UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

Terminated (~~or cancelled~~) without certification. DMEA No. 1387 X

This is the official contract file containing all official records of the project. Duplicate material has been removed. The records contained in the files are checked and are arranged in this manner:

Left Side

✓ Certificate of Audit (Final).

Interim Audit(s).

Report of Review.

✓ Closing letter

✓ Termination Notice or Agreement.

Recision Notice.

Assignment of Contract.

✓ Contract Amendments (latest on top).

✓ Contract with all exhibits and annexes.

Owner's Consent to Lien.

✓ Subordination Agreement.

✓ Leases and assignments of leases.

✓ Application and attachments.

Schedule of Collections.

✓ Operator's monthly reports and all attachments (latest on top).

Right Side

✓ Project summary.

✓ Work completed analysis.

✓ All other material is filed in chronological order with correspondence including the following reports as checked:

✓ Final Field Team Report. (Tab)

✓ Operator's Final Report.

✓ Interim Reports. - on left wall 104

✓ On-site Exam Report(s). (Tab)

Settlement Sheets.

If additional folders are required because of volume of records, show folder numbers and contents below:

Maps in folder number _____

Operator's Monthly Reports in folder number _____

wb
Reviewer's Initials

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DEFENSE MINERALS EXPLORATION ADMINISTRATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

AUDIT CERTIFICATE

I have examined the records and transactions of:

Potter and Sims a partnership
doing business as Potter and Sims
P.O. Box 229
Joplin, Missouri

pertaining to Exploration Contract Idm-E310, Docket No. DMEA 1387 including Amendments 1 and 2, and termination agreement, covering a project of exploration for tungsten, for the period of June 1, 1952 to November 30, 1952.

My examination was made in accordance with generally accepted standards applicable in the circumstances.

The audit disclosed the following facts in regard to the amount to be paid the Contractor:

Total Cost per MF-104	$25,518.15
Exceptions (per Audit Report)	35.01
Total Accepted Cost	$25,483.14

The contract calls for a 75 per cent participation of exploration expenses by the United States Government. Therefore, payment to the Contractor by the Government in the amount of Nineteen thousand one hundred twelve and 35/100

-$19,112.35-

is valid and proper.

This certificate is issued on the provision that the Regional Executive Officer, the Administrator, or other competent official has accepted or will accept the project as having otherwise met the terms of the contract.

February 9, 1953

T. H. Brading

T. H. Brading, Auditor

I. INTRODUCTION

A final audit was made from January 14 to January 16, 1953 (covering the period from June 1, 1952 to November 30, 1952) of the records and accounts of operations pertaining to Contract Idm-E310, Docket No. DMA 1387, Amendments 1 and 2 and termination agreement with

Potter and Sims
a partnership doing business as Potter and Sims

P.O.Box 229

Joplin, Missouri

covering a project of exploration for tungsten.

The accounting records under this contract are located at the office of the local agent, Mr. G. R. Griswold, 1500 Los Lomas Road, N.E., Albuquerque, New Mexico. The mine is located in the Cunningham Hill area, Ortiz Mine Grant, Santa Fe County, New Mexico, about sixty miles from Albuquerque.

During the course of the audit, Mr. G. R. Griswold, Agent, was consulted as required. His cooperation greatly facilitated the audit.

II. GENERAL INFORMATION ON RECORDS

The accounting records consisted of duplicate copies of invoices, (cancelled checks which the Joplin office had forwarded) and a monthly work sheet, which was the basis for the preparation of Monthly MF-104 Reports. This audit involved in general, a check of the copies of invoices and payroll record against the Monthly Work Sheets. All costs except for depreciation and payroll taxes were recorded on a cash basis.

III. SCOPE OF AUDIT AND FINDINGS

The audit was limited to ascertaining the accuracy, propriety and validity of the costs shown in the "Totals to Date" column of Form MF-104, Operator's Monthly Report and Voucher, for the month of November. The extent of the audit and the findings under each of the "Items of Cost" follow.

(1) Independent Contracts:

Sub-contract for diamond drilling was entered into w th Boyles Brothers Drilling Company on June 12, 1952. This contract was approved by the Regional Executive Officer June 25, 1952. Payments made under this contract were verified by examination of invoices from Boyles Brothers.

The total costs allowable and chargeable under this item were as follows:

26' pipe drilling at $6.10'	$158.60
2441' BX at 5.50'	13425.50
414' BX at 6.10'	2525.40
177' Reaming at 2.25'	398.25
Cementing	1289.50
Demobilization	1000.00
Total 2881' at $6.52 average	$18,797.25

(2) Labor and Supervision:

All charges for labor were checked against recordings on the Monthly Work Sheets. Time books were checked in detail for the entire period, extensions and footings were proved. The audit revealed that the costs under this item are properly chargeable and allowable under the terms of the contract, and are as follows:

Roustabout	$123.45
Sampler	1023.93
Total	$1147.38

Supervision:

Salary at $500.00 per month for G. R. Griswold for four months or a total of $2,000.00 is a proper and allowable charge under the terms of the contract and Termination of Exploration Project By Agreement After Commencement But Before Completion of the Work as approved by the Acting Administrator, DMEA, effective September 30, 1952.

(3) Operating Materials and Supplies:

All charges under subject category were checked against Monthly Work Sheets. Copies of all invoices were examined to determine the propriety of the items charged. Cancelled checks were spot checked for proof of payment, against related invoices. All supplies were charged against operations when payment of invoice was made.

The total costs properly chargeable and allowable under this category were:

Pipe	.94
Bits and Core Boxes	$165.32
Gas and oil	166.15
Total	$332.41

Total expenditures for Bits and Core Boxes was $272.43. Of this amount $50.41 was charged to Roads and Trails, and the balance to Drilling. The Contractor deducted $56.70 on final MF-104 for Bits and Core Boxes on hand. This was approved by the Regional Executive Officer.

Depreciation:

Charges for depreciation of equipment were checked to Monthly Work Sheets, and the rates verified by reference to contract and Amendment No. 2. These charges were as follows:

1-4 Wheel Drive Truck at $10.00 per month-June to Sept.	$ 40.00
1- 1951 Plymouth Sedan at $25.00 per month-June to Sept.	100.00
Total Charge	$140.00

The allowance for the first stage for depreciation on the truck and sedan are shown in the contract as $105.00 total allowable maximum for three months. The time on Stage I was extended two months by termination of exploration agreement effective September 30, 1952, but no provision was made for depreciation of equipment. Disallowance is made for depreciation claimed on September MF-104 as follows:

1-4 Wheel Drive Truck	$10.00
1-Plymouth Sedan	25.00
Total	$35.00

Total Disallowances approved-$35.01, of which $.01 is in Roads and Trails.

Costs of $105.00 are properly allowable and chargeable under the terms of the contract and Amendment No. 2.

Purchase:

A core splitter costing $123.74 was acquired by the Contractor. On the final MF-104, the Contractor deducted this amount, and retained the equipment. This action had the approval of the Regional Executive Officer.

(5) Initial Rehabilitation & Repairs:

Not applicable to this contract.

(6) New Buildings - Improvements Etc.

Not applicable to this contract.

(7) Miscellaneous:

Repairs to Equipment

Invoices totaling $12.15 for repairs to Plymouth Sedan

were examimed, and the charges traced to Monthly Work Sheets. These items are considered to be allowable charges to the operation.

Sampling and Analysis:

Charges under this item were found to be as follows:

44 Gold Assays at $1.25	$55.00	
Less 10%	5.50	$ 49.50
260 Tungsten Assays at $4.00	$1040.00	
Less 10%	104.00	936.00
6 Tungsten check assays at 11.00		66.00
Express Charges		43.38
Cartons etc.		5.33
Total		$1100.21

All charges were traced to Monthly Work Sheets, invoices were verified by examination, and payment substantiated by inspection of cancelled checks. Charges are proper and allowable.

All charges for Payroll Taxes and insurance were verified by checking computations at the rates shown to be in effect, by the company's files. These rates were:

F.I.C.A.	1.5	
State Unemployment	2.7	4.2
Workmen's Compensation Insurance		5.519

Invoices for Rent and Subsistence were examined, all costs traced to Monthly Work Sheets and payment verified by examination of cancelled checks. Charges were:

Rent	$65.44
Subsistence	106.08
Total	$ 171.52

Finance Officer disallowed $52.61 for inadequate documentation for the month of July 1952. $50.57 of this amount was reinstated in September, leaving a blance of $2.04. Proper supporting evidence was

disclosed by the audit, therefore reinstatement of $2.04 is made.

Charges for maps and logs ($16.19) were verified by checking and inspection of invoices and related cancelled checks.

Due to a misunderstanding on the part of the Contractor, costs allocable to Roads and Trails were distributed to the various accounts. The items properly chargeable to this account were found to be as follows:

Labor	$ 543.51
Explosives	62.48
Pipe	1.18
Drill Steel	50.41
Gas and Oil	122.07
Depreciation	16.67
P.R. Taxes	22.82
Workmen's Compensation	30.00
Rental Bulldozer	700.00
	$1549.14

In June, the Operator charged $18.00 for depreciation on compressor and wagon drill. The correct rate for the half month should be:

Compressor at $25.00 per month	$12.50
Wagon Drill at $8.33 per month	4.17
Total Allowable	$16.67
Excess Disallowed	$ 1.33

In filing the final MF-104, the Operator deducted $1.32 leaving $.01 which is shown as a disallowance on the summary in this report. Comparison of analysis costs shown on the MF-104A for Roads and Trails shows a total of $2263.79, and the totals established by the audit are shown below:

	Allowable by Audit	MF-104	Difference
Supervision	------	$604.11	(604.11)
Labor	$543.51	508.92	34.59
Explosives	62.48	62.48	
Bits & Steel	50.41	50.41	
Gas and Oil	122.07	122.07	
Bulldozer Rental	700.00	700.00	
Depreciation	16.67	58.96	(42.29)
Pay Roll Taxes	52.82	105.36	(52.54)

	Allowed by Audit	MF-104A	Difference
Office Rent and Subsistence	-------	$ 50.30	($50.30)
Pipe	$ 1.18	1.18	
	$1549.14	$2263.79	$(714.65)

IV. CONCLUSIONS AND RECOMMENDATIONS

Total costs as shown by MF-104A are in agreement with those shown on MF-104 on November 1952. Total costs as allowed by the contract for Stage I, and Termination of Exploration Project Contract by Agreement After Commencement but Before Completion of Work, compared to actual accomplishment follows:

Stage I - Contract

Independent Contract	
4000 feet diamond drilling at $7.00 per foot	$28,000.00
Labor, Supervision, Consultants	
Labor and Supervision (per contract)	3,150.00
Labor and Supervision (termination) (agreement)	2,400.00
Total for Project #1	$33,550.00
Road or Trail Work- Project 1 and 2	4,000.00
	$37,550.00

Overall average per foot (Estimate) $9.39

TOTAL EXPENDED

Independent Contract-Drilling 2881'	$18,797.25
Labor & Supervision	3,147.38
Material & Supplies	332.41
Equipment Depreciation	105.00
Payroll Taxes and Insurance	251.89
Sampling and Analysis	1,100.21
Miscellaneous	199.86
Road and Drill Sites	1,549.14
	$25,483.14

Overall Average per foot-Actual $8.85

Assuming that the above average costs would obtain, the Contractor could finish the 1119' at $8.85'. The total cost would be

$25,483.14 + $9903.15--total $35,386.29 as compared to an estimated cost of $37,550.00.

The audit has disclosed that all costs, as charged to this project, with the exception of the disallowances under item (4) Operating Equipment, Depreciation, of the preceding section of this report are reasonable and proper under the terms of the contract, Amendments 1 to 3, and Termination of Exploration Project Contract By Agreement After Commencement But Before Completion of Work effective September 30, 1952.

The adjustments between Items of Costs as shown on the November MF-104, the recommended disallowances, reinstatements, and approved amounts are summarized as follows:

	Nov. 1952	Correct-ions	DISALLOWANCES Finance Officer	DISALLOWANCES Audit	Rein-state-ment	Allowed by Audit
Independent Contract:						
Drilling	$18797.25	$18797.25				$18797.25
Labor & Supervision:						
Labor	1690.89	1147.38				1147.38
Supervision	2000.00	2000.00				2000.00
Operating Material & Supplies:						
Explosives	62.48					
Pipe	2.12	.94				.94
Bits & Core Boxes	215.73	165.32				165.32
Gas & Oil	288.22	166.15				166.15
Operating Equip-Rental	700.00					
Purchase	------					
Depreciation	156.68	140.01	$.01	$35.00		105.00
Miscellaneous:						
Repairs to Equip.	12.15	12.15				12.15
Sampling & Analysis	1100.21	1100.21				1100.21
Payroll Taxes	304.71	78.19				78.19
Rent & Subsistence	171.52	171.52	2.04		$2.04	171.52
Maps & Logs	16.19	16.19				16.19
Workmen's Compensation Ins.		173.70				173.70
Road & Drill Sites		1549.14				1549.14
	$25518.15	$25518.15	$2.05	$35.00	$2.04	$25483.14

At the conclusion of the audit, the findings were discussed with the local agent, G. R. Griswold.

February 9, 1953

T. H. Brading, Auditor

EXHIBIT B

The audit also disclosed that the status as of November 30, 1952, of the "Allowable Maximums" under the contract was as follows:

ITEM	ALLOWABLE MAXIMUM	TOTAL COSTS	BALANCE
	4000' at $7.00'	2881'at 6.52'	
Diamond Drilling	$28,000.00	$18,797.25	$9202.75
Supervision	2,500.00	2,000.00	500.00
Sampling	1,750.00	1,023.93	726.07
Rental of Office	250.00	65.44	184.56
Sustenance of Supervision	250.00	106.08	143.92
Depreciation			
4 Wheel Drive Truck	30.00	30.00*	
Plymouth Sedan	75.00	75.00*	
Roads and Trails	4,000.00	1,549.14	2450.86

* Disallowance of one month's depreciation on these items of equipment is deducted in the amount of $35.00. Costs as shown are not allowable.

400

FILE COPY
SURNAME:

Rutledge
Talbert
Orton
Ortiz

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

NOV 18 1953

Potter and Sims
P. O. Box 229
Joplin, Missouri

Re: Docket No. DMEA 1387 - Tungsten
Cunningham Hill area
Ortiz Mine Grant
Santa Fe County, New Mexico
Contract No. Idm-5310

Dear Sirs:

This is with reference to the subject exploration project contract between Potter and Sims, partners, and the Government.

The final audit of the contract expenditures and the final reports of the Operator and the Field Team have been received and accepted by this Administration. The total amount of the 2-stage contract was $77,520.00, subject to the usual Field Team approval. The contract allotted $36,820.00 for diamond drilling under Stage I, and $4,000.00 for road building under both StagesI and II. Of this $40,820.00, the sum of $25,483.14 was expended, 75 percent of which, or $19,112.35, represented the Government's share. No unused supplies, material, or equipment remain to be disposed of for the joint account of the Operator and the Government. The exploration was conducted in a satisfactory manner.

The contract was terminated September 30, 1952, by mutual consent after completion of Stage I, which produced negative results. Because the results of the work completed under the contract were unfavorable, it is not our intention to make a certification of discovery or development which would create a lien against the project property. We are, therefore, closing our books and records with respect to this project. Your attention is called, however, to Article 7(d) of the contract which requires the Operator to "keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract."

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

Sincerely yours,

G. O. Mittendorf

Administrator

cc: DOCKET
FT, REG. 4
CODE 400
OPER. COMM.
ADMN. READING FILE
R. W. GEEHAN, USBM
T. P. THAYER, USGS
utledge/ls 11/13/53

Government's Copy - Rungston

TERMINATION OF EXPLORATION PROJECT CONTRACT BY AGREEMENT AFTER COMMENCEMENT BUT BEFORE COMPLETION OF THE WORK

WHEREAS, the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and George W. Potter and Dewey Sims, partners, doing business as Potter and Sims, hereinafter called the "Operator," entered into a certain Exploration Project Contract I-dm-E310, Docket No. DMEA-1387, dated May 6, 1952, and

WHEREAS, it was orally agreed and understood between the Operator and the Government that the time for performance of Stage I of the said contract be extended two months and that the Government would contribute 75% of the consequent necessary increased cost for supervision of the work, the rental of the supervisor's office,and the salary of a sampler and roustabout in an amount not to exceed $2,400.00

NOW THEREFORE, it is agreed this 30th day of September 1952, between the Operator and the Government as follows:

(1) Effective as of the date of the original contract, the said contract is hereby amended to increase the time of performance of Stage I by two months and to provide that for the aforesaid additional two month period, the Government contribute 75% of the increased cost, not to exceed $2,400.00,for supervision of the work, the rental of the supervisor's office and the salary of a sampler and roustabout.

(2) Effective as of 30th day of September 1952, the afore-mentioned Exploration Project Contract shall be and is hereby terminated.

