total for diamond drilling (less analyses)			$ 7,960.85
Cost per foot (less analyses, less station preparation)		$ 8.29	
Analyses - 10-ft interval, at $3 each		.30	
Cost per foot, diamond drilling, no concurrent drifting, including analyses. (Subject to change by contract bid)			$ 8.59
Station preparation, based on 9,000 ft of Stage I			.57 per foot
Cost of diamond drilling, per foot			$ 9.16

Labor and supplies are expected to increase before Stage II work would be started; therefore a 4 percent increase in drifting costs is considered justified in Stage II.

Diamond drilling not concurrent with drifting should be allowed an increased rate of about $5.16 a foot for contingencies over and above the contracted diamond drilling rate. The drilling rate is subject to adjustment if contract drilling is not $4 a foot.

CONCLUSIONS AND RECOMMENDATIONS

It is concluded that there is a good possibility of discovering significant deposits of molybdenum ore through the exploration program recommended in this report. Although the recommended program, which is a compromise between the applicant's original proposal and the examiners alternate recommended program, still contains items that may not be fully justified, we believe that exploration is warranted and therefore request that Government assistance be granted.

APPENDIX A

Examiners' alternate recommended program

The following alternate exploration program, complete with estimated costs, was devised by the examiners after the first consultations with the applicant. It was thought that this program would provide information concerning the existence of a large low-grade ore body and might justify the drifting desired by the applicant, without giving a blanket committment for extensive and costly drifting toward an objective that might or might not exist.

This plan was rejected by the applicant and is presented here merely as background material.

Project Area A (Coordinates E 1000 to E 2000) (fig. 4)

No drill hole will exceed 500 feet in length, or penetrate more than 20 feet into visually barren greenrock or granite.

Drill stations will be paid for on footage basis. Allowance for each drill station will be made after scheduled drilling from the station is completed.

13 diamond-drill holes - AX size- Aggregate: 4,000 feet at $8.59 per (max.) foot	$ 34,360.00
6 diamond-drill stations requiring 115 feet of drift or raise at $44.43/ft (needed for 14 feet of tail room in angle drilling)	5,109.45

Analyses: split core samples - 10-foot intervals - 400 samples at $3 each	$ 1,200.00	
Total for Project Area A		$ 40,669.45

Project Area B (Coordinates E 1000 to W 400)

Stage I: To be initiated only if face of west drift is in greenrock when contract becomes effective. Stage I will consist of a maximum of three diamond drill holes, size AX, maximum depth 500 feet, total maximum drilling 1,500 feet.

Hole No. 1: To be drilled from face of west drift on course of drift, horizontally, to maximum depth of 500 feet but not to exceed 100 feet into granite.

Hole No. 2: To be drilled from face of west drift, only if Hole No. 1 fails to encounter granite. Hole No. 2 will be drilled due north, horizon tally to maximum depth of 500 feet but not to exceed 100 feet into granite.

Hole No. 3: To be drilled from face of west drift only if Holes Nos. 1 and 2 fail to encounter granite. Hole No. 3 is to be drilled at minus 90° to a maximum depth of 500 feet, but not to exceed 100 feet into granite.

Estimated cost Stage I

3 diamond-drill holes, size Ax, maximum total depth 1,500 feet at $8.59 a foot	$ 12,885.00	
Analyses: split core at 10-foot intervals, 150 samples at $3 each	450.00	
Cutting station (drift and raise) at $44.43 a foot	440.30	
Total for Stage I Area B		$ 13,779.30

Stage II: To be initiated only if Hole No. 1 or Hole No. 2 encounters granite, or if the west face is in granite when the contract becomes effective.

Stage II, Case 1: If the face of the west drift is in granite at beginning of contract, or Hole No. 1 (Stage I) has encountered granite the west drift will be continued on course to coordinate line W 300, or until it has penetrated greenrock for 100 feet, whichever is first.

Estimated cost (Stage II, Case 1)

1,100 feet of drift at $44.43 a foot (untimbered) or $47.63 a foot (timbered)	$ 52,393.00	
Analyses: Sample interval, 5 feet, 220 samples at $3 each	660.00	
Total Stage II, Case 1		$ 53,053.00

Stage II, Case 2: If Hole No. 2 intersects granite, a drift will be extended along drill Hole No. 2, and into the granite. Based

upon information on the granite - greenstone contact that is obtained from this work, a new heading will be planned, with mutual agreement, and this heading will be continued for 1,100 feet, or the amount not previously used, or until the new heading penetrates 100 feet of greenrock, whichever is the least.

Estimated cost (Stage II, Case 2)

1,100 feet of drifting at $44.43 a foot (untimbered) or $47.63 a foot (timbered)	$ 52,393.00	
Analyses: Sample interval, 5 feet, 220 samples at $3 each	660.00	
Total Stage II, Case 2		$ 53,053.00

Stage II (Case 3) Project Area B

In the event that the west drift, driven in Case 1 or Case 2, penetrates 100 feet of greenrock the west drift will be stopped and a plan of drilling (as suggested below) will be initiated, provided that adequate funds for the drilling program remains in the Stage II allowance.

Hole No. 1: From existing west face, drilled horizontally, on the course of the drift, 500 feet, or 100 feet into granite.

Hole No. 2: From existing west face, drilled horizontally, due north, 500 feet, or 100 feet into granite.

Hole No. 3: From existing west face, drilled at minus 90°, 500 feet or 100 feet into granite.

Estimated cost (Stage II, Case 3)

3 diamond-drill holes, AX size, 1,500 feet at $8.59 per foot	$ 12,885.00	
Analyses: Sample interval, 10 feet, 150 samples at $3 each	450.00	
10 feet of drift on raise at $44.43 a foot	444.30	
Total Stage II, Case 3		$ 13,779.30

Stage III Project Area B

Locations and lengths of crosscuts and diamond-drill holes contingent on results of Stage II drifting and/or drilling, and subject to approval of the Government.

Estimated costs (Stage III)

Crosscutting 1,600 ft. at $44.43 (untimbered) or $47.63 (timbered)	$ 76,208.00	
Diamond drilling, AX core, 5,000 feet at $8.59/ft.	42,950.00	
20 drill stations - 200 feet at $44.43/ft.	8,886.00	
		$ 51,836.00

Analyses

Crosscuts - 5-foot interval, 320 samples at $3 each	$ 960.00		
Diamond drilling, 10-foot interval, 500 samples at $3 ea.	1,500.00		
		$ 2,460.00	
Total Stage III			$130,504.00
Maximum total expenditure			$233,116.45

Region III

Building 20
Denver Federal Center
Denver 2, Colorado

January 4, 1957

Docket

Memorandum

To: W. M. Traver, Executive Officer, DMEA Field Team, Reg. III

From: Superintendent, Denver Experiment Station, Reg. III

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Claim) Taos County, New Mexico

The application for Molybdenum Corporation of America, Docket DMEA 4568, in the amount of $471,803.30 was received in this office on January 4, 1957.

The examiners will discuss an alternate proposal with the applicant and a suitable report will be prepared.

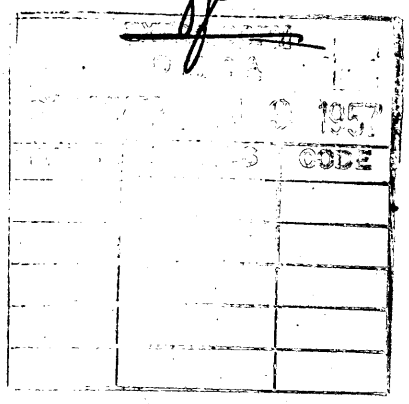
W. H. KING

W. H. King

DMEA
DEPARTMENT OF THE INTERIOR
JAN 4 1957
REGION III
DENVER, COLORADO

cc: W. M. Traver
E. W. Marshman
J. F. Shaw
Sec. Op. Com. (2)

Official



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

OFFICIAL FILE COPY
DMEA
RECEIVED JAN 1957
CODE
1-7-57 700

224 New Customhouse
Denver 2, Colorado

January 3, 1957

Memorandum

To: W. H. King (2) (w/brochure)
E. N. Harshman (w/brochure)

From: DMEA Field Team, Region III

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Claim) Taos County, New Mexico.

Enclosed is the subject application in the amount of $471,803.30. A suitable report is requested. Also enclosed are a copy of a letter from the Chairman of the Operating Committee, dated December 27, 1956, and memoranda of review of the application by N. E. Nelson and Wilmer McInnis.

The Chairman suggests that the examiners discuss any alternate proposal with the Applicant. Mr. J. D. Carman, the Applicant's representative, lives in Empire, Colorado and in a discussion with him they could investigate the possibility of some drilling.

The USGS copy of the brochure should be returned to the Washington Office, DMEA and the Bureau of Mines copy of the brochure should be returned to the Executive Officer, DMEA Field Team, Region III, with the Report of Examination.

DMEA Field Team, Region III

Original signed by
W. M. TRAVER

By W. M. Traver
Executive Officer

Enclosures
BMC:ytl
cc
Sec. Op. Comm. (2)
Docket 4568
Chron.

700

FILE COPY
Surname:

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

DEC 27 1956

Molybdenum Corporation of America
500 Fifth Avenue
New York 18, New York

Re: Docket No. DMEA-4568 (Molybdenum)
Moly, or Questa Mine
Taos County, New Mexico

Gentlemen:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred ~~for a field examination~~ to:

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

C. O. Mittendorf

Administrator

FMMurphy/izm 12-19-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Reg. III (2)

Surname copy

700

Murphy
F Lemmon
Selfridge
Whitaker

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

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

DEC 27 1956

Re: Docket No. DMEA-4568 (Molybdenum)
Molybdenum Corporation of America
Moly, or Questa Mine
Taos County, New Mexico

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation.

Enclosed are copies of memoranda, dated December 12 and 17, 1956, by Wilmer McInnis, USBM, and N. E. Nelson, USGS, respectively, relating to the application. Also enclosed are two copies of the application for Field Team use.

The joint memorandum, forwarded with yours of December 19, was received after the above USBM and USGS comments were written. After reviewing the joint memorandum, the commodity members agreed with the field examiners' conclusions in regard to the original program proposed by the Applicant.

It is suggested that the field examiners' alternate proposal should be discussed with the Applicant during the examination. Judging from available information, the milling facilities, and possibly the main adit, would not be able to handle large tonnages of ore. Therefore, the Applicant may not desire to participate in an exploration project to search for large bodies of ore of lower grade than have been previously mined, because it would require a considerable capital outlay to expand the mine and surface plant to make the 0.5-0.75 percent MoS_2 material commercially exploitable.

P. S. If the Field Team believes recommendations may be given without a field examination, please feel free to give them.

APPROVED:

Frank D. Lamb (GCS)
Member, Bureau of Mines

Thor H. Kiilsgaard (GCS)
Member, Geological Survey

Sincerely yours,

George C. Selfridge (GCS)
Chairman, Operating Committee

FMMurphy/izm/gla (12-19-56) 12-26-56

cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
Operating Committee
Messrs. Wilmer McInnis, Rm. 3515
T. H. Kiilsgaard, Rm. 5224

Enclosures

DEC 2 6 1956 gla

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

224 New Customhouse
Denver 2, Colorado

December 19, 1956

RECEIVED DEC 21 1956 D.M.E.A.

Memorandum

To: Secretary to the Operating Committee

From: DMEA Field Team, Region III

Subject: Docket DMEA 4568 (Molybdenum) Molybdenum Corporation of America (Moly or Questa Mine) Taos County, New Mexico.

Enclosed are the original and three copies of a brief joint memorandum Report of Examination on the subject property, by the field examiners.

It is hoped that this memorandum will reach you, for your further information on the docket, before you release it for a field examination.

DMEA Field Team, Region III

W. M. Traver

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
12-26-56
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DMEA

REGION III

DEPARTMENT OF THE INTERIOR
DEC 19 1956
REGION III
DENVER, COLORADO

Building 20
Denver Federal Center
Denver 2, Colorado
December 18, 1956

RECEIVED
DEC 21 1956
D.M.E.A.

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman
J. F. Shaw

From: D. H. Richter
D. E. Redmon

Subject: Molybdenum Corporation of America, Questa mine, Taos County, New Mexico

On December 14, 1956, during a DMEA field examination trip in northern New Mexico, the Questa mine of the Molybdenum Corporation of America was examined. Although the application had not yet been referred to the field from Washington, it was decided, inasmuch as a copy of the brochure was available and an examining team would be in the vicinity, to examine the property at the present time and avoid any delays that may result from poor weather conditions.

In reviewing the application prior to the examination, it was apparent that the company's exploration program of approximately $450,000 was not based on known geologic data and was therefore not warranted in its entirety. The company's program consisted essentially of drifting westward along a "possible granite intrusive ridge" to a contact zone with volcanics and/or porphyry, and then explore this zone which "may be fractured" and which "may have acted as a collecting area for the ore-bearing solutions." The proposed ore potential of the target area is not enhanced by the presence of the porphyry, which may actually be post-molybdenite mineralization in age. From this, therefore, it appeared that too many suppositions were being relied on to substantiate such a large-scale exploration program.

During the examination, it was observed that the west drift, which the company is driving, has been out of granite for over 100 feet, and although the mine manager is confident that the granite will be encountered again, the mere fact that it is absent leads us to believe that it may not continue to the volcanic rocks as purported in the application. If this is the case, the company's first supposition is not valid and further exploration toward their target is certainly not warranted.

Reviewed by
DMEA OPERATING COMMITTEE

12-26-56
(date)

However, we believe, from the evidence seen during the mine inspection, that a large and significant body of low-grade molybdenite may be present in the western extremity of the granite-mass. At the present time, the west drift has penetrated about 900 feet of granite assaying approximately 0.50 percent MoS_2, a crosscut driven north from near the western extremity of this drift has cut 200 feet of approximately 0.50 percent MoS_2, and a 600-foot drift roughly 100 feet south of the main west drift averages about 0.75 percent MoS_2. The granite in this area is highly shattered and broken. Crystalline molybdenite in thin scaly druses occurs on practically all broken surfaces and in part as disseminations in the granite.

In summary then we feel that this latter low-grade area warrants further exploration, more so than the very hypothetical target to the west, and that the company should reconsider its program in the light of the new data available. Exploration for a large low-grade deposit could be easily and economically carried out, principally by underground drilling from the west drift and other nearby workings.

D. H. Richter

D. H. Richter

D. E. Redmon

D. E. Redmon

cc: 9
ENHarshman
Subject
Chron

12-18-56

IN REPLY REFER TO:

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

RECEIVED DEC 18 1956 D.M.E.A.

December 17, 1956
Re: DMEA 4568
Molybdenum Corporation of America
Questa Mine
Taos County, New Mexico
$471,803.30 - Molybdenum

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of application

The applicant requests assistance in continuing a search for a rock-structure feature like the albitized contact zone in which the productive veins of the Questa Mine are found.

About 20,000,000 pounds of MoS_2 has been produced from many veins concentrated for the most part in a downward tapering triangular zone. The base of the triangle, the outcrop of the ore-bearing zone, measures 1400 feet and the apparent blunt apex is about 2,800 feet down pitch and 800 feet lower. The pitch axis bears S 45° W, and as I read it, the veins have an average strike of N 40° W and steep dips. Map #4 shows some of the lower stopes and low dipping veins are suggested, but the report says they have steep dips, a short vertical range, and in general the strike length is short. The map, #4, shows a stoped out area 300 feet long, but more than one vein may have been stoped.