(3) Any work prosecuted or costs incurred by the Operator after the date first above written shall be for the sole account of the Operator, except for (a) such necessary and reasonable costs and expenses as may be incurred in preserving and disposing of any facilities, buildings, fixtures, equipment, or other items, to the cost of which the Government has contributed and in which the Government has an equity, and (b) the costs of any reports, accounts, and winding-up and settlement actions provided for in the contract.

(4) The undersigned Operator hereby releases and agrees to save harmless the Government from all claims and demands under or arising out of said Exploration Project Contract, except as herein expressly otherwise provided.

Witness the following signatures as of the day and year first above written.

UNITED STATES OF AMERICA

By Frank E. Johnson
ACTING Administrator - DMEA

POTTER AND SIMS - Operator

By George N. Potter
Partner

By
Partner

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
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GOVERNMENT COPY

No. 2

AMENDMENT OF CONTRACT: No. Idm-E-310

Contract Docket No. DMEA 1387, dated May 6, 1952, between the United States of America and Potter and Sims is hereby amended as follows, effective June 16, 1952:

Referring to "EXHIBIT A" attached to Exploration Project Contract Form MF-200, heading "(4) Operating Equipment", subheading "To be furnished by operator", add the following:

1 - 160 c.f.m. compressor, valued at $1,500.00, allowable depreciation rate @ $25.00* per month.

1 - Wagon drill, valued at $500.00, allowable depreciation rate @ $8.33* per month.

(* Indicates allowable maximum).

Depreciation of the above equipment is an allowable charge to funds allocated to road and/or trail work and preparation of drill sites under Item "(7) Miscellaneous", and is limited to the extent that funds are available therefrom.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated July 29, 1952.

POTTER AND SIMS - OPERATOR

By _____ Partner

By _____ Partner

UNITED STATES OF AMERICA

By _____ Executive Officer - DMEA

OK

POTTER AND SIMS
1500 Las Lomas Road
Albuquerque, New Mexico

COPY

June 16, 1952

W. H. King, Executive Officer
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

Re: Exploration Project Contract
Idm-E-310, DMEA Docket 1387

Dear Mr. King:

At the time of filing of Form MF-103 we planned to contract the road and trail building necessary to reach the diamond drill sites. Since that time we decided to do the road building ourselves.

An amendment to Contract Idm-E-310 is requested, effective June 16, 1952, to allow for the use and reimbursement of an Ingersoll-Rand 160 c.f.m. portable gasoline driven air compressor and an Ingersoll-Rand wagon drill which are owned by Potter and Sims and are now being used for road construction on this project.

The standard rent on these items from local contractors is $212. per month for the 160 c.f.m. air compressor and $189. per month for the wagon drill. The fair value of the compressor is fifteen hundred dollars ($1500.00) and the fair value of the wagon drill is five hundred dollars ($500.00).

Very truly yours,

POTTER AND SIMS

/s/ G. R. Griswold

G. R. Griswold, Agent

cc: R. W. Storms
Tucson, Arizona

Potter and Sims
Joplin, Missouri

MINING DIVISION
REGION IV

July 1, 1952

Air Mail

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

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

Subject : Proposed amendment, DMMA Docket 1387, Contract Idm-5310, Potter & Sims Ortiz Mine Grant (Tungsten), Santa Fe County, N. Mex.

In regard to the amendment to the above contract for use of a 160 cfm compressor and a wagon drill for road building as proposed by G. M. Griswold, Potter and Sims Agent, in his letter to you of June 16, J. M. Soule' of this office visited the project area in Santa Fe County, N. Mex. last week and discussed this amendment with Griswold. Soule' advised Griswold to ask for depreciation on the above items at a monthly rate of 1/60 of their value, or $33.33 per month if their value is $2,000 as noted by Griswold. Evidently Griswold will write again about this amendment.

The compressor and wagon drill were shipped to the project from Joplin, Missouri where Potter and Sims maintain their headquarters. The wagon drill is small and does not seem to be too large for this work.

If Griswold asks for $33.33 per month for depreciation on the compressor and wagon drill, I recommend that an amendment be made up to allow this cost to the project, the monthly depreciation to be taken from the $4,000 which was set up for road work. It seems that the operators can do this work cheaper by using their own equipment than by contracting the road work as originally planned.

A copy of Soule's report is attached.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMMA-1387
DF

WRStorms:frj

MINING DIVISION
REGION IV

July 1, 1952

Memorandum

To : Walter H. Storms, Chief, Arizona-New Mexico Dr., Mining Div., Region IV, Tucson, Ariz.

From : J. H. Soule', Mining Engineer, Tucson, Ariz.

Subject : Docket DMA-1337, Contract Idm-2310, Potter & Sims, Cunningham Hill Breccia Area, Ortiz Mine Grant, Santa Fe County, New Mexico.

This project was visited on June 24, 1952. According to G. H. Griswold, work on the project started June 1, 1952 and actual road work was commenced a few days later. At the time of the visit, the roads were nearly completed to all the drillsites proposed for the first phase of the project. The drill contractor, Joyles Bros. of Salt Lake City, Utah, was expected to arrive around the first of July.

Various phases of the project were discussed with Griswold. First, he was notified that the depreciation on the wagon drill and compressor used in constructing the roads could be figured at 1/60 of the value of the equipment. He estimated (via amendment request) that the compressor was valued at $1,300 and the wagon drill at $800. Looking at the equipment, the valuation seemed reasonable. However, there were air hoses and drill steel that would increase the value of a wagon drill outfit to about $700 which was reasonable. The examining engineer approves the use of the drill and compressor and feels that a charge of 1/60 of the appraised value is not unreasonable.

As $4,000 was allowed for all road work and no breakdown of this sum was made in the contract, the use of the above equipment, plus a bulldozer under rental, was logical. The only criticism of the road building may be that it is too well done. Griswold estimates the road costs to be well under $2,000, assuming 1/2 of $4,000 allotted to each phase of the project. The road costs include <u>all</u> costs during the month of June.

CC W. H. King (orig. & 6)
DMA-1337
DF

~~KRSkkkx~~
JHSoule':frj

This brings up another point worthy of consideration. According to the contract, three months are allowed for the first drilling phase of the project and the sampling and supervision costs are definitely limited in amount to cover those three months. As no provision was made for preparatory work and because this preparatory work plus the drilling will probably last more than three months, it may be well to allow the supervision and labor during the road building period to be charged to the $4,000 allotted for that purpose. They were included in Griswold's estimated costs for June, as mentioned above. Only three men were used in road construction, which includes Griswold.

OK

One other thing not covered by the contract is the allowance for small miscellaneous items that would be necessary for properly sampling the sludges if core recovery happens to be less than expected. If the road building costs are somewhat lower than $2,000 (this should be known before long) it seems as if some of these remaining funds could be used for small necessary items.

John H Soule

J. H. SOULE, Mining Engineer
Arizona-New Mexico Branch

Government Copy
Original

No. 1

AMENDMENT OF CONTRACT: No. Idm-E-310

Contract Docket No. DMEA 1387, dated May 6, 1952, between the United States of America and Potter and Sims is hereby amended as follows, effective June 6, 1952:

Referring to "EXHIBIT A" attached to Exploration Project Contract Form MF-200, heading (4) Operating equipment, add the following as an additional subheading:

"To be rented"

Stage I and Stage II

1 - Tractor with bulldozer blade @ $8.00 per hour working time. Extent of rental is limited to funds available as allocated to road or trail work and preparation of drill sites.

This amendment shall not be construed to increase the estimated total cost of the project, the amount of the Government's contribution, or any item of allowable cost which is expressly designated "allowable maximum".

Dated June 23, 1952.

POTTER AND SIMS - OPERATOR

By [signature]

By [signature]

UNITED STATES OF AMERICA

By W. H. King
Executive Officer - DMEA

GCS
7/2/52

APPROVAL OF SUBCONTRACT

To: Potter and Sims

That certain contract, six copies of which you have submitted with your request for approval, dated June 12, 1952, between you and Boyles Bros. Drilling Company for the performance of the following work: To drill, or cause to be drilled, approximately 3000 linear feet of holes from surface sites near Madrid, New Mexico, which is all or a specific element of the work described in an Exploration Project Contract dated May 6, 1952, Idm-E-310, Docket No. DMEA 1387, is hereby approved by the United States of America, subject to all of the terms and conditions relating to such independent contracts set forth in said Exploration Project Contract.

Dated: June 25, 1952.

THE UNITED STATES OF AMERICA

By W. H. King
Executive Officer - DMEA
Field Team, Region IV

THIS AGREEMENT, made and entered into this 12th day of June, 1952, by and between POTTER AND SIMS, (hereinafter referred to as "The Company"), OF THE FIRST PART, and BOYLES BROS. DRILLING COMPANY, a corporation with its principal place of business at Salt Lake City, Utah, (hereinafter referred to as "The Contractor"), OF THE SECOND PART.

WHEREAS the Company has requested the Contractor and the Contractor has agreed to perform certain drilling and other services as hereinafter set forth, subject always to the terms, conditions and provisions herein contained.

NOW THIS AGREEMENT WITNESSETH that in consideration of the payment of the amounts herein stipulated and in consideration of the mutual covenants and agreements hereinafter contained, the Parties hereto herby agree as follows:

A. THE CONTRACTOR COVENANTS AND AGREES:

1. Contractor's Obligation to Drill.

To drill, or cause to be drilled, approximately 3,000 linear feet of holes from surface sites near Madrid, New Mexico. Drill sites to be located by the Company, subject to the terms and conditions and rates and prices hereinafter set forth.

2. Labor and Machinery.

To supply all necessary industrial diamonds, diamond drill machinery, power therefor, and labor; all labor, diamond wear and loss, and all other operating expenses, except as hereinafter specifically provided, shall be at the Contractor's cost and expense.

3. Size of Core and Recovery.

That all holes shall be drilled with double tube core barrels of sizes provided for in Section B and C, Clause 4 hereof, and that the drill crew shall exercise reasonable care and precaution to recover as high a percentage of core as the nature of the grounds drilled will permit, and shall deliver all such core at the drill site to the person or persons designated by the Company.

4. Depth and Measurement of Holes and Completion Thereof.

(a) That no hole shall exceed a depth of 800 linear feet, and it shall use its best endeavors to complete all holes according to the specifications of the Company, but should cavities or loose or caving material be encountered of such a

THIS AGREEMENT, made and entered into this 17th day of June, 1927, by and between [illegible] (hereinafter referred to as "the Contractor"), of [illegible] and SOVIET [illegible], DELIVER COMPANY, a corporation [illegible] of business at Salt Lake City, Utah, (hereinafter referred to as "the Owner"), WITNESSETH:

WHEREAS the Owner has requested the Contractor and the Contractor has agreed to perform certain drilling and other services on Lessing's [illegible] Farm, subject always to the terms, conditions and provisions herein contained.

NOW, THIS AGREEMENT WITNESSETH that in consideration of the agreement of the Owner herein stipulated and in consideration of the mutual covenants and agreements hereinafter set forth, the Parties hereto hereby agree as follows:

1. THE CONTRACTOR COVENANTS AND AGREES:

1. Contractor's Obligation to Drill.

To drill, or cause to be drilled, approximately [illegible] linear feet of holes from surface sites near Madrid, New Mexico. Said sites to be located by the Owner, subject to the terms and conditions and prices hereinafter set forth.

2. Labor and Machinery.

To supply all necessary industrial tools, diamond drill machinery, motor [illegible], and labor; all labor, diamond wear and loss, and all other operating expenses, except as hereinafter specifically provided, shall be at the Contractor's cost and expense.

3. Size of Core and Coverage.

The said holes shall be drilled with double tube core barrels of sizes provided for in Section 2 and 3, Clause A hereof, and that the drill crew shall exercise reasonable care and precaution to recover as high a percentage of core as the nature of the formations drilled will permit, and shall deliver all such cores at the drill site to the person or persons designated by the Owner.

4. Depth and Measurement of Holes and Completion Thereof.

(a) That no hole shall exceed [illegible] linear feet, and it shall be the best endeavors to complete all holes according to the specific [illegible] of the Company, but should cavities or fissures or other material be encountered or unusual

nature as to prevent successful completion of any hole, it does not guarantee to drill to any certain depth but shall drill as deep as practicable, under the conditions, and shall be paid for such hole or holes at the rates herein specified for all footage completed.

(b) That in the event deeper drilling is mutually desirable, such drilling shall be performed under conditions and at such rates as may be agreed upon in a written instrument supplemental to the within agreement.

(c) That measurements of all holes shall be from the original contour of the ground except in such cases where the Company prepares drill stations, in which event measurements shall be from the collar of holes.

5. Employer's Liability and Workmen's Compensation.

That it shall be subject to and operate under all applicable New Mexico enactments regarding Employer's Liability, Workmen's Compensation and Workmen's Insurance, expressly covenanting and agreeing that its employees engaged on the work herein undertaken to be done by it are not and shall not be treated or considered as the servants or employees of the Company.

6. Safety Requirements.

That in the prosecution of the work covered by this contract, it shall use such methods as are reasonably consistent with safety, both as concerns its officers, agents and employees, and the property of the Company, its officeres, agents and employees, and the public in general.

B. THE COMPANY COVENANTS AND AGREES:

1. Location of Holes and Safekeeping of Core.

That prior to any operation it shall have determined the location, depth, and angle of each hole, and shall have made provisions for the safekeeping of all cores and sludge to be recovered. It shall provide containers for the storage of said samples and shall keep such records as may be deemed advisable in respect to same.

2. Drilling Under Extraordinary Conditions.

That in the event it becomes necessary to drill from any location where barges or the driving of piles are required for foundation, it will furnish and supply all such foundations to the satisfaction of the Contractor.

[illegible] to prevent successful completion of any [illegible], it does not undertake to drill to the contract depth, but will drill as deep as is practicable, under the conditions and shall be paid for actual hole or holes at the above foreign specified [illegible] rates.

(b) This in the event deeper drilling is [illegible] by Contractor, such drilling will be performed under conditions and in such order as may be agreed upon in a written instrument supplemental to the existing contract.

(c) [illegible] requirements of all Italian agencies [illegible] the drilling of wells in the ground except in such cases where the Contractor's [illegible] drill at times in to obtain measurements [illegible] from the [illegible] holes.

3. [illegible] Liability and Insurance Obligations.

Just it would be subject to and responsible under all applicable laws [illegible] and [illegible] Insurance, [illegible] and [illegible] the [illegible] foreign workmen employed in the [illegible] foreign workmen in the Contract and shall not be treated as [illegible] the [illegible] of the Contract.

C. [illegible] Conditions.

That in the [illegible] of the work covered by this contract, it will use such [illegible] as are reasonably consistent with [illegible], take a comprehensive [illegible] and [illegible], and the property, of the Government, [illegible] and [illegible] in [illegible].

4. [illegible] Provisions.

1. [illegible] of [illegible] and [illegible] of Work.

Just prior to any [illegible] it will [illegible] the [illegible], [illegible] and [illegible] of [illegible] shall have made [illegible] for the [illegible] of [illegible] cases any [illegible] be [illegible]. It will provide [illegible] the [illegible] a [illegible] and shall keep such records as may be deemed [illegible] necessary to [illegible].

2. Drilling under [illegible] Conditions.

Just in the event it [illegible] necessary to drill [illegible] [illegible] the [illegible] of [illegible] [illegible] [illegible], it will [illegible] [illegible] all such [illegible] to the satisfaction of the Contractor.

3. Indemnity for Delays.

That it will save harmless and indemnify the Contractor for and against any delays caused through or by any negligence or fault on its part, its officers or employees, to the extent and in the amount of all labor and expense bills incurred by the Contractor during and by reason of such delays, provided, however, that in the case of underground or surface drilling where the Company supplies power for drilling, the Contractor agrees to accept the usual mine operating conditions, relieving the Company of liability for loss of time occasioned by power interruptions or occasioned by any other cause beyond the Company's control.

4. Rates for Drilling:

That payment for all footage completed shall be made according to the following schedule:

(a) For mobilization and demobilization of men and equipment from Salt Lake City and Return: $1,000.00

(b) For pipe, driving through overburden: $6.10 per foot

(c) Rates for Drilling:

	AX	BX
From 0 to 400 feet	$4.90	$ 5.50 per foot
From 400 to 600 feet	5.50	6.10 per foot
From 600 to 800 feet	6.35	6.85 per foot

(d) Reaming Size AX to BX: $2.25 per foot

(e) For cementing, drilling cement: Plus cement or cement substitutes: Per Hour - $7.50.

(f) Roads, drill stations to be supplied free of charge to the contractor.

5. Water and Water Supply Line.

That it will furnish an ample supply of water for drilling purposes, and that it will be the Contractor's obligation to lay and maintain the water line and to furnish sufficient water pumping equipment as may be necessary to pump water from the source of supply to drill sites, or to haul water from nearest source, should the supply be insufficient.