The productive veins are confined to the triangular altered rock zone developed in the contact of granite and a sedimentary-volcanic rock cover called green rock. The thickness of the contact zone limits the vertical range of the veins as they tend to die out in granite and the less altered cover rocks.

The vein-bearing albitized rock spreads diagonally across the south slope of what is called a granite ridge. Vertical E-W and N-S sections through the old mine area would be useful as no map is available showing the westerly workings of the Questa mine and the manner of cut-off at the westerly side of mine. Perhaps the area high on the slope of the 'ridge', if it continues west of the idealized porphyry plug shown on the isometric projection, would be better prospecting ground than that at the roots of the known orebodies.

The underground work being done and that proposed is low on the flank of the ridge, far below and west of the principal ore zone. As pictured in Section B-B' the work is in a subridge or corrugation low on

the side of the main ridge, perhaps 2,000 feet downslope from the probably rounded crest. The drift-crosscut is headed toward an area within which it is hoped to find ore making conditions characteristic of the Questa Mine zone. For some distance the drift-crosscut has been in sparingly mineralized granite and the finding of an ore structure is regarded as a possibility. Ring, long hole, or diamond drilling appears indicated in order that the position of the drift-crosscut relative to the contact zone and the green cover rock may be known.

The favorably regarded area is about 1400 feet ahead of the present face of the drift-crosscut. There is no surface expression of the hypothetical contact zone or other feature that suggests a center of molybdenite mineralization below, but scattered outcrops showing the mineral have been found in Goat Hill Gulch, the general area toward which the drift-crosscut is headed.

If not available at the mine, the applicant should be requested to prepare numerous mine and adjoining area vertical sections. The bold hypothesis and proposed project, although lacking a too definite target, deserve much consideration, and additional factual data would assist the examiners and reviewers materially.

Referral of the application to the Field Team for appropriate action is recommended.

N. E. Nelson

N. E. Nelson

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

December 12, 1956

Memorandum

To: E. W. Ellis, Chief, Rare and Miscellaneous Metals Division-DMEA

Through: Acting Chief, Branch of Ferrous Metals & Ferroalloys HTR

From: Wilmer McInnis, Commodity Specialist, Branch of Ferrous Metals & Ferroalloys

Subject: Molybdenum Corporation of America
Docket No. DMEA-4568
(Moly or Questa Mine)
Taos County, New Mexico

I have reviewed subject application which proposes to explore the westward adjoining area of the Questa Molybdenum Mine by driving some 8,500 feet of drifts and cross-cuts at an estimated cost of $471,803.30.

This proposed work scheduled to start from the 200 foot level of the mine appears to be largely based on two reports, A Summary of the Geology of the Questa Mine, April 1954, and A Clearification of the Geologic Features West of the Questa Mine, Taos County, New Mexico, August, 1956, prepared by the company's Geologist that theorizes the mineralization and structure of the area is favorable to mineral deposition.

The strategic importance of molybdenum and the limited known commercial deposits makes it highly desirable, in my opinion, to endeavor to increase known reserves wherever feasible. Therefore, in view of the long continuous production of molybdenum from the Questa mine, it appears to me that the area proposed for exploration is favorable to the discovery of additional vein type molybdenum deposits. However, I recommend that the application be referred to the Field Team for review and examination, because no proposals are made to drive raises or winzes, both of which may be desirable in such an exploration project and at least part of the overhead costs such as shown on page 12, of the application appear to be unwarranted.

Wilmer McInnis
Wilmer McInnis

RECEIVED
DEC 19 1956
D.M.E.A.

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

December 10, 1956

Molybdenum Corporation of America
500 5th Avenue
New York, 18, N. Y.

Subject: [illegible]

Gentlemen

Your application for exploration assistance, dated November 5, 1956 submitted to our office at Denver, has been assigned Docket Number [illegible] and referred to the Rare and Miscellaneous Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

(Sgd) Allen S. Dakan

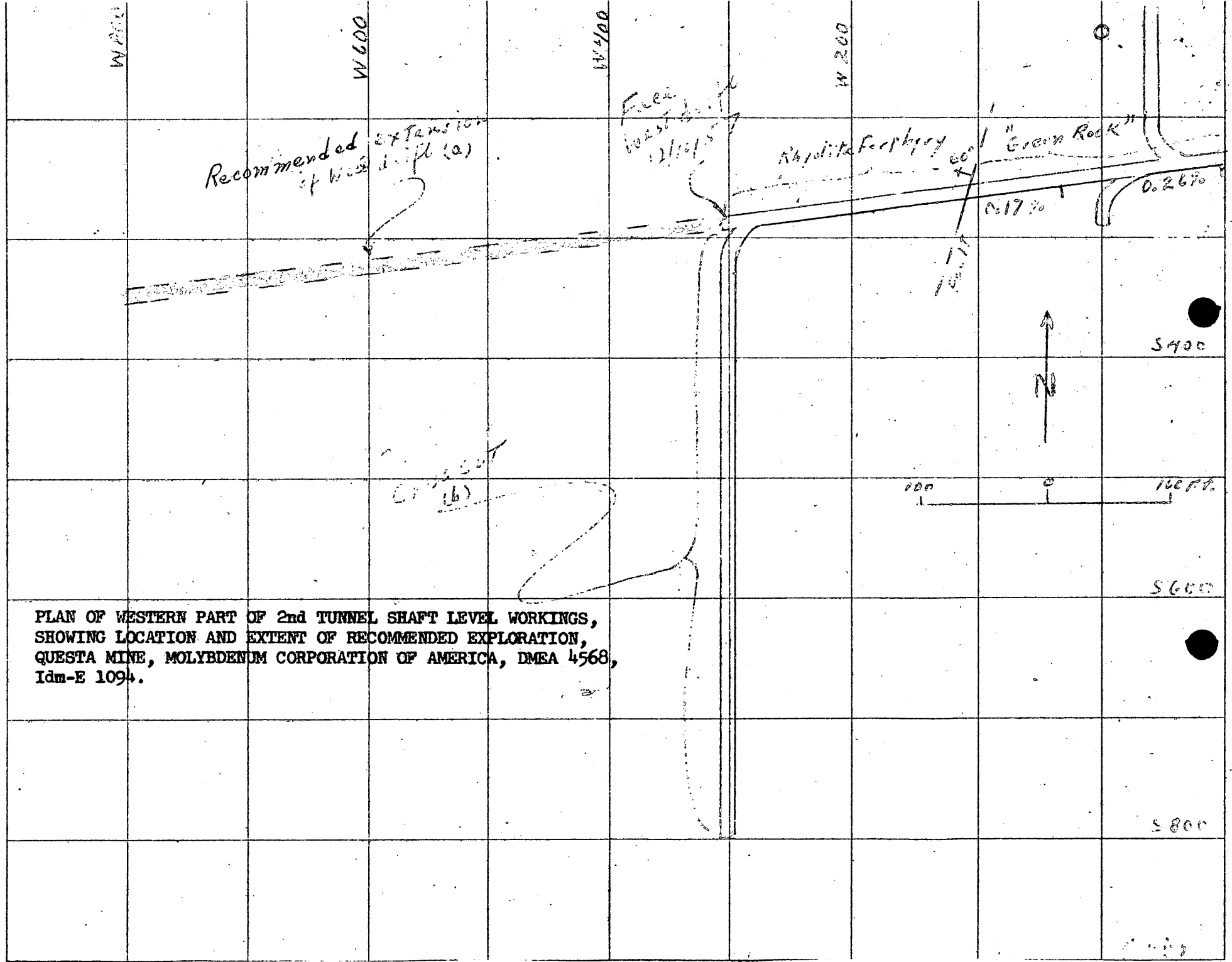
Allen S. Dakan, Director
Operations Control and
Statistics Division

Copy to:

Region III. Denver 2, Colorado

Code 700

6416



PLAN OF WESTERN PART OF 2nd TUNNEL SHAFT LEVEL WORKINGS, SHOWING LOCATION AND EXTENT OF RECOMMENDED EXPLORATION, QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, DMEA 4568, Idm-E 1094.

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DATE		

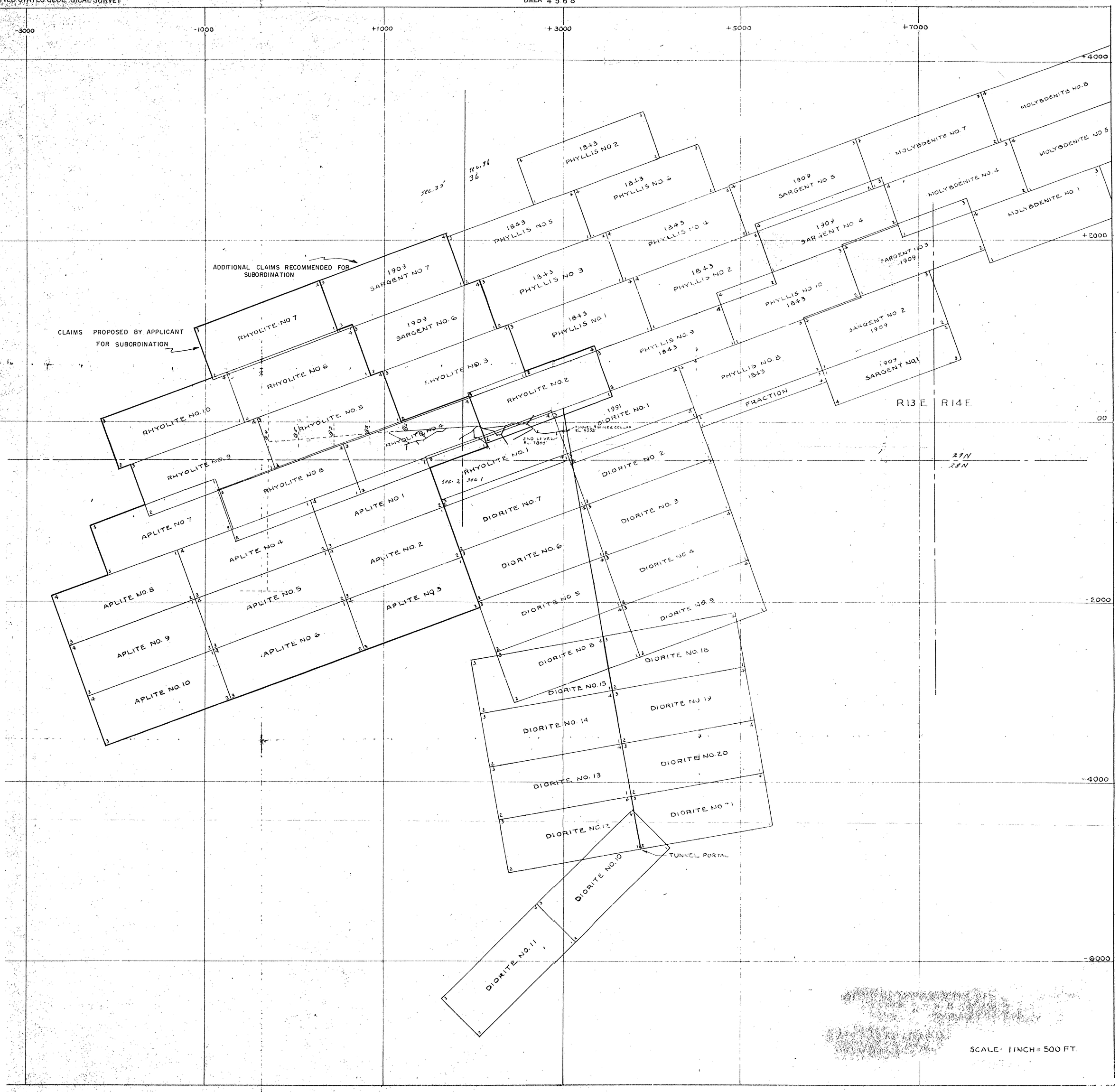


FIGURE 5. CLAIM MAP, MOLY OR QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, TAOS COUNTY, NEW MEXICO. DMEA 4568.

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EXAMINATION REPORT
DMEA 4568