6. Terms of Payment.

That it will make payments to the Contractor at the rates and according to the terms herein specified, monthly within ten days after presentation of invoice.

7. Occupation of Streets, Alleys, and Public Places.

2. Indemnity for Delays.

That it will save harmless and indemnify the Contractor for and against any delays caused through or by any negligence or fault on its part, its officers or employees, to the extent and in the amount of all labor and expense bills incurred by the Contractor during and by reason of such delays, provided, however, that in the case of underground or surface drilling where the Company supplies water for drilling, the Contractor agrees to accept as a usual mine operating conditions, relieving the Company of liability for loss of time occasioned by power interruptions or occasioned by any other cause beyond the Company's control.

4. Rates for Drilling.

That payment for all footage completed shall be made according to the following schedule:

[illegible] o [illegible] other.

5. Water and Water Supply Line.

That it will furnish an ample supply of water for drilling purposes, and that it will be the Contractor's obligation to lay and maintain the water line and to furnish sufficient water pumping equipment as may be necessary to pump water from the source of supply to drill sites, or to haul water from remote sources, should the supply be insufficient.

6. Terms of Payment.

That it will make payments to the Contractor at the rates and according to the terms herein specified, monthly within ten days after payment time of invoice.

7. Occupation of Streets, Alleys, and Public Places.

That whenever, in the performance of the work hereunder or in preparation for same, it may be necessary to occupy, use or obstruct any street, highway, private way or public place, or to do anything whatever in connection with public property or whenever it shall be necessary in order to comply with building laws or local, state or national ordinances, laws or regulations, it shall procure, free of all cost and expense to the Contractor, all necessary permits or permission therefor; and that it shall indemnify and save harmless the Contractor from and against all liability, costs or expenses resulting from the failure to secure such permits or permission.

8. Right of Entry and Removal of Property.

(a) To provide at its own expense all rights of way, both of engress and egress, and the peaceable possession of all real property that may be required in connection with said work including real property upon which all necessary temporary buildings and other facilities may be erected, or placed, and to save the Contractor harmless from any and all damages, claims, demands, costs or charges of whatsoever kind or character incident to the occupation and use of said real property.

(b) That upon completion of such work by the Contractor, the Contractor shall have the right to remove, within a reasonable length of time, all temporary, buildings, and other fixtures, trade fixtures, machinery, equipment, appliances and facilities placed upon such real property.

C. IT IS MUTUALLY UNDERSTOOD AND AGREED BY AND BETWEEN THE PERTIES HERETO AS FOLLOWS:

1. Boarding and Housing of Crews.

That the Contractor will provide boarding and housing facilities for its crews at no cost to the Company.

2. Commencement and Execution of Work.

Work under this agreement shall commence within fifteen days of notification to proceed, and shall be continued diligently until completed.

3. Force Majeure.

That neither party to this agreement shall be liable for any loss or damage caused by reason of strikes, accidents, acts of God, action of the elements, or any other caused beyond its control.

That concerns, in the performance of the work undertaken or in preparation for going, it may be necessary to occupy, use or demolish any street, highway, private way or public place, or to do anything whatever in connection with public property or otherwise, it shall be necessary in order to comply with building laws or legal obligations or national requirements, rules or regulations, to which procure, have or fill conditions precedent to the undertaking, all necessary permits or permissions and both it shall indemnify and save harmless the Contractor from and against all liability, costs or expenses resulting from the failure to secure such rights or permissions.

5. Right of Entry and Removal of Property.

(a) The proprietors hereby expressly grant all rights to enter, occupy and access, for the necessary prosecution of all such property that may be required in connection with such work including real property upon which all necessary equipment buildings and other facilities may be erected, or placed, and to give the Contractor unrestricted access and all degrees, claims, demands, costs or charges of whatever kind or character incident to the occupation and use of said real property.

(b) Upon upon completion of such work by the Contractor, the Contractor shall have the right to remove within a reasonable length of time, all buildings, buildings and other fixtures, tanks, fixtures, machinery, equipment, appliances and facilities placed upon such real property.

6. INDIA RUBBER TUBE TOOL AND [illegible]

[illegible] TYPICAL:

1. Operating and Handling of Tools.

That the Contractor will provide competent and trained [illegible] to operate at no cost to the Company.

2. Commencement and Execution of Work.

Work under this agreement shall commence within fifteen days of notification to commence, and shall be continued diligently until completed.

3. Force Majeure.

That neither party to this agreement shall be liable for any loss or damage caused by reason of strikes, accidents, acts of God, action of the elements, or any other cause beyond its control.

4. Supplemental Agreement.

That no representations, promises, agreements or understandings other than those contained herein shall be binding upon the parties hereto, except where the same are set forth under a written instrument supplemental to or superseding the within agreement and such instrument shall be duly executed by the parties hereto.

5. Notice.

(a) Any notice required to be given by the Company shall be in writing and shall be properly given if such writing is delivered personally to or mailed by registered mail addressed to the Contractor as follows:

Boyles Bros. Drilling Company
1321 South Main Street
Salt Lake City 4, Utah

(b) Any notice required to be given by the Contractor shall be in writing and shall be properly given if such writing is delivered personally to or mailed by registered mail addressed to the Company as follows:

Potter and Sims
G. R. Griswold
1500 Las Lomas Road
Albuquerque, New Mexico

6. Laws Applicable.

This agreement shall be interpreted and any dispute arising hereunder shall be determined in accordance with the laws of the State of Utah.

7. Assignments.

This agreement shall be binding upon and shall insure to the benefit of the parties hereto, their respective successors and assignees, provided, however, that the same shall not be assignable by the Company until the consent in writing of the Contractor shall have first been had and obtained thereto.

6. Shareholders' Agreement.

Subject to the provisions hereinafter, whereunder an underwriting agreement of a type and on such terms and conditions as shall be mutually agreed between the Company and the Lead Underwriter, shall be entered into, such agreement shall be duly executed by the parties hereto.

7. Notice.

(a) Any notice required to be given by the Company shall be in writing and shall be properly given if such notice is duly addressed personally to the Directors or registered and addressed to the Company as follows:

Lovlea Hse. Drilling Company

1321 South Main Street

Salt Lake City, Utah

(b) Any notice required to be given by the Underwriter shall be in writing and shall be properly given if such notice is duly addressed personally to the Company or registered and addressed to the Company as follows:

[illegible] and Sons

[illegible]

[illegible]

Lamoureux, New Mexico

8. Terms Applicable.

This agreement shall be interpreted and the rights and liabilities of the parties shall be determined in accordance with the laws of the State of [illegible].

9. Assignments.

This agreement and shall be binding upon and shall inure to the benefit of the parties hereto, their respective successors and assignees, provided, however, that the same shall not be assignable by the Company until the closing of the Units covered shall have first been had and obtained thereon.

IN WITNESS WHEREOF the Agreement has been executed in quadruplicate by the parties hereto the day and the year first herein written.

ATTEST:

Louella B. Morgan

BOYLES BROS. DRILLING COMPANY

R. J. Goldsworthy

ATTEST:

Lucile K. Childers

POTTER AND SIMS

S. R. Griswold

MF-208
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DEA 1387

COMMODITY Tungsten

Idm-E-310
Government's Copy

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

EXPLORATION PROJECT CONTRACT [1]

IT IS AGREED this 6th day of May, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Potter and Sims, a partnership doing business as Potter and Sims, P. O. Box 229, Joplin, Missouri,

hereinafter called the "Operator," as follows:

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

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

(See Annex 1, attached to and made a part of this contract)

the Operator represents and undertakes: [4]

~~(a) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances, or to the following agreement or lease:~~

(b) That the Operator is a lessee, in possession and entitled to possession, and the Landlord's Subordination Agreement is attached.

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

ARTICLE 3. *Exploration project.*—The Operator, within 30 days from the date of this contract shall commence work on a project of exploration for [5] tungsten

in or upon the described land; and shall bring the project to completion within a period of 12 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(b) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(c) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(a) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the 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 and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related initial allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—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.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

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

(*b*) The Government's payment in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) 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 this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

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

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

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 75 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $58,140.00, which is 75 percent of $77,520.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

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

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

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

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

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

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

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

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator 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 at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* ----------

Executed in sextuplicate the day and year first above written.

Potter and Sims - Operator

By [signature] Partner

By [signature] Partner

THE UNITED STATES OF AMERICA

By [signature]
Acting Administrator
Defense Minerals Exploration
Administration

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]

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ANNEX I

The Cunningham Hill breccia area and its extensions situated on and adjacent to Cunningham Hill in unsurveyed T. 13 N., Rs. 7 and 8 E., N.M.P.M., in the Ortiz Mine Grant which covers nearly all of unsurveyed T. 13 N., R. 8 E.; the southern part of T. 14 N., R. 8 E.; the southern half of T. 13 N., R. 7 E., and the northern halves of T. 12 N., R. 7 E., and T. 12 N., R. 8 E. (See Fig. 1 and Fig. 3 attached hereto.)

The Cunningham Hill breccia area is also described as a tract of land consisting of approximately 41 acres lying within the boundaries of the Ortiz Mine Grant, Santa Fe County, New Mexico, the center of said tract lying 28,700 feet S. 8°-50' W.from the southwest closing corner of Section 29, T. 14 N., R. 8 E., N.M.P.M.

A description of the land is also contained in the lease dated May 26, 1951, between Fay F. Potter and George W. Potter.

EXPLORATION PROJECT CONTRACT
POTTER & SIMS
CUNNINGHAM HILL AREA
DOCKET NO. DMEA-1387X

EXHIBIT "A"

Description of the Work

Stage I 1/

Time Schedule: 3 months

1. Construct a roadway and/or skid trail or pack trail, and prepare drill sites necessary for the proposed diamond drilling as outlined below. The preliminary part of the road or trail work will be for Stage I, and its type and location shall anticipate the possible drill sites that may be needed in Stage II, which sites will be dependent upon the results obtained by the drilling of Stage I.

2. Drill by contract a maximum of 7 BX diamond drill holes, not to exceed 4,000 feet in aggregate length, to explore the central part of the Cunningham Hill breccia, as shown on the attached map. The diamond drill holes are to be collared in approximately the following locations and drilled to the designated approximate depths, the deeper holes reaching the elevation of 6,550 f. a. s., and the shallower ones being stopped at a depth of 300 feet unless tungsten mineralization is such that further drilling to depth is definitely warranted:

Hole No. 1. Drill in the vicinity of the Operator's proposed hole #14 to an approximate depth of 565 feet.

Hole No. 2. Drill in the vicinity of the Operator's proposed hole #16 to an approximate depth of 300 feet.

Hole No. 3. Drill approximately 250 feet southwest of the Operator's proposed hole #7 to an approximate depth of 570 feet in the narrow part of the small, intensely brecciated area shown on the map.

Hole No. 4. Drill approximately 150 feet N 30° W of the Operator's proposed hole #3 to an approximate depth of 300 feet.

1/ All subcontracts are subject to prior written approval by the Government.

Hole No. 5. Drill approximately midway between the Operator's proposed hole #8 and the old churn drill hole shown at the road near the south boundary of the brecciated, gold-bearing area to an approximate depth of 650 feet.

Hole No. 6. Drill in the vicinity of the north end of the north drift on the west side of the larger, intensely brecciated area to an approximate depth of 300 feet.

Hole No. 7. Drill approximately 100 feet south of the Operator's proposed hole #9 and just within the east boundary of the intensely brecciated gold-bearing area to an approximate depth of 715 feet.

Stage II 2/

Time Schedule: 4 to 6 months

Stage II will be undertaken only after completion of Stage I to the satisfaction of and approval by the Government, dependent upon the results of Stage I.

1. Complete the road or trail work and drill site preparation necessary for the drilling noted below.

2. Drill by contract a maximum of 7 BX diamond drill holes, not to exceed 4,000 feet in aggregate length, to explore the boundaries of the brecciated area. The location of the holes and their individual depths are to be agreeable to the Government (Field Team) prior to drilling, and if warranted, are primarily to be drilled to expand the tonnage inferred by the drilling of Stage I. This can probably best be done by staggering some of the holes near the boundaries of the widest part of the breccia.

Estimated Costs of the Project
(* Indicates allowable maximum)

(1) Independent Contracts

Stage I

4,000 feet of diamond drilling @ $7.00/ft.* (includes the cost of water, and all other costs)	$28,000.00*

2/ All subcontracts are subject to prior written approval by the Government.

Stage II		
4,000 feet of diamond drilling @ $7.00/ft.* (includes the cost of water, and all other costs)		$28,000.00*

(2) Labor, Supervision, Consultants

Stage I		
1 Sampler @ $350.00/mo., 3 months	$1,050.00*	
1 Laborer @ $200.00/mo., 3 months	600.00	
1 Supervisor 3/ @ $500.00/mo., 3 months	1,500.00*	3,150.00*
Stage II		
1 Sampler @ $350.00/mo., 3 months	1,050.00*	
1 Laborer @ $200.00/mo., 3 months	600.00	
1 Supervisor 3/ @ $500.00.,3 months	1,500.00*	3,150.00*

(3) Operating materials and supplies

Stage I		
Core boxes	350.00	
Gasoline and oil for car, 3 months	150.00	
Gasoline and oil for truck, 3 months	180.00	680.00
Stage II		
Core boxes	350.00	
Gasoline and oil for car, 3 months	150.00	
Gasoline and oil for truck, 3 months	180.00	680.00

3/ The supervisor shall direct the operation and shall be responsible for securing representative samples of the deposits, where warranted, and their subsequent handling. He also shall prepare the logs of the drill holes and the mine and geologic maps ordinarily necessary for this type of exploration project.

(4) Operating equipment

To be purchased

Stage I

1 Core splitter		$ 120.00

Stage II

None

To be furnished by Operator

Stage I

1 4-wheel drive truck valued at $600.00, depreciation @ $10.00/ mo., 3 months	$ 30.00*	
1 Plymouth sedan, 1951 valued @ $1,500.00, depreciation @ $25.00/ mo., 3 months	75.00*	105.00*

Stage II

1 4-wheel drive truck valued at $600.00, depreciation @ $10.00/ mo., 3 months	30.00*	
1 Plymouth sedan, 1951 valued @ $1,500.00, depreciation @ $25.00/ mo., 3 months	75.00*	105.00*

(5) Rehabilitation and repairs

None

(6) New buildings, improvements, installations

None

(7) Miscellaneous

Stages I and II

All labor, materials and supplies for road and/or trail work and preparation of drill sites	4,000.00*

Stage I

Rental of office in Cerrillos @ $50.00 per month, 3 months	$ 150.00*	
Sustenance for supervisor @ $50.00/ mo., 3 months	150.00*	
800 WO_3 assays, including transportation, @ $4.25 each	3,400.00	
50 gold assays @ $1.00 each	50.00	
Check analysis for WO_3 by Ledoux & Co.	850.00	
Repair and maintenance of car, 3 months 4/	75.00	
Repair and maintenance of truck, 3 months 4/	90.00	$ 4,765.00*

Stage II

Rental of office in Cerrillos @ $50.00 per month, 3 months	150.00*	
Sustenance for supervisor @ $50.00/ mo., 3 months	150.00*	
800 WO_3 assays, including transportation, @ $4.25 each	3,400.00	
50 gold assays @ $1.00 each	50.00	
Check analysis for WO_3 by Ledoux & Co.	850.00	
Repair and maintenance of car, 3 months 4/	75.00	
Repair and maintenance of truck, 3 months 4/	90.00	4,765.00*

4/ The repair and maintenance items are to be charged against the project only as incurred and spent while the equipment is working on the project.

(8) Contingencies

Stages I and II

None

TOTAL ESTIMATED COST OF PROJECT	$77,520.00*
GOVERNMENT PARTICIPATION @ 75%	$58,140.00*

SUMMARY OF COSTS

Stage I

(1) Independent Contracts	$28,000.00
(2) Labor, Supervision, Consultants	3,150.00
(3) Operating Materials & Supplies	680.00
(4) Operating Equipment	225.00
(7) Miscellaneous	4,765.00 5/
Total cost, Stage I, exclusive of road construction	$36,820.00 5/

Stage II

(1) Independent Contracts	$28,000.00
(2) Labor, Supervision, Consultants	3,150.00
(3) Operating Materials & Supplies	680.00
(4) Operating Equipment	105.00
(7) Miscellaneous	4,765.00 5/
	$36,700.00 5/

5/ Costs of road or trail work applicable, to Stages I & II, not included in this figure.	$ 4,000.00
TOTAL ESTIMATED COST OF PROJECT	$77,520.00
GOVERNMENT PARTICIPATION @ 75%	$58,140.00

Joplin, Missouri
March 28, 1952

In reference to MF-202 the date of the "Exploration Project Contract" is left in blank, for the reason the same as yet has not been made. Simultaneous with approval of the contract by applicant and the United States, the subordination agreement will be appropriately dated and if necessary re-executed at this later date. If this is not a satisfactory compliance with present requirements kindly return with the additional requests.