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

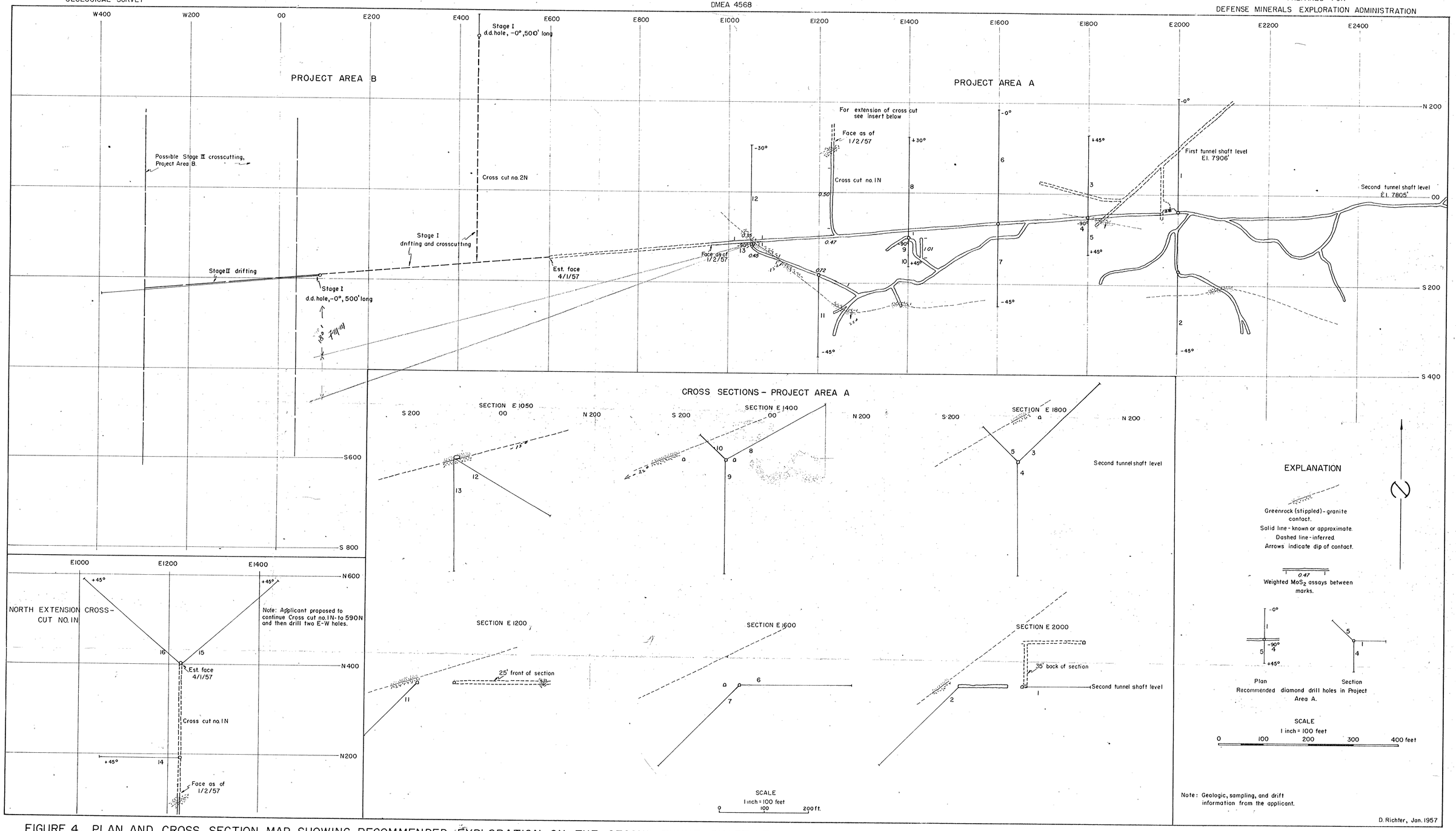


FIGURE 4. PLAN AND CROSS SECTION MAP SHOWING RECOMMENDED EXPLORATION ON THE SECOND TUNNEL SHAFT LEVEL, QUESTA MOLYBDENUM MINE, TAOS COUNTY, NEW MEXICO. DMEA 4568.

PLAN AND VERTICAL SECTIONS

QUESTA OR MOLY MINE, TAOS COUNTY, NEW MEXICO

TO ACCOMPANY REQUEST FOR WORK APPROVAL UNDER STAGE II AREA B OF D.M.E.A.

CONTRACT # Idm1024 December 9, 1957 by J.H.Heimicke, Geologist

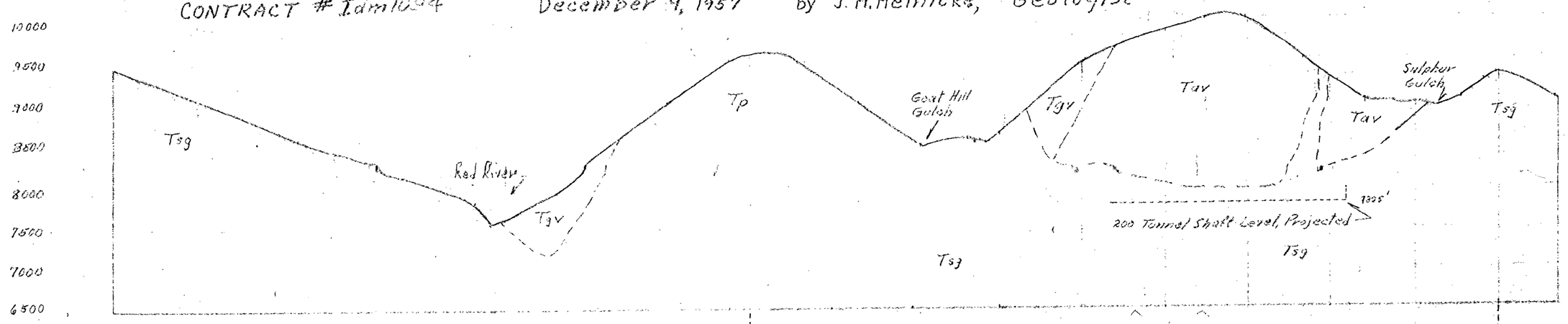
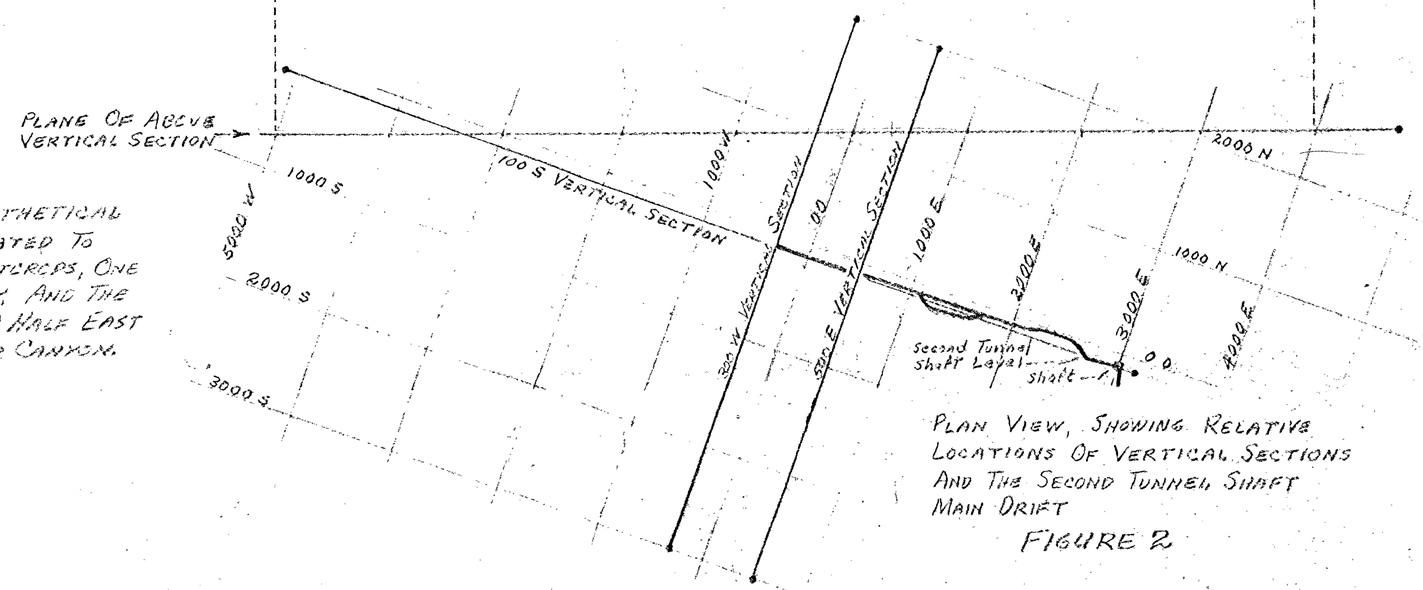


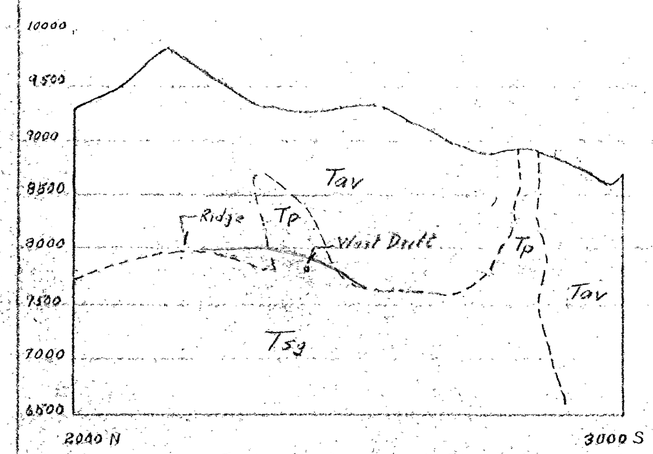
FIGURE 1

VERTICAL SECTION ALONG AXIS OF HYPOTHETICAL INTRUSIVE RIDGE OF SODA GRANITE LOCATED TO CONNECT TWO MASSIVE SODA GRANITE OUTCROPS, ONE ON THE EAST IN THE OLD MINE VICINITY, AND THE OTHER TO THE WEST, ABOUT A MILE AND A HALF EAST OF QUESTA, AT THE MOUTH OF RED RIVER CANYON.



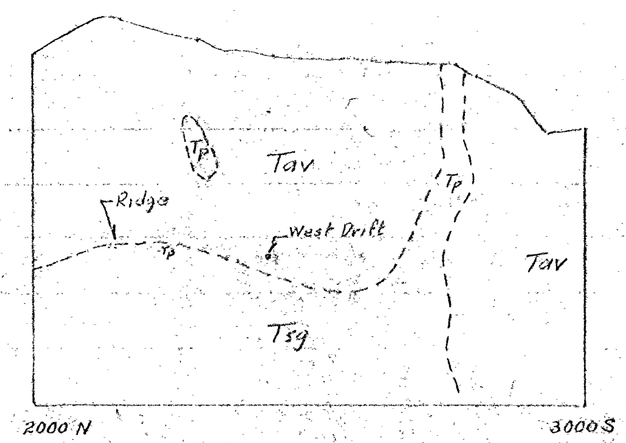
PLAN VIEW, SHOWING RELATIVE LOCATIONS OF VERTICAL SECTIONS AND THE SECOND TUNNEL SHAFT MAIN DRIFT

FIGURE 2



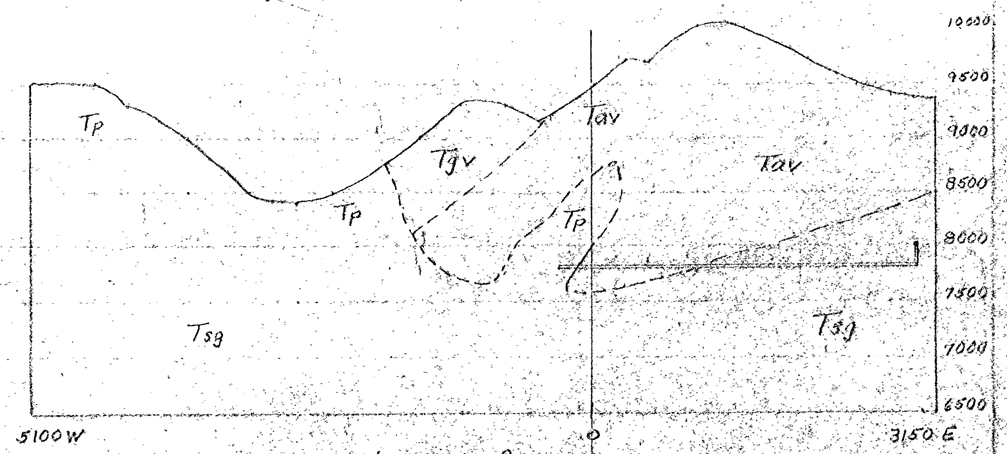
300 W VERTICAL SECTION

FIGURE 3



500 E VERTICAL SECTION

FIGURE 4



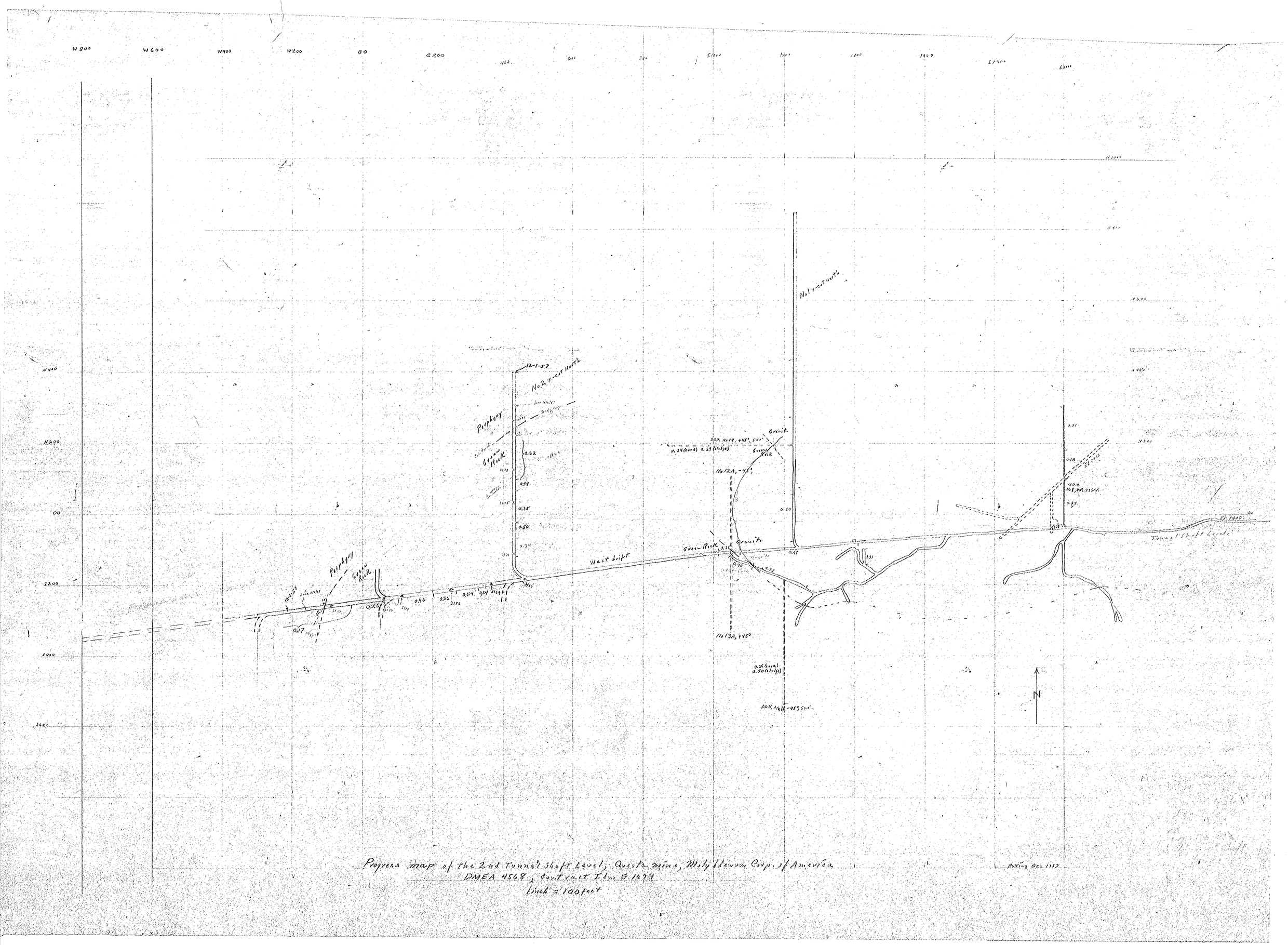
100 S VERTICAL SECTION

FIGURE 5

HORIZONTAL + VERTICAL SCALE: 1" = 1000' (1:12000)

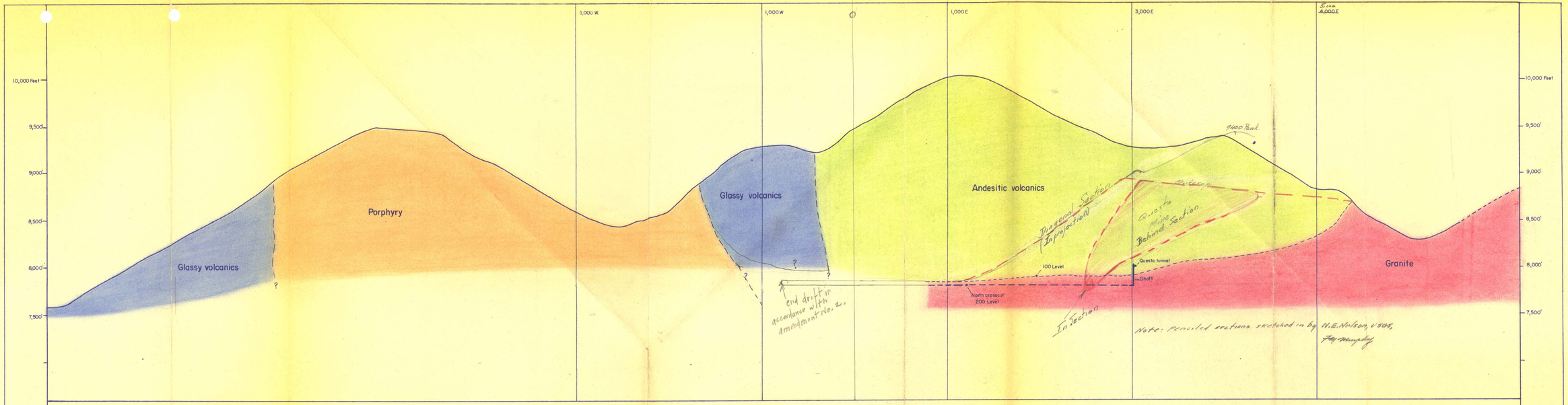
EXPLANATION:

- Tp PORPHYRY
- Tsg SODA GRANITE
- Tgv GLASSY VOLCANICS
- Tav ANDESITIC VOLCANICS



Progress map of the 2nd Tunnel Shaft Level, Quartz Mine, Molybdenum Corp. of America
DMEA 4568, Contract Flm B 1098
1 inch = 100 feet

RWKing Dec 1952



CROSS SECTION C-D

LINE OF SECTION E-W ALONG COORDINATE OON.

LOOKING NORTH

0' 500' 1,000' 1,500'

SCALE

MOLYBDENUM CORPORATION OF AMERICA
500 FIFTH AVENUE
NEW YORK 18, N. Y.

D. M. E. A. 4568

FIGURE 2.--PLAN SHOWING DMEA EXPLORATION, 2ND TUNNEL SHAFT LEVEL, QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, TAOS COUNTY, NEW MEXICO

100 0 100 200 300 400 500 FEET

FIG. 1 GENERALIZED GEOLOGIC MAP OF THE QUESTA MINE AREA, TAOS COUNTY, NEW MEXICO.

R. O. Kiff, 1958 D. Richter, 1957

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EXAMINATION REPORT
DMEA 4568

PREPARED FOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

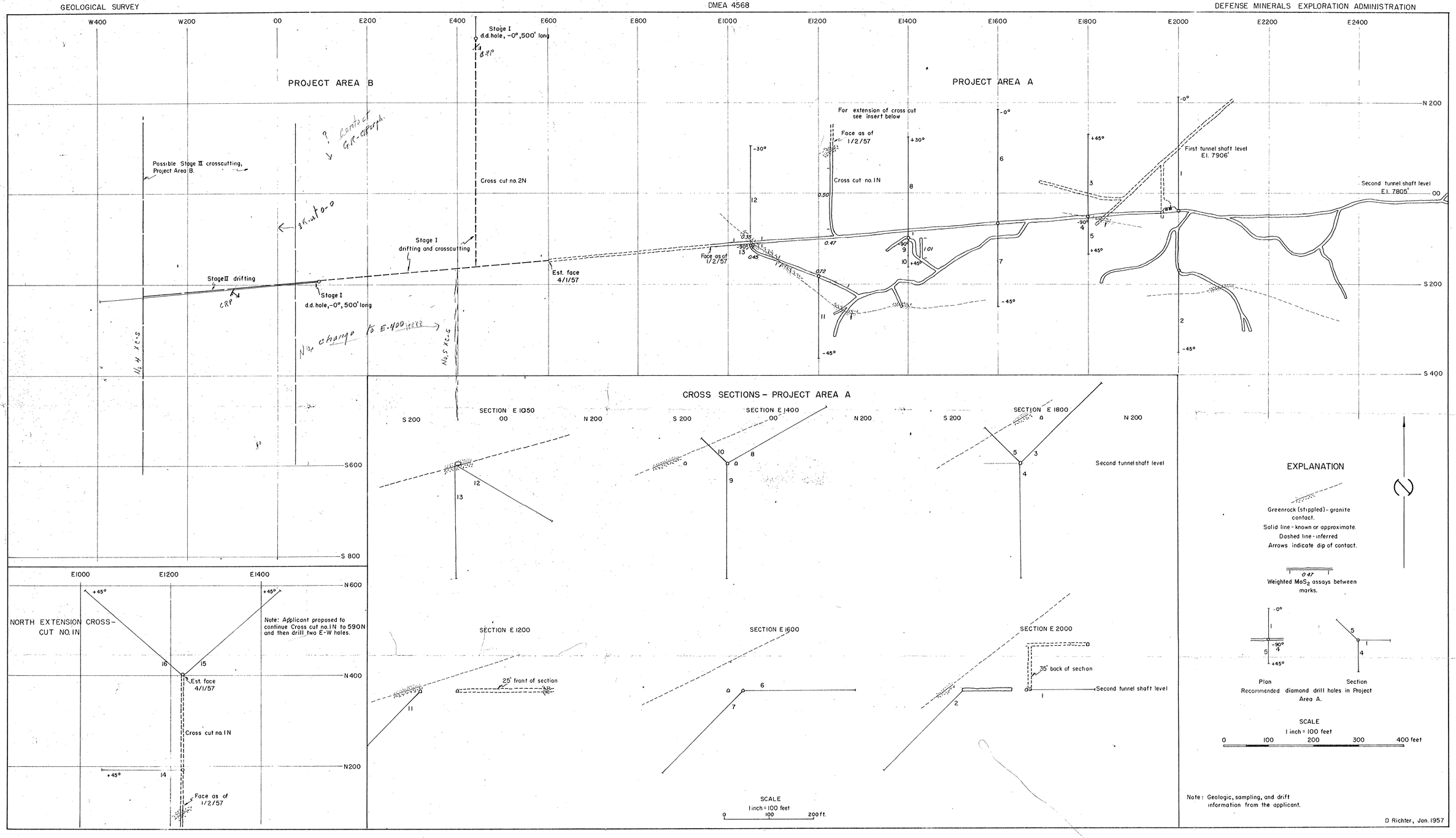


FIGURE 4. PLAN AND CROSS SECTION MAP SHOWING RECOMMENDED EXPLORATION ON THE SECOND TUNNEL SHAFT LEVEL, QUESTA MOLYBDENUM MINE, TAOS COUNTY, NEW MEXICO. DMEA 4568.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