Ralph Baird

Ralph Baird
Attorney in fact for Fay F. Potter

MF-202

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner in fee simple* of that certain parcel of ground in the county of Santa Fe, State of New Mexico, described in a certain Exploration Project Contract dated May 6, 1952, between Potter and Sims, a partnership composed of Geo. W. Potter and Dewey Sims the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated 26 May 1951, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

The undersigned further agrees that if said leasehold interest should be surrendered or if said lease should terminate at any time prior to the expiration of the rights of the United States of America under said Exploration Project Contract, the undersigned shall assume and does hereby assume all of the obligations of the Lessee under said Exploration Project Contract to make repayment to the United States of America according to the terms of said contract; and

The undersigned agrees to commit no act, nor assert any claim under judicial process or otherwise that may contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this 28th day of March, 1952.

* the metals and minerals estate owned as more fully described hereunder with certain secondary surface rights previously conveyed

Fay F. Potter

By: Ralph Baird her attorney in fact with power attached hereto.

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* oil, gas, coal, metals and minerals in, on or under the surface of the lands, and all the rights of ownership therein, and the right and license of exploring, mining, developing or operating for any, or all of said products, upon said lands, and of erecting thereon all necessary buildings, pipe lines, machinery and equipment necessary in and about the business of mining, developing, or operating, for any of said products, to the same and with the full rights of an owner operating on his own land.

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That I, Fay F. Potter, of Joplin, Jasper County, Missouri, being about to depart from the United States for travel abroad, hereby appoint Ralph Baird of Joplin, Jasper County, Missouri, my true and lawful attorney in my name and on my behalf to do and execute all or any of the following acts, deeds and things, that is to say:

To enter into and sign, sell, execute, acknowledge, and deliver any contracts or other instruments whatsoever pertaining to MF-202 "Landowners Subordination Agreement" or revised form MF-202 "Owners Consent to Lien", or any revisions, alterations, replacements or successor forms thereto, or any contracts, instruments or forms to be signed by me as owner and lessor of the mineral deposit made subject to an Application for Aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950, on the Ortiz Mine Grant, Santa Fe County, New Mexico, or upon any additional or altered applications for aid upon said lands.

And I, the said Fay F. Potter, hereby ratify and confirm and promise at all times to ratify and confirm all and whatsoever my attorney, whether the said Ralph Baird, or any attorney hereunder substituted, shall lawfully do or cause to be done in the foregoing premises by virtue of these presents, including anything which shall be done hereunder between the revocation of these presents in any manner and notice of such revocation reaching my attorney; and I hereby declare that as against me and all persons claiming under me everything which my attorney shall do or cause to be done in pursuance hereof after such revocation as aforesaid shall be valid and effectual in favor of any person, government, governmental agency, board, bureau or administration, claiming the benefit thereof, who before the doing thereof shall not have had notice of such revocation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the 27th day of December, 1951.

COUNTY OF JASPER)
)ss.
STATE OF MISSOURI)

Fay F. Potter
Fay F. Potter

BE IT REMEMBERED, That on this 27th day of December, 1951, before me, personally appeared Fay F. Potter, to me known to be the person described in and who executed the foregoing Power of Attorney, and acknowledged that she executed the same as her free act and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my notarial seal at my office in said county the day and year last above written.

My term expires:
My commission expires Sept. 8, 1952,

Harry T. Wilkerson
Notary Public

#1-of 6.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

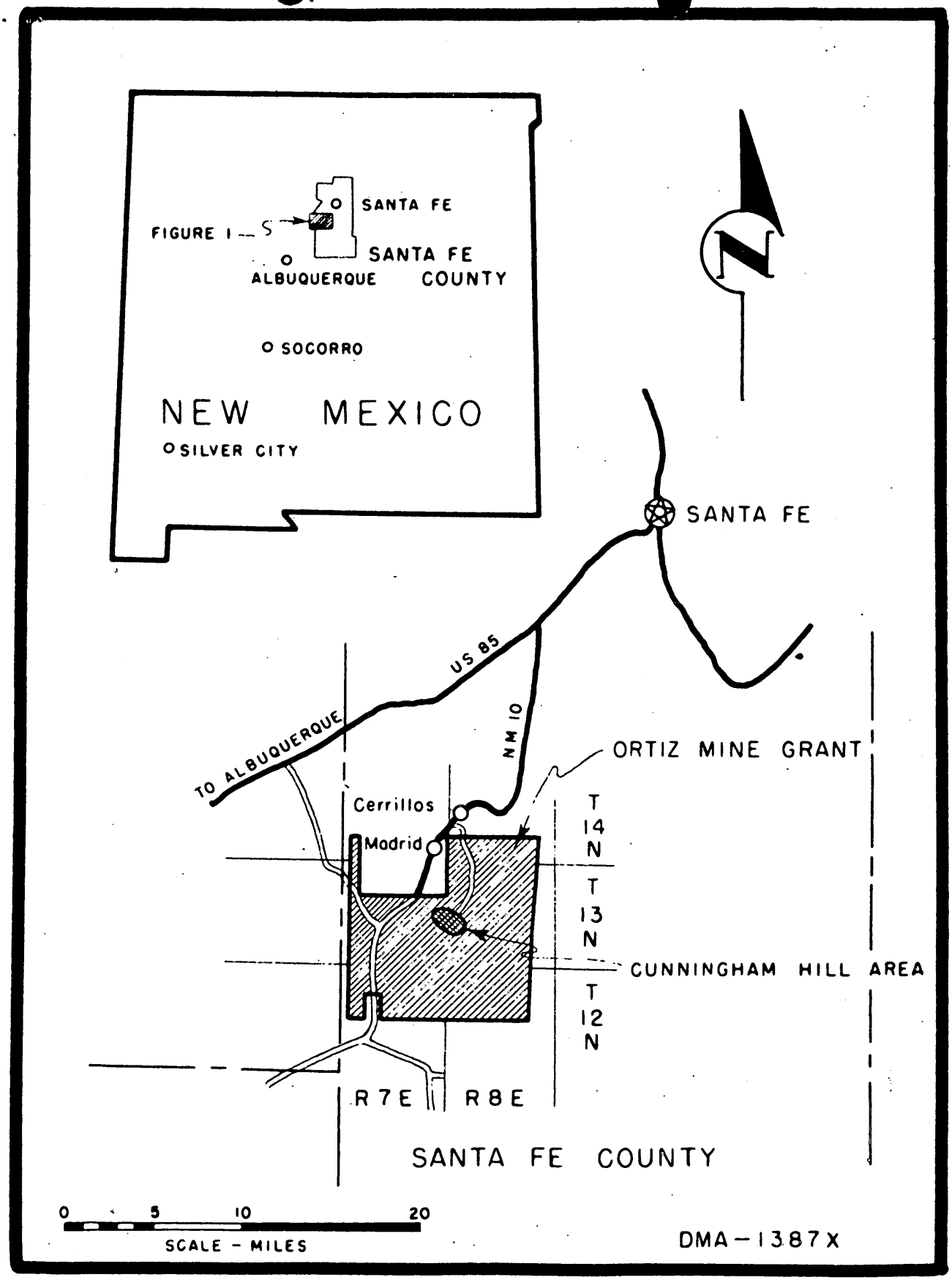
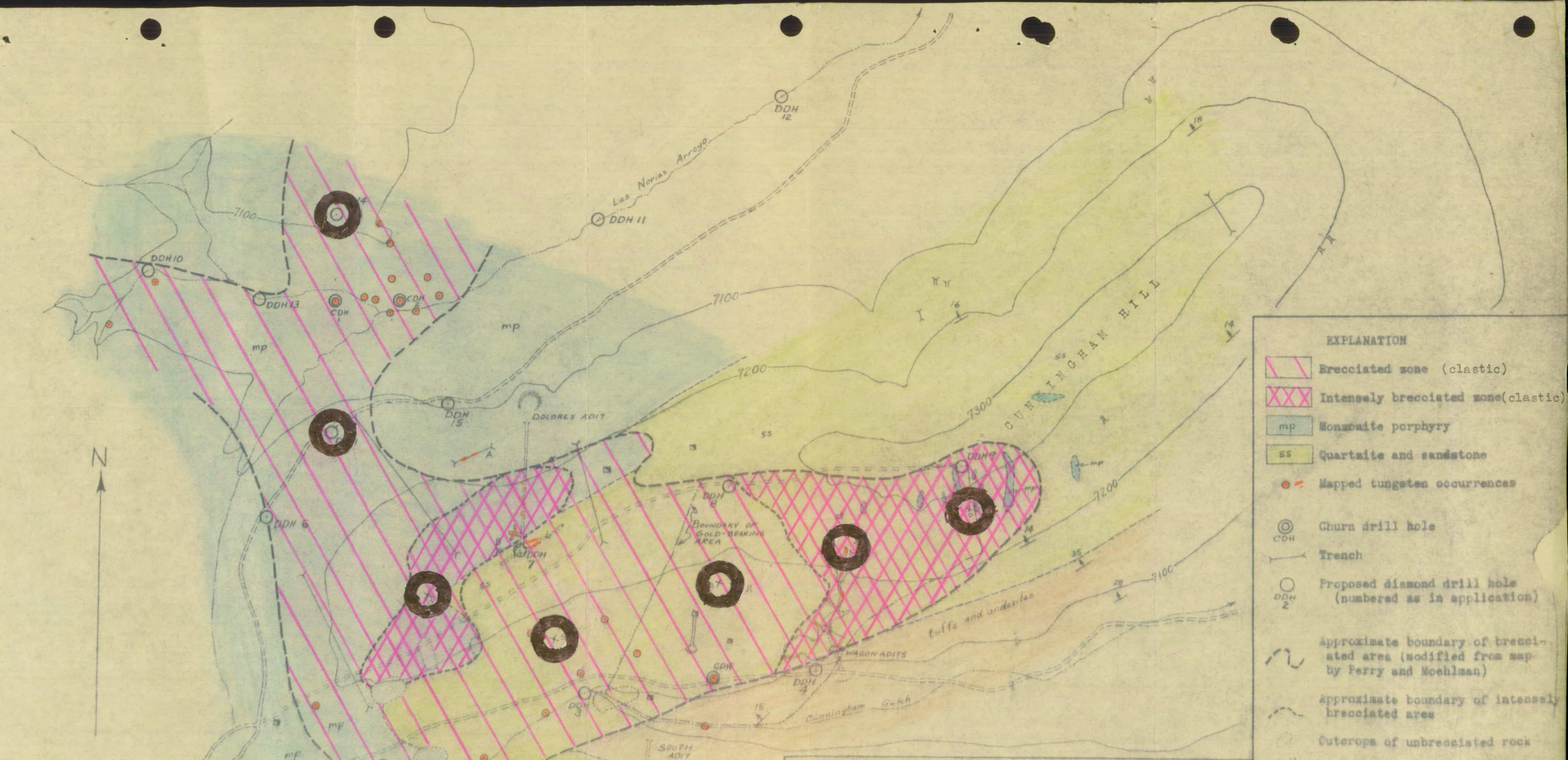


FIGURE 1 – LOCATION MAP, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEX.



GEOLOGIC MAP, CUNNINGHAM HILL TUNGSTEN AREA
ORTIZ GRANT, SANTA FE COUNTY, NEW MEXICO
(Geology modified from map by V. D. Perry and R. S. Moehlman, 1938. Base by G. R. Grimwold)

0 50 100 200 300 400 500 Feet

Scale: 1 inch = 200 feet

FIGURE 3 DMA 1387x

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 2 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
2 1952

XXX

ASSIGNMENT

KNOW ALL MEN BY THESE PRESENTS:

For and in consideration of the sum of Ten Dollars ($10.00) in hand paid, the receipt of which is acknowledged and for and in consideration of other good and valuable considerations which have been received, the within and foregoing lease is hereby assigned by GEORGE W. POTTER to GEORGE W. POTTER and DEWEY SIMS, a co-partnership doing business as POTTER & SIMS, their heirs, successors or assigns, subject to all of the terms, conditions and provisions and royalties thereof.

It is further understood and agreed that ASSIGNOR shall give to ASSIGNEES and ASSIGNEES shall give to ASSIGNOR a true copy of any and all notices received from LESSOR concerning this Lease.

This assignment relates to a Lease given by FAY. F. POTTER of Joplin, Missouri, as LESSOR to GEORGE W. POTTER of Joplin, Missouri, as LESSEE, dated the 26th day of May, 1951, and covering an estate in land situate in the Ortiz Mining Grant, County of Santa Fe, State of New Mexico.

IN TESTIMONY WHEREOF, the said GEORGE W. POTTER has hereunto set his hand this 28th day of May, 1951, and POTTER & SIMS has caused these presents to be signed in its name to indicate its acceptance of the assignment by a partner thereunto duly authorized.

_____
ASSIGNOR

Accepted:

POTTER & SIMS

By_____
Partner
ASSIGNEE

STATE OF MISSOURI)
) ss.
COUNTY OF JASPER)

On this 28th day of May, 1951, before me personally appeared GEORGE W. POTTER, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My commission as a notary public will expire:

_____
Notary Public

I, the undersigned FAY F. POTTER, the LESSOR in the Lease above referred to and assigned, do hereby assent by this writing to the Assignment and permit said Assignment subject to all of the terms, conditions, provisions and royalties in said Lease therein contained to be accepted by GEORGE W. POTTER and DEWEY SIMS, a co-partnership doing business as POTTER & SIMS.

Dated at Joplin, Missouri, this 28th day of May, 1951.

_____
Lessor

EXHIBIT "B"

STATE OF MISSOURI)
)ss.
COUNTY OF JASPER)

On this 28th day of May, 1951, before me personally appeared FAY F. POTTER, to me known to be the person described in and who executed the foregoing instrument and acknowledged that she executed the same as her free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My commission as notary public will expire:

_____
Notary Public

MINING LEASE

BY THIS INDENTURE, Made and entered into at Joplin in Jasper County, Missouri, on this 26th day of May, 1951, by and between FAY F. POTTER, of Joplin, Missouri, hereinafter referred to as LESSOR, and GEORGE W. POTTER, of Joplin, Missouri, hereinafter referred to as LESSEE, WITNESSETH:

The said LESSOR and LESSEE do hereby recite as prevailing conditions affecting the provisions of this said Indenture that they are husband and wife, that each of them and their said marriage was at all preceding time herein mentioned domiciled in the State of Missouri, and that in the year 1945, the said LESSOR acquired the estate herein demised as her separate property and that the consideration for the acquisition of said estate was paid from monies belonging to her as her separate property, and that subsequent to such acquisition said LESSOR entered into a lease with LESSEE whereby the LESSEE acquired the exclusive right and privilege of mining and developing said property for metals, minerals, oils, waters and surface or sub-surface benefits and that said LESSOR and LESSEE are mutually desirous of entering into this lease, and,

THEREFORE, the said LESSEE in consideration of the royalties to be paid and the covenants to be observed as hereinafter set forth does hereby grant and lease unto the LESSEE, the exclusive right and privilege to mine and dispose of all minerals, metallic and non-metallic, oils and gas and any and all recoverable benefits, in, upon, or under the following described estate in land situate in the Ortiz Mining Grant, County of Santa Fe, State of New Mexico, described as follows:

> The reservation held by LESSOR of all the oil, gas, coal, metals and minerals, and all the rights of ownership and license of exploring, mining, developing or operating for any and all of said products, and of erecting all necessary buildings, pipe lines, machinery and equipment necessary in and about the business of

mining, developing or operating for any of said products, in, on or under the surface of The Ortiz Mine Grant located in Township 12, 13 and 14 North of Ranges 7 and 8 East of the N.M.P.M., in Santa Fe County, New Mexico, as described in the field notes in the United States Public Survey Office at Santa Fe, New Mexico, excepting therefrom the following:

EXCEPTION NUMBER 1. So much of the United States Mineral Surveys Nos. 1214, 400 and 1361, as may be in conflict with the Ortiz Mine Grant Surveys, this exception covering 48.55 acres, more or less.