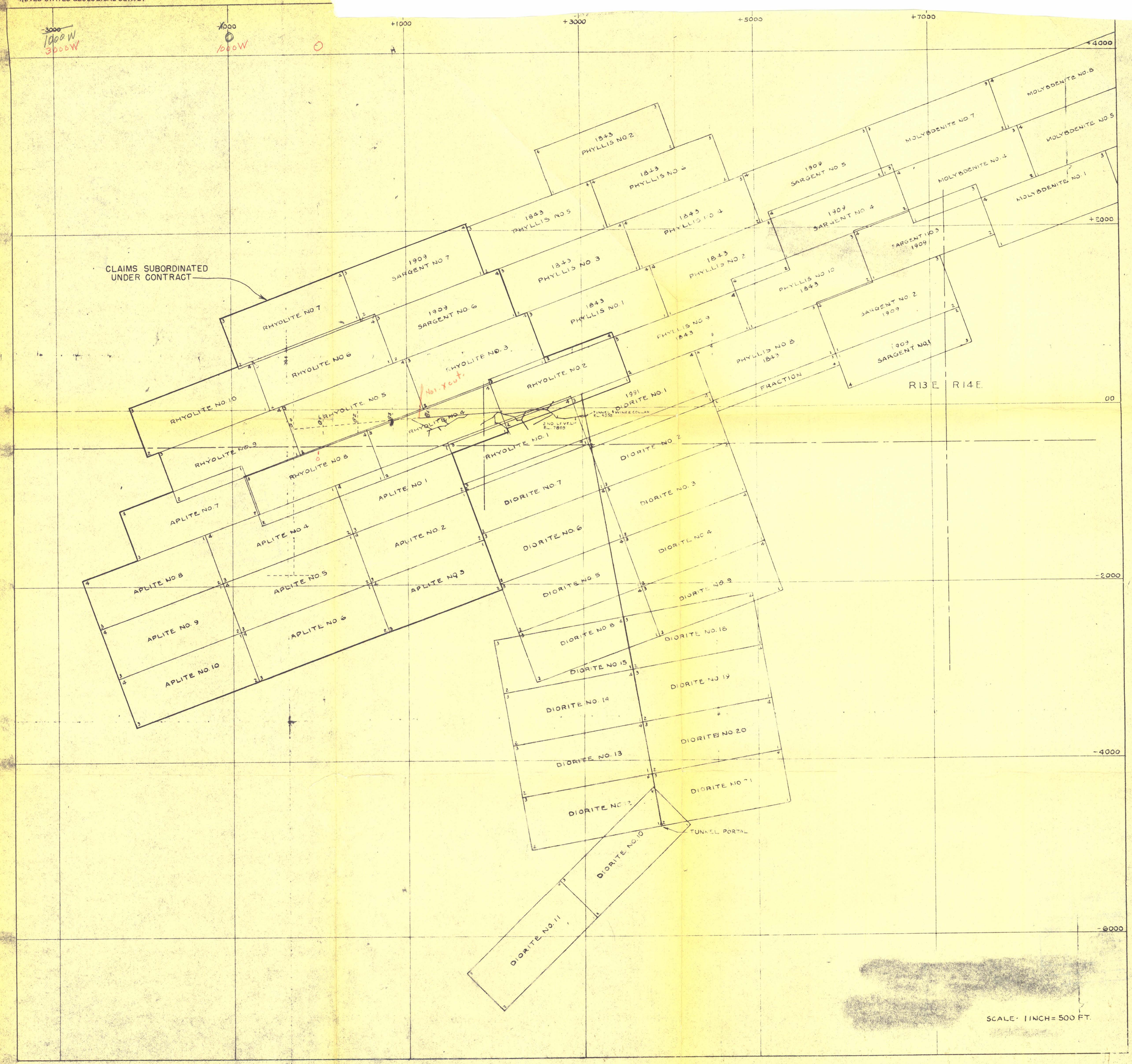
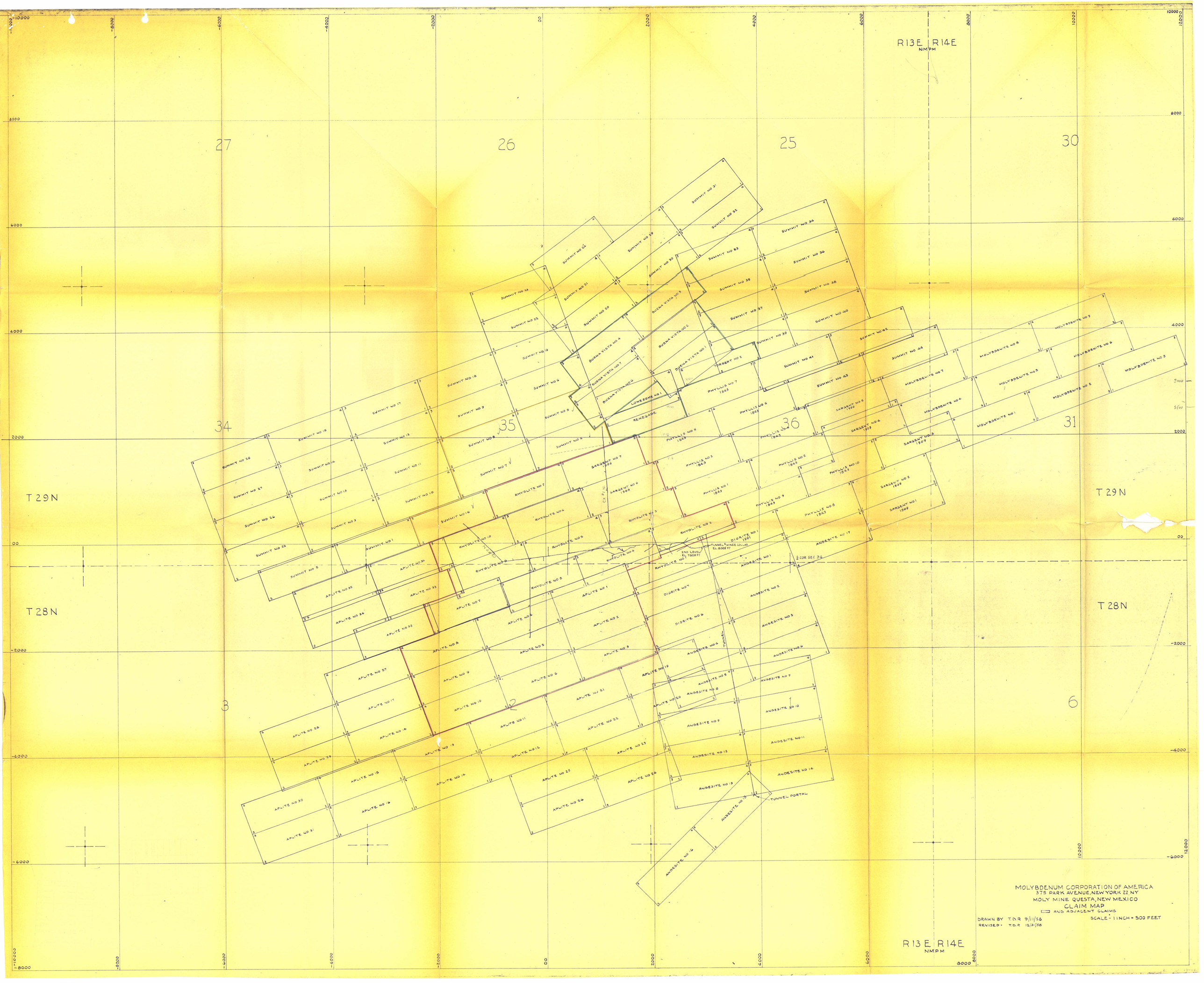


FIGURE 5. CLAIM MAP, MOLY OR QUESTA MINE, MOLYBDENUM CORPORATION OF AMERICA, TAOS COUNTY, NEW MEXICO. DMEA 4568.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DIORITE NO 2
DIORITE NO 3
DIORITE NO 4
DIORITE NO 5
DIORITE NO 6
DIORITE NO 7
2ND LEVEL
EL. 7605 FT
TUNNEL & WINZE COLLAR
EL. 8005 FT
1/4 COR SEC 36
ANDESITE NO 1
ANDESITE NO 2
ANDESITE NO 3
ANDESITE NO 4
ANDESITE NO 5
ANDESITE NO 6
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ANDESITE NO 8
ANDESITE NO 9
ANDESITE NO 10
ANDESITE NO 11
ANDESITE NO 12
ANDESITE NO 13
ANDESITE NO 14
ANDESITE NO 15
ANDESITE NO 16
ANDESITE NO 17
TUNNEL
TUNNEL PORTAL
MOLYBDENUM CORPORATION OF AMERICA
375 PARK AVENUE, NEW YORK 22, NY
MOLY MINE QUESTA, NEW MEXICO
CLAIM MAP
AND ADJACENT CLAIMS
DRAWN BY T.D.R 9/11/58
REVISED: T.D.R 12/31/58
SCALE - 1 INCH = 500 FEET
R13E R14E
NMPM