EXCEPTION NUMBER 2. A tract of land in the southwesterly portion of said grant described upon a blue-print plat filed in the office of the County Clerk of Santa Fe County, New Mexico, surveyed by J. D. Sena, Jr., in August and September, 1941, and more particularly described as follows: Beginning at a point on the South Boundary of the Ortiz Mine Grant, whence the closing corner of Sections 14 and 15, Twp. 12 N., R. 7 E., N.M.P.M., bears S. 89 deg. 42 Min. W., 159.2 feet distant; thence from said beginning point S 89 Deg. 42' W., 16,278.2 feet along the South Boundary of said Grant to a point whence the closing corner of Sections 17 and 18; Twp. 12 N. R. 7 E., bears N. 89 deg. 42' E. 246.7 feet distant; thence N. 12 deg. 00' W., 233.0 feet to a point; thence N. 34 deg. 02' E., 268.5 feet to a point; thence S. 70 deg. 00' E., 669.8 feet to a point; thence N. 35 deg. 21' E., 552.0 feet to a point; thence N. 76 deg 40' E., 272.4 feet to a point on the West Boundary of the Canon del Agua Grant; thence N. 00 deg. 09' E., along the West Boundary of the Canon del Agua Grant to its N. W. Cor., thence S. 89 deg. 55' E., 2303.9 feet along the North Boundary of said Canon del Agua Grant to a point; thence N. 25 deg. 03' W., 425.3 feet to a point; thence N. 8 deg. 21' E., 3390.6 feet to a point; thence S. 77 deg. 00' E., 599.6 feet to a point; thence N. 06 deg. 51 min., E., 200.0 feet to a point; thence N. 89 deg. 57' E., 5360 feet to a point; thence S. 00 deg. 03' E., 3548 feet to a point; thence S. 83 deg. 22' E., 6400 feet to a point; thence South 941.3 feet to the point and place of beginning. This exception containing 1044.34 acres, more or less.

EXCEPTION NUMBER 3. Three certain tracts of land commonly known respectively as the Black Prince Lode, the Ohio Lode and the Illinois Lode, more particularly described in a certain deed from New Mexico Mining Company to James M. Locan and A. B. Renehan, which deed is recorded in Book J-1 of Deeds, at Page 314 in the records of Santa Fe County, New Mexico, and a certain other tract of land commonly known as the Lucas Mill Site, more particularly described in a certain deed from New Mexico Mining Company to James M. Lucas and A. B. Renehan, which deed is recorded in Book K-M of Deeds at page 602 in the records of Santa Fe, County, New Mexico. The combined area of the above described four tracts is 54.555 acres, more or less, and the above mentioned records of Santa Fe County, New Mexico are hereby referred to for a more particular description thereof.

EXCEPTION NUMBER 4. One certain tract of land located in the extreme Northwest corner of said Ortiz Mine Grant, and heretofore conveyed to Cerillos Coal and Iron Company, which tract consists of 15,026.06 acres, more or less, and is more particularly described in a certain deed from Jerome B. Chaffee and Stephen B. Elkins to Cerrillos Coal and Iron Company, which deed is recorded in Book N of Deeds at Page 34 of the records of Santa Fe County, New Mexico, said records being hereby referred to for a more particular description of said tract.

EXCEPTION NUMBER 5. Such areas as are occupied by rights-of-way of Public Highways and the Atchison, Topeka & Santa Fe Railway.

The foregoing described tract of land, after deducting therefrom the exceptions, contains a net area of approximately 57,267.04 acres.

ALL SUBJECT to a certain mining lease described as the "New Live Oak Claim", dated the 1st day of October, 1922, wherein the New Mexico Mining Company, a corporation, and Galisteo Company, a corporation, are the lessors and John W. Akers, G. L. Brooks, Willard S. Trickler and Ralph Kinsell, are lessees, for a period of sixty-three (63) years from the date thereof, covering as in said lease described.

That tract of land situate within the survey limits of the Ortiz Mine Grant in the County of Santa Fe and State of New Mexico, and near the eastern end of the Ortiz Range of mountains, embracing part of a certain lode of mineral bearing rock sometimes called the New Live Oak Claim, and bounded and described as follows, to-wit:

Beginning at the East and center, which point is on the boundary of the Kenton Mining Claim, whence the most easterly shaft of the Benton or Santa Fe Claim bears S. 50 deg. 44' E., 854 feet dist., and the Southwest corner of said claims bears S. 40 deg. 25' E., 918.0 ft. dist., thence S. 59 deg. 22' W., 155.0 feet to the southwest corner; thence N. 47 deg. 30' W., 510 feet., thence S. 80 deg. 15' W. 635.0 feet to the southwest corner; thence N. 9 deg. 45' W., 300.0 ft. to the Northwest corner; thence N. 80 deg. 15' E., 775.0 ft; thence S. 47 deg. 30' E., to the inter-section of the north boundary of the Kenton Claim, which is the southeast corner of this claim; thence with the boundary of the Kenton Claim S. 59 deg. 22' W., 155.0 ft. to the point of beginning, which lease was filed for record on the 1st day of April, 1930, and was duly recorded in Book D of Contracts, page 524, of the Records of Santa Fe County, New Mexico.

TO HAVE AND TO HOLD said estate in the above described premises and all rights and privileges granted hereunder, to and unto the LESSEE for a term of ten (10) years from the date hereof, renewable as hereinafter more specifically set out, so long as oil, gas, coal, metals and minerals are recovered in commercial quantities, upon the following terms, conditions and provisions:

1. LESSEE shall immediately commence the work of mining or development of said demised premises in good faith and shall place upon the land sufficient machinery so as to accomplish the development or mining thereof and shall properly operate the same and increase the capacity thereof from time to time as shall be necessary to carry on development or operations in a good miner-like manner according to prevailing standards of New Mexico.

2. The LESSEE shall pay any and all damages to the owner or owners of the fee upon which the estate herein demised is a reservation, which may arise by reason of mining or development operations under this Lease and LESSEE agrees to take reasonable precaution in its mining operations to prevent grass, brush or forest fires, and shall abide by all rules and regulations of the United States Forest Service for the prevention and suppression of grass, brush, or forest fires.

3. LESSEE agrees to carry Workmen's Compensation Insurance and Public Liability Insurance in adequate amounts and in all events save and keep harmless the LESSOR and her heirs and assigns, from any liability whatsoever as the result of the acts of the LESSEE.

4. The LESSEE agrees to pay as royalty to the LESSOR at Joplin, Missouri, ten per cent (10%) of all monies received on all oil, gas, coal, metals and minerals produced and sold from said demised premises during the preceding month, said royalty to be based on the net mint returns of all gold recovered and not smelter returns, and to be based on the receipts from any other mineral or oil or gas or beneficial substance recovered and sold.

5. LESSEE agrees to make full settlement on the 25th day of each month for any royalties due the LESSOR for the preceding month under the terms of this Lease, and to permit the LESSOR or her agents at all reasonable hours to examine LESSEE's books relating to the production and sale of any and all oil, gas, coal, metals and

minerals or beneficial substances produced hereunder. LESSEE further agrees to submit to LESSOR annual verified reports, showing in detail LESSEE's operation on the premises herein demised for the preceding year.

6. LESSEE agrees that the LESSOR, her agents or servants shall have the right to go upon and inspect the properties at any and all reasonable times.

7. LESSEE agrees that this Lease is not assignable except with the written permission of LESSOR and that the obligations of LESSEE hereunder are to be performed by LESSEE with the aid and assistance of agents and servants, but that with the written consent of LESSOR such lease may be assigned in whole or in part upon such conditions as may then be agreed upon and expressed in writing.

8. LESSOR agrees that the LESSEE may exercise fully the reservation of interest and estate held by her in the premises demised and do any and all things incidental to the carrying on of development or mining of said demised estate for oil, gas, coal, metals and minerals and any beneficial substances, but that the LESSEE is hereby charged with notice of the character and extent of the reservation of interest and estate held by LESSOR and it is expressly understood and agreed that the said LESSEE in said mining and development operations is hereby given the right to do only such acts as the LESSOR can grant under said reservation and estate and that the right of the LESSEE to use the surface of the land herein mentioned for the purposes of this Lease are given to the extent, but as prescribed by the estate of the LESSOR.

9. After the expiration of the term of this Lease hereinbefore fixed at ten (10) years, said Lease shall continue in force and effect if oil or gas or coal or metals or minerals or beneficial substances are being produced therefrom in paying quantities for such period of time as such conditions continue to exist not exceeding fifty (50) years from the date hereof.

10. It is expressly understood and agreed that mining operations have heretofore been conducted upon the premises and LESSOR makes no representations or warrant as to the present or future condition or state of any part of said premises or fitness for use to which LESSEE may put the same and LESSEE accepts said premises in the present state and condition and assumes all responsibility and liability in connection therewith, including any defects thereon or therein apparent or hidden, discovered or undiscovered, and all risks in any wise connected with the use thereof.

11. In case of the failure of either of the parties hereto to keep and perform the terms of this Lease, the other may give ten (10) days written notice of the violation complained of, and if such violation or default shall not be removed within said period then this Lease shall, at the option of the party giving such notice, be terminated.

12. Any notice under this lease may be given to either of the parties by a letter addressed to the party at Joplin, Missouri, and deposited in the United States mails, postpaid.

13. Upon termination of this Lease, the LESSEE shall have the right to remove all machinery and structures placed upon the premises demised by the LESSEE provided all rentals and royalties are paid in full and the failure of the LESSEE to remove any structures or machinery from the premises within twelve (12) months from and after the termination of this Lease shall cause said property and machinery to become the property of LESSOR.

IN WITNESS WHEREOF, the LESSOR and the LESSEE have hereunto set their hands to four counterparts of this instrument, each of which shall be considered to be an original, this day and year first above written.

_____
Lessor

_____
Lessee

STATE OF MISSOURI)
) ss.
COUNTY OF JASPER)

On this 26th day of May, 1951, before me personally appeared FAY F. POTTER, to me known to be the person described in and who executed the foregoing instrument and acknowledged that she executed the same as her free act and deed, and declared herself to be the wife of the LESSEE therein, GEORGE W. POTTER.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My commission as notary public will expire:

_____
Notary Public

STATE OF MISSOURI)
)ss.
COUNTY OF JASPER)

On this 26th day of May, 1951, before me personally appeared GEORGE W. POTTER, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed, and declared himself to be the husband of the LESSOR therein, FAY F. POTTER.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My commission as notary public will expire:

_____
Notary Public

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1387X

Date received 5-31-51

Participation

POTTER AND SIMS
P.O. Box 229
Joplin, Missouri

Name and address of applicant

Date May 29, 1951

FILL IN THIS BLOCK

Date of application May 29, 1951

Estimated cost $58,910.

Mineral or metal Scheelite - Tungsten

Percentage of Government participation 75%

Location of mine Ortiz Mine Grant, Santa Fe County, New Mexico

Date of filing MF-100 May 29, 1951

DMA Docket Number, if available 1387X

INSTRUCTIONS

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

THE APPLICANT

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

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

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

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

16—64067-1

THE PROPERTY

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

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

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

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

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

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

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

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

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

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

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

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

THE EXPLORATION

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

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

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

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

THE REQUIREMENTS AND COSTS

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

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

CERTIFICATION

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

POTTER AND SIMS
(Name of company)

By [signature]
(Signature of authorized official)

May 29, 1951
(Date)

Partner
(Title)

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

*Same as footnote on page 1.

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

Potter and Sims
P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

FORM MF-103

THE APPLICANT

1 - 5. See Form MF-100

6. No claims, liens or encumbrances against the property.

7. Lease is in good standing. See attached copy of lease.

8. See attached financial statement.

9. Applicant is prepared to invest $14,227.50 in the proposed project which is sufficient to pay the 25% of the total cost of the project.

THE PROPERTY

10. (a) Four frame tar paper buildings, 16' x 16', each in good condition are located in the general area; laboratory size jaw crusher and pulverizer; 1-250 gallon 2-wheel water trailer; 1-½ ton 4x4 Dodge pickup in fair condition; 1-1951 Plymouth Tudor Sedan in good condition.

(b) The Ortiz Mine Grant contains 57,267 acres of land which has not been sectionized. Legal description of the Cunningham Hill Area from a U.S. General Land Office marker, which is on the North boundary of the Ortiz Mine Grant is as follows:

A tract of land consisting of approximately 41 acres lying within the boundaries of the Ortiz Mine Grant, Santa Fe County, New Mexico,

Potter and Sims
P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

FORM MP-103

10-b Continued:

the center of said tract lying 23,700 feet South 3 degrees and 50 minutes West from the Southwest closing corner of Section 29; Township 14 North; Range 8 East N.M.P.M.

11 - 18 See Form MP-103

19. This is an application for exploration funds to prospect for tungsten, based on favorable geologic structure, surface indications, and economic values found in Drill Hole #1 completed April 15, 1951.

THE EXPLORATION

20. The exploration will be conducted for scheelite ($CaWO_4$) in a monzonite breccia called a volcanic stock. The scheelite occurs in the cementing material of the breccia and would be classed as a hydrothermal contact metamorphic deposit.

21. It is proposed to contract the diamond drilling or churn drilling of 14 holes, making a total of 7,382 feet, to an elevation of 6350 feet above sea level. This depth has been arrived at from the favorable results obtained in Upper Dolores Drill Hole #1 which started at a surface elevation of 7050 feet and was put down 500 feet to 6550, encountering 0.15% WO_3 between 6675 and 6610 feet. The

Potter and Sims
P. O. Box 220
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

FORM NF-103

21. (cont'd)

cores or pulps from the proposed drill holes, of each 5 foot section, will be examined under the Ultra Violet light and those samples indicating commercial values in scheelite will be sent to a reputable assayer for WO_3 determination.

It is estimated this project will take 5 months to complete.

22. The area to be explored lies within a volcanic stock and consists of a monzonite breccia formation with scheelite occurring in the cementing material of the breccia. The intense brecciation and subsequent mineral bearing solutions carrying scheelite indicate the possibilities of developing a large low-grade scheelite deposit. There are surface showings of scheelite scattered over the entire area to be prospected. Upper Dolores Drill Hole #1 was put down to determine if a concentration of scheelite existed in depth and the average value of 15 - 5 foot samples at a depth of 375' to 440' gave 0.15% WO_3. The samples are listed as follows:

Potter and Sims
P. O. Box 229
Joplin, Missouri

CONTINUING MINE AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

PONI MP-103

22. continued

Depth	% WO_3
375 - 380'	0.10
380 - 385	0.06
385 - 390	0.11
390 - 395	0.10
395 - 400	0.33
400 - 405	0.18
405 - 410	0.13
410 - 415	0.16
415 - 420	0.12
420 - 425	0.13
425 - 430	0.09
430 - 435	0.11
435 - 440	0.27

THE REQUIREMENTS AND COSTS

23. (a) 1 Laborer @ $200.00 month

(b) 1 Manager @ $500.00 month

1 Field Superintendent @ $350.00 month

(c) None

(d) Road construction estimated cost: $6,000.00

(e) None

(f) It is proposed to contract for diamond drilling of 7,882 feet at an estimated cost of $4./foot: $31,528.00

(g) $300 per month rent on transportation equipment, office space and living quarters.

(h) Lumber and nails for making core boxes: $700.00

Assaying estimated at $1.00 foot: $7,882.00

(i) $250.00 month for bookkeeping and stenographic services.

Potter and Sh[illegible]
P. O. Box 229[illegible]
Joplin, Missouri

[illegible]NTAL HILL AREA, [illegible]ED ITEM GRANT
SAMPLE [illegible] COMPLETE [illegible] 0
[illegible] NO. MP-103

24. Time and Expenditure Schedule.

	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month	7th Month	8th Month
Supervision, Labor, Rental & Services	$1,600	$1,600	$1,600	$1,600	$1,600	$1,600	$1,600	$1,600
Road Construction	$3,000	$3,000						
Core Drilling	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$3,528
Assaying	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$ 882
Labor	$ 700							
Cost/MONTH	$10,300	$9,600	$6,600	$6,600	$6,600	$6,600	$6,600	$6,010
Core Drilling Progress/Month	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	302'

TOTAL COST: $53,010

Form MF-100
(March 1951)

U. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. DMA 1387 X

Date received 5-31-51

POTTER AND SIMS
P. O. BOX 229
JOPLIN, MISSOURI

Name and address of applicant

Date May 29, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) Necessity Certificate pursuant to the provisions of Sec. 124-A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (*a*) What are the chief mine, mill, or smelter products?
   (*b*) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following:
   (*a*) Linear feet of shafts.
   (*b*) Linear feet of drifts and crosscuts.
   (*c*) Linear feet of tunnels or adits.
   (*d*) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (*a*) Distance and direction from nearest town and shipping point.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who manage the project.
7. History:
   (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation.
   (*b*) State briefly the known history and production of adjoining and neighboring properties.
   (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, long, metric tons; barrels; pounds; etc.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change.

12. Ore or Mineral Reserves:

(*a*) Describe the ore or mineral [illegible]it briefly. Accompany the application by [illegible]vailable report on the geology and ore reserves.

Potter and Sims
P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

FORM MF-100

GENERAL TECHNICAL DATA

1. (a) Tungsten as scheelite ($CaWO_4$).

(b) Gold

2. Cunningham Hill Area, Ortiz Mine Grant, Santa Fe County New Mexico is the name of the property. This application pertains to a drilling exploration program which is now being carried on. The workings listed below were driven in the search for gold in the early 1900's, many years prior to the discovery of scheelite.

(a) Linear feet of shafts: 90

(b) Linear feet od drifts and crosscuts: 350

(c) Linear feet of tunnels or adits: 710

(d) No other mine openings.

No water is found in any of the above workings.

3. (a) Cunningham Hill Area is located 8 miles by road South of the town of Los Cerrillos, New Mexico which is on the main line of the A.T.&S.FE railroad.

(b) Old Placers Mining District

(c) The 57,267 acres contained in the Ortiz Mine Grant is not sectionized but the Cunningham Hill Area would lie in Township 13 North; Ranges 7 and 8 East; N.M.P.M. if projected.

(d) Santa Fe County, New Mexico.

4. (a) This property is not in operation at the present time, but is being prospected and developed.

(b) Lessee - Potter and Sims,
P.O. Box 229
Joplin, Missouri.

(c) None

5. No years of production for scheelite due to its recent discovery. Estimated date when production could begin is June, 1952, dependent on exploration results.

6. (a) Mr. George W. Potter, retired as Executive Vice-President of the Eagle Picher Mining & Smelting Company in 1945 and is presently operating several open pit lead and zinc mines in the vicinity of Joplin, Missouri.

(b) Mr. Gilbert R. Griswold, Agent for Mineral Rights Ortiz Mine Grant has had 3 years ore testing experience, 5 years mine exploration and development experience.

7. (a) Previous development work in this area was for gold. Recent economic conditions have discouraged gold mining on this property. The scheelite discovery was made in 1947 and 2 - 500 foot churn drill holes have been put down within the last several months. The tungsten values in Drill Hole #1 show 65 feet of 0.15% WO_3 at a depth of 375 to 440 feet. The Drill Hole #2 assay returns, received on May 27, 1951 show composite average value of 0.09% WO_3 from 375 to 460 feet.

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P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT,
SANTA FE COUNTY, NEW MEXICO

FORM MF-100

7. (b) The San Pedro Copper Mine, some 12 miles South of Cunningham Hill Area is known to contain some scheelite but this discovery was made after production of copper ceased in 1941.

(c) The Cunningham Hill Area lies within a volcanic stock which has been designated as the Ortiz Basin. An excerpt from the general geologic report on the entire Ortiz Mine Grant made by C. T. Griswold, Consulting Geologist and Mining Engineer, Albuquerque, New Mexico, treating with this particular area is quoted below:

"On the northeast slope of the (Ortiz) mountains in what is known as the Ortiz Basin there is evidence of a volcanic stock. This is about 7,000 feet from southwest to northeast by 4,000 feet from southeast to northwest. There is a tuff outcrop near the northeast edge of the stock at the southwest corner of the ranch house which shows that the eruption broke through to the surface. This volcanic stock is filled with monzonite, more or less brecciated, which has been intruded by andesite masses, dacite dikes and narrow magnetite veins. Diatreme structure shows on the periphery of the stock especially at Cunningham Hill and 600 feet southwest of the Florencio mine. The early prospectors for gold searched intensively around the rim of this stock discovering the Cunningham, Benton, Live Oak, Ortiz, English, Shoshone and Florencio mines. They demonstrated

Potter and Sims
P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT,
SANTA FE COUNTY, NEW MEXICO

FORM MF-100

7. (c) continued

the association of gold with the monzonite which came near the end of the eruptive sequence."

8. Partners: George W. Potter, Joplin, Missouri.
Dewey Sims, Miami, Oklahoma.

9. Does not apply.

10. Production - none. This is an exploration project.

11. No production.

12. (a) The scheelite ($CaWO_4$) occurs in the cementing material in the monzonite breccia, called a volcanic stock. Reference is made to Paragraph 7(c) for a report on the geology.

(b) (1) The accompanying map shows the area which is being drilled to determine ore reserves. Not enough data is available to calculate ore reserves.

13. The road distance from the Cunningham Hill Area to Los Cerrillos, New Mexico is 8 miles. The road is a typical country road in fair condition and has 2 steep grades.

14. It is estimated that 150 gallons of water per minute is available during all seasons of the year from present wells and shafts in the general area.

Potter and Sims
P. O. Box 229
Joplin, Missouri

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

FORM MF-100

15. No power is available at the property at the present time, however some 500 KW could be purchased at an estimated cost of 1.5¢/KW from the Albuquerque & Cerrillos Coal Company power plant located at Madrid, New Mexico, some 4.5 miles northwest of the Cunningham Hill Area.

16. Local labor is available at Los Cerrillos, Madrid and Golden, New Mexico. 15 muchers were employed several years ago for placer shaft sinking.

17. Four frame tar paper buildings, 16' x 16' each in good condition are located in the general area; laboratory size jaw crusher and pulverizer; 1-250 gallon 2-wheel water trailer; 1-½ ton 4x4 Dodge pickup in fair condition; 1-1951 Plymouth Tudor Sedan in good condition.

18. None.

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

CERTIFICATION

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

POTTER AND SIMS
(Name of company)

By Fred Potter
(Signature of authorized official)

May 29, 1951
(Date)

Partner
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

POTTER AND SIMS

BALANCE SHEET

April 30, 1951

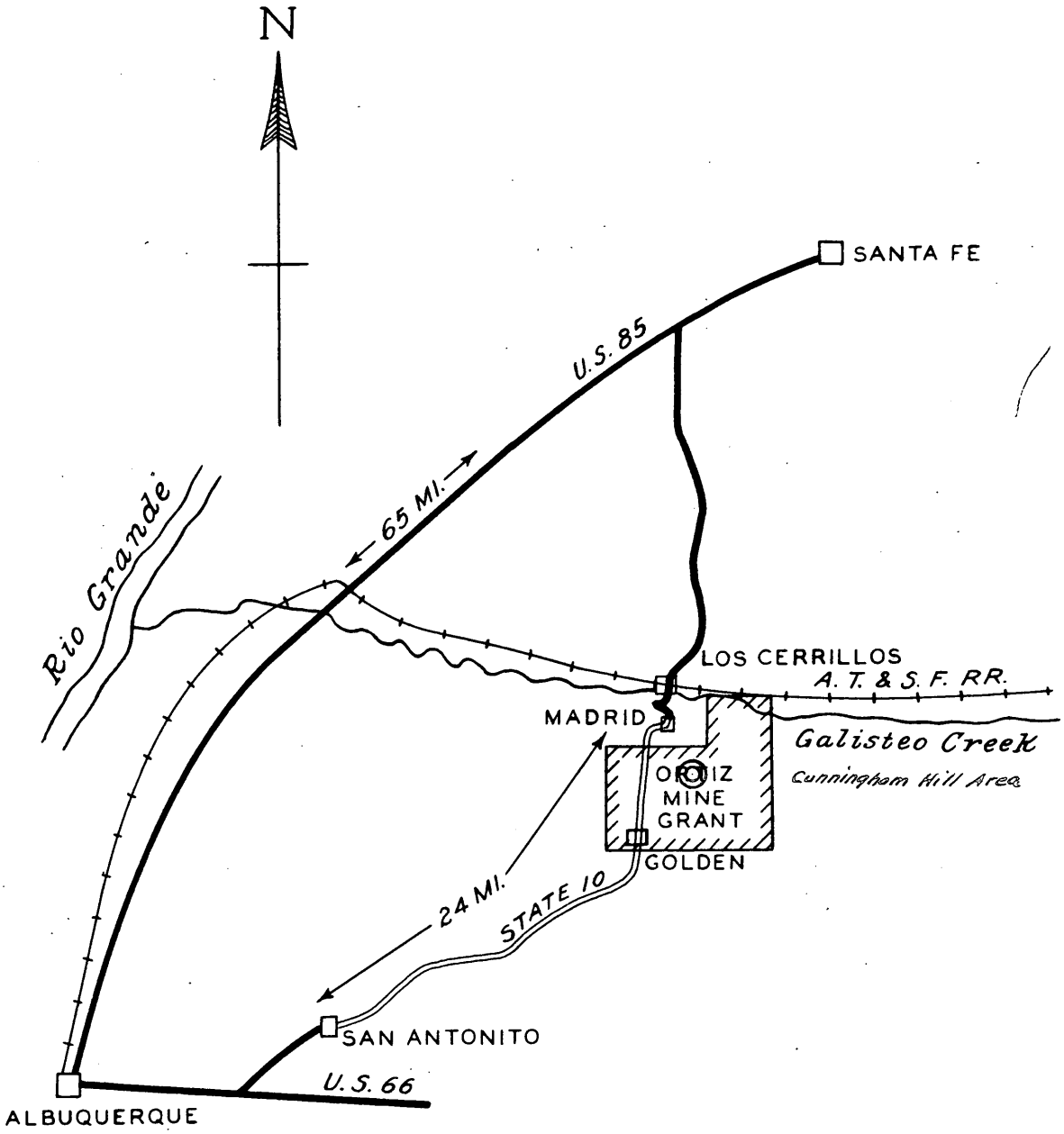
Assets

Current Assets		
	$	
Cash in Bank	122,845.17	
Ore Inventory	16,405.00	
Accounts Receivable	15,215.08	154,465.25
Equipment		
Office	1,430.39	
Snapp Mill Add'n	15,887.68	
Heavy Machinery	95,817.62	
Trucks	2,700.00	
	115,835.69	
Less: Reserve for deprec.	25,222.85	90,612.84
Deferred Expense		28,305.26
Evans Lease		16,781.55
Miscellaneous Drilling		4,885.00
Total Assets,.....		$ 295,049.90

Liabilities

Current Liabilities	$	17,529.29
Partner's Capital Accounts		277,520.61
Total Liabilities,.....	$	295,049.90

EXHIBIT "C"



POTTER and SIMS

SKETCH MAP SHOWING LOCATION OF

ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

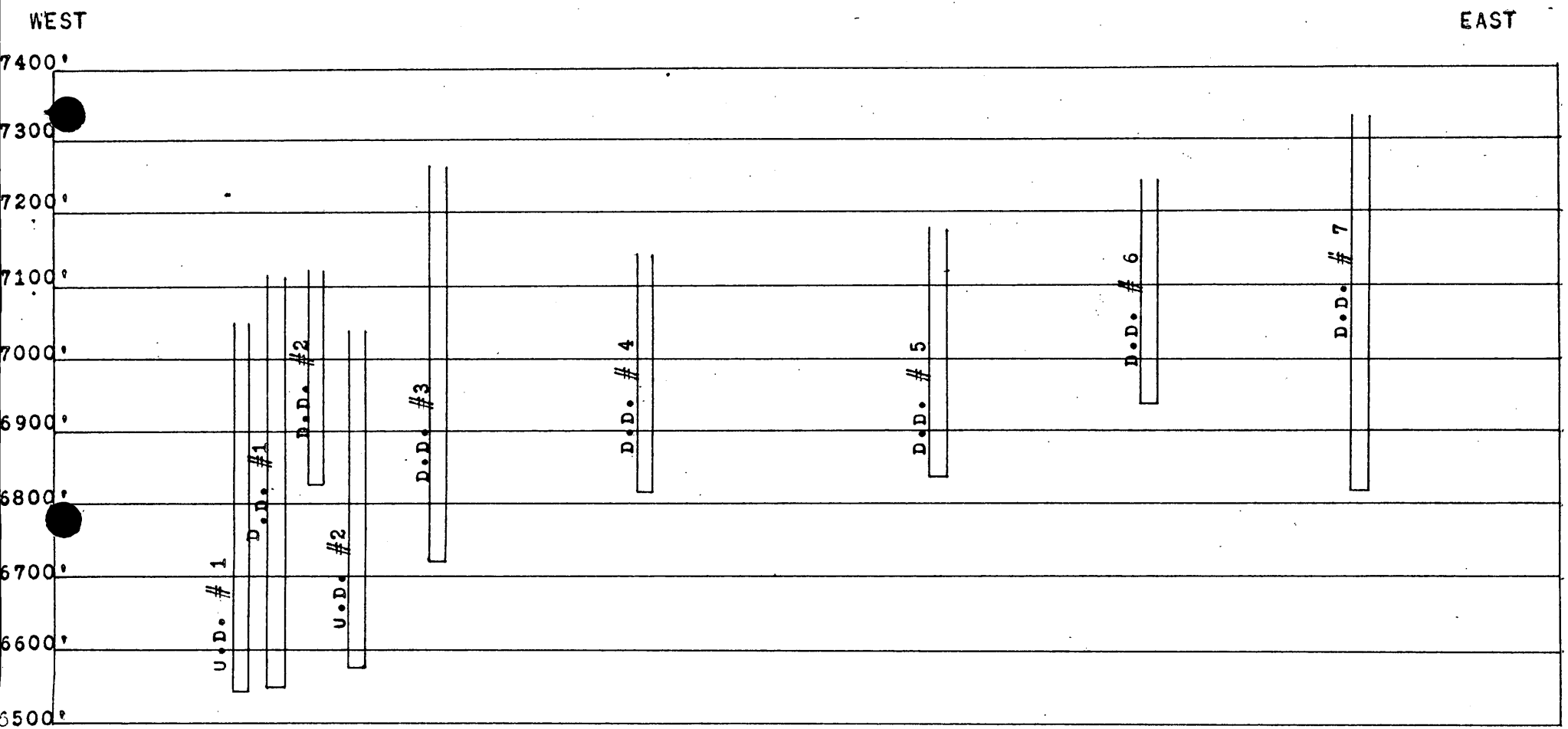
G. R. GRISWOLD
JUNE 1948

EXHIBIT "A"

POTTER AND SIMS
1500 LAS LOMAS NE
ALBUQUERQUE, NEW MEXICO

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

CONTRACT IDM-E-310
DMEA DOCKET 1387



VERTICAL SECTION OF DRILL HOLES

VERTICAL SCALE: 1" = 20'
HORIZONTAL SCALE: 1" = 200'

EXHIBIT "B"

11/1/52

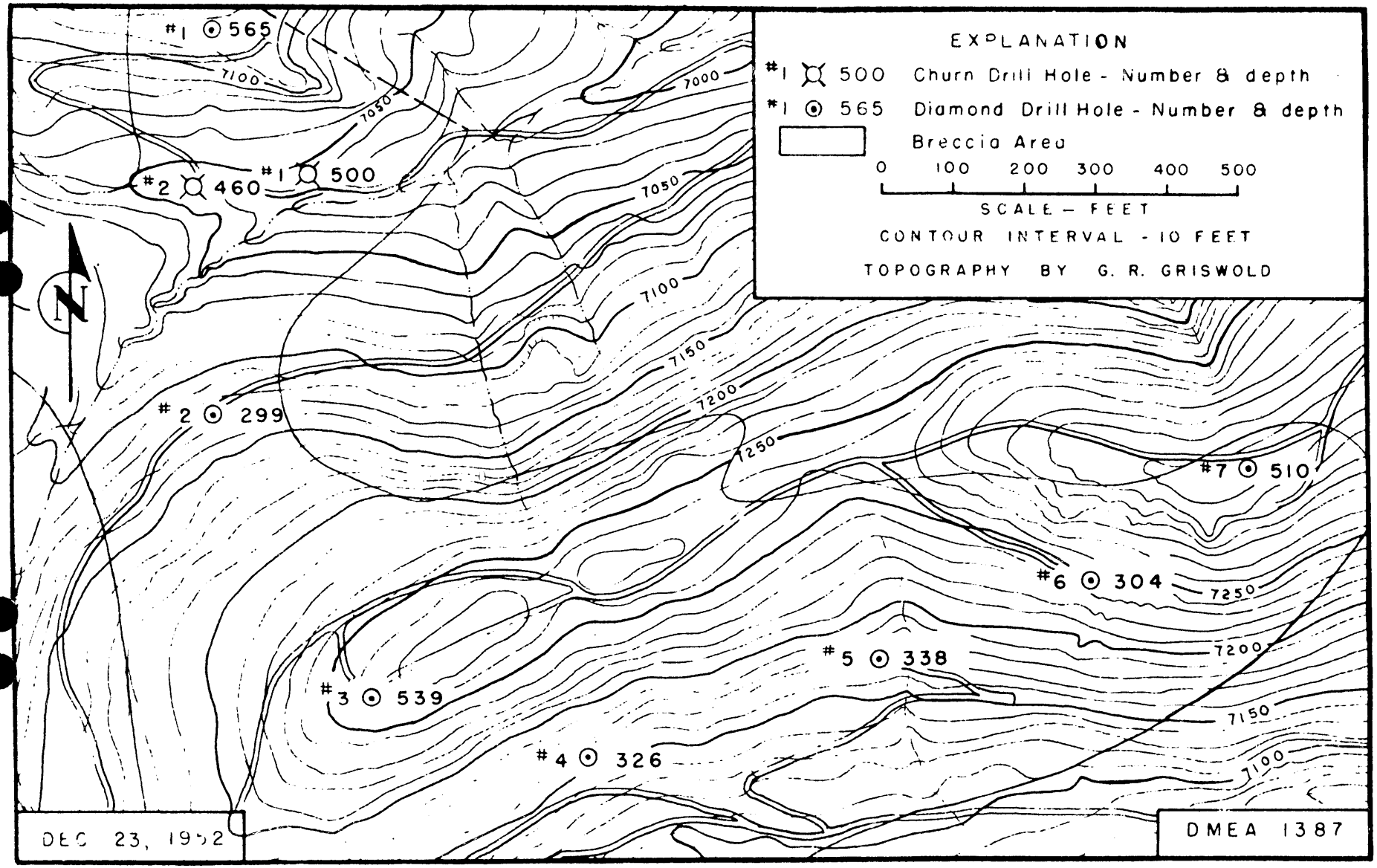


FIGURE 2. - TOPOGRAPHIC MAP

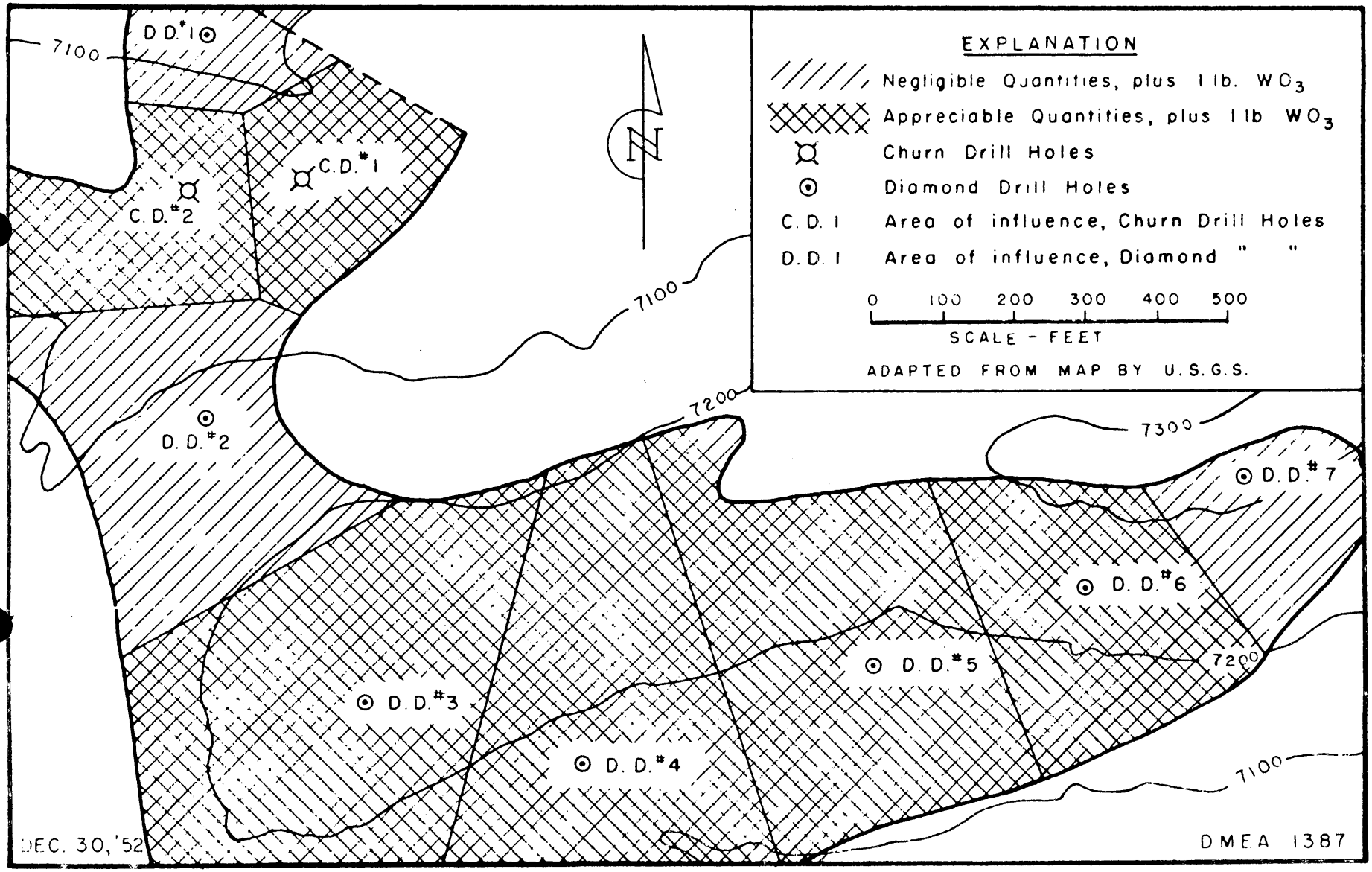


FIGURE 4 - AREAS OF INFLUENCE OF DRILL HOLES

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

RECEIVED

FINAL

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of June-November, 195 2 Docket No. DMEA 1387X Contract No. IDM-E310

Operator's Name Potter and Sims Minerals Scheelite

Address P.O.Box 229, Joplin, Missouri

Contract Amount, $ 77,520.00 Government Participation: 75 % Amount, $ 58,140.00

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent ~~Short Form~~ Contracts:						
Drilling		18,797.25	18,797.25			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor		1,690.89	1,690.89			
Supervision		2,000.00	2,000.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives		62.48	62.48			
Pipe		2.12	2.12			
Track						
Bits & core boxes		215.73	215.73			
Gas & oil		288.22	288.22			
(4) Operating Equipment:						
Rental Bulldozer		700.00	700.00			
Purchase						
Depreciation		156.68	156.68			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment		12.15	12.15			
Sampling and Analysis		1,100.21	1,100.21			
Payroll Taxes		304.71	304.71			
Liability Insurance						
Rent & subsistence		171.52	171.52			
Maps & Logs		16.19	16.19			
(8) Contingencies (specify):						
TOTALS		25,518.15	25,518.15			

I certify that the above bill is correct and just and that payment therefor has not been received.

Date January 3, 1953 *Payee Potter & Sims

Per G. R. Griswold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$

Signature
(Authorized Certifying Officer)

Date Vou. No.
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DME 310 in accordance with the terms of the contract.

Signature John H Doale WPA Title Mining Engineer Date Jan 5, 1953

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature ..... Title ..... Date .....

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

FINAL

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of June-November 1952 Docket No. DMEA 1387X Contract No. Idm-E-310

Operator's Name Potter & Sims Minerals Scheelite

Address Box 229, Joplin, Missouri

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core				23,254.36	2,881	8.07	4,000	
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails				2,263.79	4,370	0.52		
TOTAL DISTRIBUTED COSTS				25,518.15				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased								
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS				25,518.15				77,520.00

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

Date January 3, 1953 Operator Potter & Sims

Per S. R. Bricwell Title Agent

REMARKS:

→ NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R036.3.
Approval expires 6-30-53.
Defense Minerals Administration
RECEIVED
MAR 13 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of Oct.-Nov., 1952 Docket No. DMEA 1367A Contract No. IC-2310
Operator's Name Potter & Sims Minerals Scheelite
Address P.O. Box 229, Joplin, Mo.
Contract Amount, $ 77,520.00 Government Participation: 75 % Amount, $58,140.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling		18,797.25	18,797.25			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor		1,690.89	1,690.89			
Supervision		2,000.00	2,000.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives		62.48	62.48			
Pipe		2.12	2.12			
Track						
Bits & core boxes	- 56.70*	272.43	215.73			
Gas & oil		288.22	288.22			
(4) Operating Equipment:						
Rental Bulldozer		700.00	700.00			
Purchase Core splitter	-123.74*	123.74				
Depreciation		136.68	136.68			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment		12.15	12.15			
Sampling and Analysis	563.71	536.50	1,100.21	399.46		25518.15
Payroll Taxes		304.71	304.71	#1-35.00		-35.00
Liability Insurance				#2-50.61		- .01 #4
Rent & subsistence		171.52	171.52	313.85	25169.29	25483.14
Maps & logs	16.19		16.19			
(8) Contingencies (specify):						
				~~399.46~~	~~25118.69~~	~~25518.15~~
				~~35.00~~		~~35.00~~
				~~50.65~~		~~50.65~~
				~~2.01~~		~~2.01~~
				~~6.00~~		~~6.00~~
TOTALS	399.46	25,118.69	25,518.15	~~313.85~~	~~25169.29~~	~~25483.14~~

I certify that the above bill is correct and just and that payment therefor has not been received.

Date January 3, 1953 *Payee Potter & Sims

Per S. R. Briswold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

* Credits

NOTE.—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.

(See other side for instructions)

~~Pursuant~~ to authority vested in ~~me, I certify~~ that this account is correct and proper for payment in the amount of:

~~$313.85 $25169.29 $25483.14~~

$ 241.38

Signature [illegible]
(Authorized Certifying Officer)

Date 3/5/53 Vou. No. DMEA 53-104
(See other side)

1. Depreciation on operating equipment disallowed by DMEA auditor.
2. Payroll taxes dropped by operator but not indicated on Form 104. ~~Pursuant to authority vested in DMEA auditor.~~
#3 Underpayment on September report.: 75% of $313.85 or $235.38 plus $6.00 equals $241.38
4. Erroneous deduction by operator

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. dmE 310 in accordance with the terms of the contract.

Signature John H. Soule WRS Title Mining Engineer Date Jan 5. 1953

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. L. King Title Executive Officer Date FEB 16 1953

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-101A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 13 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of Oct.-Nov. 1952 Docket No. DMEA 1397A Contract No. DC-1310

Operator's Name Potter & Sons Minerals Scheelite

Address P.O. Box 229, Joplin, Mo.

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	523.20		23,254.36	2,881	8.07	8,000	9.19
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails				2,263.79	4,370	0.52		
TOTAL DISTRIBUTED COSTS		523.20		25,518.15				TOTAL COSTS AUTHORIZED BY CONTRACT
Credit								
Operating Equipment Purchased		-123.74						
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		399.46		25,518.15				77,520.00

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

Date January 3, 1953 Operator Potter & Sons

Per S. R. Griswold Title Agent

REMARKS:

NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

March 6, 1953

Progress Report
October & November, 1952
DMA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 13 1953

Potter & Sims
P.O.Box 229
Joplin, Missouri

[illegible] $ 399.46

[illegible] $ 85.61

[illegible] $ 313.85

[illegible]

Depreciation on operating equipment [illegible] - 35.00
Disallowed by DMA Auditor

Payroll Taxes deducted by operator
but not indicated on - 50.61 - 085.61

DMA
$ 6.00 underpayment on September 1952 report
(to be added after computation of 75% of the claim)

[illegible]

Very sincerely yours,

[illegible]

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

224 New Customhouse
Denver 2, Colorado

March 10, 1953.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 13 1953

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMA Docket 1387, Contract Idm-E310, Final Report, (Tungsten) Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico.

Enclosed are two copies of the Operator's Final Progress Report MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the month of November 1952, pertaining to DMA Docket 1387, Contract Idm-E310, Final Report, (Tungsten) Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico. Property which is jointly owned by the Operator and the Government has been credited to the project to the full amount of the Government's share on Form MF-104.

Forms were processed for payment in conformance with the final Audit Report by the Contract Administration and Audit Division dated March 4, 1953.

Copies of Engineer's Final Report, Geologist's Final Report, and Operator's Final Report will be transmitted at a later date after all have been submitted.

for John F. Shaw
W. H. King

Enclosures

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

Denver 2, Colorado

February 16, 1953

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMA Docket 1387, Contract Idm-E310, Final Report, (Tungsten) Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico - Operator's Monthly Progress Report for the period of October - November, 1952

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

This report constitutes the Operator's final claim under the contract and is recommended for payment in conformance with the final Audit Report by the Contract Administration and Audit Division dated February 11, 1953 which is summarized as follows:

Amount claimed by the Operator this report	$399.46
Disallowance per Audit Report	
Operating Equipment Depreciation	35.00
Reinstatement per Audit Report	
Rent and Subsistence	2.04
Total Amount this Report -	$366.50
Payment to Operator at 75 percent	$274.88

No property which is jointly owned by the Operator and the Government need be considered when final payment is made as the Operator has credited to the project the full Government's share of the core splitter and unused core boxes on Form MF-104 for this period.

Remarks:

Date of Report - January 3, 1953
Date Received in Field Office - January 5, 1953
Date Received in Region Office - January 7, 1953
Date Processed for Payment - February 16, 1953

Delay due to waiting for Final Audit Report dated February 11, 1953.

W. H. KING

W. H. King

RDB:oc
cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.

MINING DIVISION
REGION IV

January 5, 1953

Memorandum

To : W. H. King, Chief, Mining Div., Region IV

From : Chief, Mining Methods Branch, Mining Div., Region IV

Subject : October-November 1952 Progress Report, Docket DMA-1387X, Contract Idm-8310, Potter & Sims, Cunningham Mill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above report:

(1) Bureau of Mines engineer's report;
(2) Operator's narrative report;
(3) Forms MF-104 and 104A with documentation.

Also enclosed are two extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs (75 percent) be paid.

Walter R. Storms

Walter R. Storms

CC: W. H. King (6)
DMA-1387X
MF

WRStorms:als

MINING DIVISION
REGION IV

January 5, 1953

Memorandum

To : Walter R. Storms, Chief, Mining Methods Branch, Mining Div., Region IV

From : John H. Soule', Mining Engineer, Tucson, Arizona

Subject : Progress Report for October-November 1952, Docket DMA-1357K, Contract Idm-1310, Potter and Sims, Cunningham Hill Breccia Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico.

The October-November report for the subject docket has been received together with the Forms MT-104 and 104A, and the necessary documentation.

The project was started on June 1, 1952 and completed on September 30, 1952. During this time, 7 diamond drill core holes were drilled for a total of 2,331 feet. This is well below the maximum of 4,000 feet allowed by the contract.

The drilling disclosed the widespread occurrence of tungsten minerals in the project area although the quantities were small. No ore reserves were calculated by the operators.

Additional charges to the project are approved and consist of assaying, transportation of samples, and maps for the report. Credited to the project is the Government's share of the core splitter and unused core boxes. The costs of the project are documented.

The distribution of the charges on Form MT-104 is approved although the transportation costs are included in the assaying charges. This is the manner in which the costs are set up in the contract. No allowable maximums were exceeded by these last charges.

Agreement in the totals on Forms MT-104 and 104A is noted.

John H Soule

John H. Soule', Mining Engineer
Mining Methods Branch,
Mining Div., Region IV

CC: W. H. King (Orig. & 6)
DMA-1357K
MT

JHSoule':als

POTTER AND SIMS
1500 LAS LOMAS ROAD NE
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

January 3, 1953

NARRATIVE REPORT FOR OCTOBER-NOVEMBER 1952

Contract Idm-E-310 DMEA Docket 1387X

The months of October and November 1952 were spent in waiting for assay returns and in preparing the final report.

The following items, with a value in excess of $50.00, 75% of the cost having been contributed by the Government, are on hand and will be retained by Potter and Sims for the full value of the items. Credits have been entered on Form MF-104 covering this period.

1	- Core Splitter - original cost:	$123.74
90	- Core Boxes @ 63¢ each:	56.70

I certify that all bills in connection with Contract Idm-E-310 have been paid.

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 45-R1103
Approval expires 6-30-53.

Defense Minerals Administration
RECEIVED
JAN 2 1953

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of September, 1952 Docket No. DMEA 1387 Contract No. Ian-3-310
Operator's Name POTTER AND SONS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri
Contract Amount, $ 77,520.00 Government Participation: 75 % Amount, $ 58,140.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Contracts: ~~Short Form~~						
Drilling	6890.75	11,906.50	18,797.25			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	434.57	1,256.32	1,690.89			
Supervision	500.00	1,500.00	2,000.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives	None	62.48	62.48			
Pipe	None	2.12	2.12			
Track						
Bits & Core Boxes	None	272.43	272.43			
Gas & Oil	62.34	225.88	288.22			
(4) Operating Equipment:						
Rental Bulldozer	None	700.00	700.00			
Purchase Core Spltr	None	123.74	123.74			
Depreciation	35.00	123.00	158.00			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment	None	12.19	12.19			
Sampling and Analysis	270.92	265.58	536.50			
Payroll Taxes	215.84	88.87	304.71			
Liability Insurance						
Rent & Subsistence	32.13	139.39	171.52			
(8) Contingencies (specify):						
				8441.55	16678.46	25120.01
			*		-721.68	-721.68
TOTALS	8441.55	16,678.46	25,120.01**	770.96		770.96
				9212.51	15956.78	25169.29

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 10/16/52 *Payee POTTER AND SONS
Per G. R. Griswold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$6903.38

Signature [illegible]
(Authorized Certifying Officer)

Date 12/23/52 Vou. No. DMA 53-75
(See other side)

*Previous Disallowance
** Reinstatement of previous disallowances

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. dme E 310 in accordance with the terms of the contract.

Signature John H. Soule' NRD Title Mining Engineer Date Oct 21, 1952

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature Jack T. Shaw for W. H. King Title Executive Officer Date 12-18-52

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(*a*) *Form MF–104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(*b*) *Form MF–104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(*c*) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF–104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF–104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF–200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF–200; and delete word "Independent" if the contract reported is on Form MF–200 (A). Also, report work paid for on a unit basis under contract Form MF–200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF–104 when submitted for reimbursable expenses incurred under contract Form MF–200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF–200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF–104 is required to be documented. The four copies of Form MF–104 are not to be thus supported.

Form MF–104 submitted for reimbursement under fixed price contracts on Form MF–200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF–104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 1953

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of September 195 2 Docket No. DMEA 1387 Contract No. Ico-E-310
Operator's Name POTTER AND SONS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	8441.55	940	22,732.48	2885	7.88	4000	
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails	feet	None		2,263.79	4370	0.52		
TOTAL DISTRIBUTED COSTS		8441.55		24,996.27				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased				123.74				120.00
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		8441.55		25,120.01				

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

Date 10/16/52 Operator POTTER AND SONS

Per S. R. Griswold Title Agent

REMARKS:

NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

Dec 22, 1952

Progress Report

Sept. 1952

Potter & Sine
Box 229
Joplin, Missouri

[illegible] 8441.55

[illegible] 770.96

[illegible] 9212.51

[illegible]

Reinstatement of disallowances for July and August	720.39
Partial reinstatement of amount disallowed because of inadequate documentation in the July report	50.57
	770.96

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

R. L. Stokes
Audit Section

R-IV-B & F Form No. 4
[illegible]

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

2[illegible] Customhouse
Denver 2, Colorado

December 17, 1952

Memorandum

To: T. A. Christensen

From: Executive Officer, Field Team, Region IV

Subject: DMA Docket 1387X, Contract Idm-R310 (Tungsten) Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico - Operator's Monthly Progress Report for the period of September, 1952

Enclosed are the original and four copies of Form MF-104 and 104A, Narrative Report, and Engineer's Report for the above period.

Work has been accomplished as authorized in the contract and payment is recommended for 75 percent of the amount as reported on Form MF-104, contingent on your verification of the correctness of applicable rates and arithmetical accuracy of computations, except for the following reinstatements:

Reinstatement of amount disallowed for July and August, 1952 as per "Administrative Audit Difference Statement" dated October 20, 1952	$ 720.39
Partial reinstatement of amount disallowed, due to lack of adequate documentation, from Report for July, 1952 as per "Administrative Audit Difference Statement" dated September 30, 1952	50.57
	$9,212.51

Remarks: Progress of the MF-104s and related material for September, 1952 are tabulated as follows:

Date of Operator's Report - October 16, 1952
Received in Field Office, Tucson, Arizona - October 17, 1952
Received in Regional Office, Denver, Colorado - October 24, 1952
Processed for reimbursement - December 16, 1952

The delay in the Regional Office was occasioned by the necessity of holding the report to safeguard the Government's interest pending receipt of the final MF-104 forms and settlement of the Government's equity.

Enclosures

HKT:oc
cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.
Koschmann (2)
JWTownsend

John F. Shaw
John F. Shaw for
W. H. King

MINING DIVISION
REGION IV

October 22, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

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

Subject : September 1952 Progress Report, Docket DMA-1387X, Contract Idm-E310, Potter & Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above progress report:

(1) Bureau of Mines engineer's report;

(2) Operator's narrative report with map;

(3) Forms MF-104 and 104A, with documentation.

Also enclosed are two extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Additional costs for assaying will be submitted at a later date although all core drilling was completed on September 29.

Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch
Mining Division, Region IV

CC W. H. King (6)
DMA-1387X
DF

WRStorms:frj

MINING DIVISION
REGION IV

October 21, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Br., Mining Div., Region IV, Tucson, Ariz.

From : John H. Soule', Mining Engineer, Tucson, Arizona

Subject : Progress Report for September 1952, Docket DMEA-1387, Contract Idm-E310, Potter and Sims, Cunningham Hill Tungsten Deposit, Ortiz Mine Grant, Santa Fe County, New Mexico.

All work on this project had been stopped by October 13, 1952 when the project site was visited. Drilling was stopped on September 29, 1952. The drill contractor had removed all of his equipment. G. R. Griswold, engineer in charge of the project, was visited in his offices in Albuquerque, New Mexico and the termination of the project discussed. There remains much additional work in preparing the final report and compiling the assay results.

During the month of September, Hole No. 5 was advanced from 216 to 338 feet. The hole was bottomed at 338 feet due to drilling difficulties in which the operator stuck the bit and rods in the hole. Removal of the bit could not be done. There was scheelite in the hole from 53 feet to the bottom.

Hole No. 6 was started immediately upon completion of Hole No. 5 and was bottomed at 304 feet. Small amounts of scheelite were noted in this hole. The site was located at the point specified in the contract.

Hole No. 7 was started and completed during the month. Much trouble was encountered in this hole due to caving ground. Very little tungsten mineralization was noted under the ultra-violet lamp. The hole bottomed at 510 feet. The drill was located about 100 feet northwest of the proposed site to get away from a precipitous slope that would have made the setup impractical. The change is approved by the inspecting engineer, and from the results obtained, other than with difficult drilling it seems that this hole could have been drilled more to the west than it was with better chance of drilling in the breccia area. Most of Hole No. 7 was in the sedimentary boundary of the stock.

CC W. H. King (orig. & 6)
DMA-1387X
DF

WRStorms:frj

This project was very well done and careful attention was given to all of the details of operation that would secure the best possible results. The personnel of the project are to be congratulated on the work they did.

How about this? Any gold assays?

Although the assay results were not as high as might have been expected, there is a considerable tonnage of ore indicated by the drilling that will equal the expectations of the examining engineers who proposed the project. It is unfortunate that the drilling schedule was so inflexible as not to allow advantage to be taken of information developed during the drilling. As it now stands, there remains a considerable area north of Holes 4, 5, and 6 that contains promise and the project results must be deemed inconclusive.

ANALYSES OF ENTRIES ON FORM MF-104

Item 1. Independent Contracts. This item totalled $6,890.75 for the month and is approved as being within the terms of the contract. The breakdown of these costs is shown on the drill contractor's invoice which has been checked for correctness. Only one item may be questioned and that is for the reaming. According to the sub-contract, reaming is to be done from AX to BX size at a rate of $2.25 per foot. The reaming done on the project was from BX to NX size at the same rated noted in the sub-contract. This is advantageous to the project as the larger size reaming, as with drilling, costs more and is quoted at a higher rate.

Item 2. Labor and Supervision. Labor totalled $434.57 for the month. One sampler was employed and the item is documented by a certified copy of the payroll. This entry exceeds the allowable maximum stated in the contract by $186.48. However, the amendment to the contract contained in the termination agreement allows continuation of this charge and it is so approved.

Supervision is allowed by the contract at $500.00 per month. Again, this item, an allowable maximum, was exceeded and is taken care of in the amendment in the termination agreement. This entry is approved and is documented by the accompanying certified copy of the payroll.

Item 3. Gas and Oil. Gas and oil were purchased for the project equipment during the month. This item totaled $62.34 and is approved and documented. Paper sacks and boxes for sample shipment were purchased during the month but they are included under sampling and analysis.

Item 4. Depreciation. This is allowed by the contract at $10.00 for a truck and $25.00 for an automobile for a total of $35.00. This is approved pending a decision as to whether these items are included in the amendment allowing an extension of time for the project. The account is overdrawn as it now stands.

Item 7. Sampling and Analysis. This item totalled $270.92 for the month and is so approved. No assays for gold are included and the item is documented. Additional assays are yet to be done.

Item 7. Payroll Taxes. This item totals $215.84 and includes all payroll charges for the quarterly period of July through September. This item is documented. It is noted that some disallowances were made in the payroll tax items but not having the August MF-104, we are unable to determine the extent of the final disallowals. It is suspected that the documented $215.84 may include part of the payroll taxes that were allowed in the past.

Item 7. Rent and Subsistence. This item totals $32.13 and is so approved. This item is documented but it is noted that some question has been raised on past documentation. There is no knowledge in which way the documentation was deficient. As some disallowances were made, no changes are made in the form lacking information contained on the form for August.

A total of $8,441.55 was spent on the project for the month of September bringing the total to date to approximately $25,120.01, depending upon the extent of the August disallowances. No corrections, if any, were made on the Form MF-104 because of the possible changes made in Denver on the August 104's.

DISCUSSION OF FORM MF-104A

All of the charges for the month of September are made to core drilling. The total to date, without disallowances, is $22,732.48. This indicates a unit cost of $7.88 for the drilling which is a reasonable figure considering the size of hole drilled.

John H Soule'

J. H. SOULE', Mining Engineer
Arizona-New Mexico Branch
Mining Division, Region IV

POTTER AND SIMS
1500 LAS LOMAS ROAD N.E.
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

October 16, 1952

Mr. Walter R. Storms
United States Bureau of Mines
P.O. Box 4097, University Station
Tucson, Arizona

Re: Contract Idm-E-310
DMEA Docket 1387

Dear Mr. Storms:

Enclosed find 5 copies each of the September Narrative Report, Progress Map, Drill Logs and Assays, Form MF-104, Forms MF-10&A and one copy of supporting vouchers and accounting data.

There are still some 100 tungsten assays yet to be received which will be vouchered and forwarded to you at a later date along with the Final Report.

Very truly yours,

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent

cc: Potter and Sims
Joplin, Mo.

POTTER AND SIMS
1500 LAS LOMAS ROAD N.E.
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

NARRATIVE REPORT FOR MONTH OF SEPTEMBER 1952

Contract Idm-E-310 DMEA Docket 1387

Drill Hole #5 was lost and abandoned on September 7. An inexperienced driller stuck the core barrel and rods in green cement on September 5th and efforts to free the hole were unsuccessful. This hole reached a depth of 338 feet and scheelite was present from 53 feet to 338 feet. The drilling contractor left the bit, core barrel and 30 feet of rods in the hole. Setting up and drilling time amounted to 22 shifts for an average of 15 feet per shift. Core recovery was 84%.

The drillers moved onto Drill Hole #6 on September 8th and completed this hole to a depth of 304 feet on September 11th. The core from this hole was well mineralized with pyrite and contained a small amount of scheelite between 108 and 172 feet. Setting up and drilling time amounted to 10 shifts for an average of 30 feet per shift. Core recovery was 84%.

No answer had been received to our request, dated August 27, for an amendment allowing the drilling of footage remaining in the area where scheelite had been found, so on September 11th the undersigned called Mr. W. R. Storms, United States Bureau of Mines, Tucson, Arizona and he advised that we drill according to the contract as he had not received a reply to our request.

The drillers moved to Drill Hole #7 on September 12th. The location of this hole was moved 100 feet northwest to facilitate setting up. The ground was badly broken in this area and the

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

hole had to be reamed and cased to 185 feet as sand ran in and the hole caved badly. A large part of this hole was drilled in sandstone and shale and the drilling was stopped at 510 feet on September 29th when circulation was lost and the hole caved. Setting up and drilling time amounted to 40 shifts for an average of 13 feet per shift. Core recovery was 62%.

Boyles Bros. Drilling Company moved off the job on October 2, 1952.

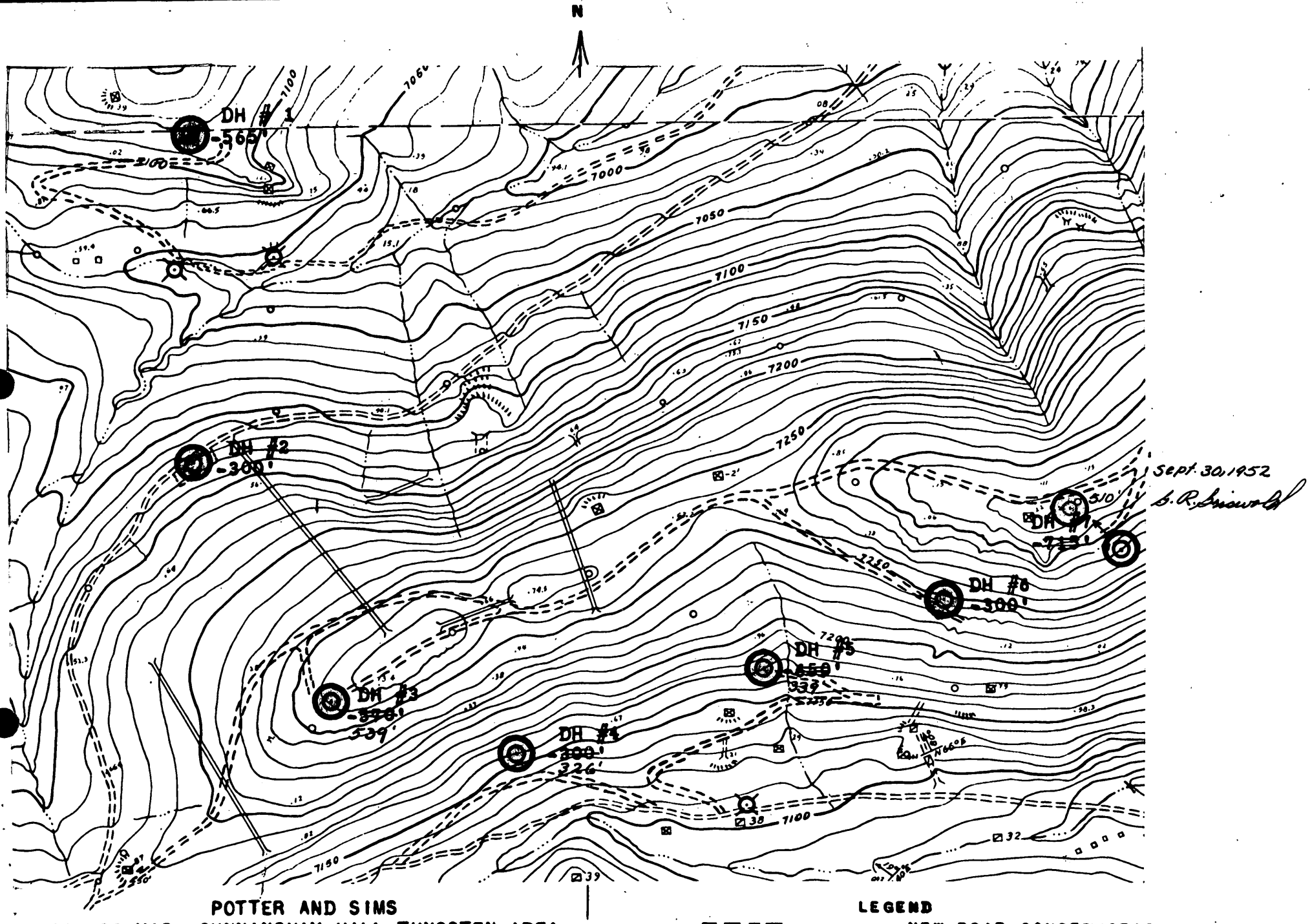
Samples were sent off for assay on all of the core from each hole except Drill Hole #7 as it is evident from the spot assay returns that another tungsten mineral besides scheelite is present in this volcanic stock.

I certify that all August and September bills have been paid.

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent



POTTER AND SIMS

PROGRESS MAP, CUNNINGHAM HILL TUNGSTEN AREA

ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

SCALE: 1 INCH = 200 FEET

CONTOUR INTERVAL: 10 FEET

LEGEND

NEW ROAD CONSTRUCTION

VERTICAL DIAMOND DRILL HOLES COMPLETED

VERTICAL DRILL HOLE PARTIALLY COMPLETED

OLD CHURN DRILL HOLE

DMA 1387x CONTRACT IDM-E-310

POTTER AND SIMS
1500 Las Lomas Road, N.E.
Albuquerque, New Mexico

September 15, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

DIAMOND DRILL HOLE #4

ASSAY RESULTS CONTINUED:

SAMPLE NO.	DEPTH	AU (oz/ton)	WO_3 %
4 - 19	187' 197'	.05	0.09
4 - 20	197' - 206'	.06	0.06
4 - 21	206' - 216'	.06	0.07
4 - 22	216' - 229'	.075	0.04
4 - 23	229' - 240'	.01	0.04
4 - 24	240' - 252'	Trace	0.06
4 - 25	252' - 262'	.01	0.06
4 - 28	281' - 293'	.005	0.02
4 - 29	293' - 302'	Trace	0.02
Slude Samples 4-S-1	9' - 184'	Trace	0.05
4-S-2	184' - 326'	Trace	0.04

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

September 30, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA DOCKET 1387

Log of Diamond Drill Hole # 5

Elevation Collar of Hole: 7,176 BX Core Core Recovery 84%
Date Started: 8/26/52 Date Abandoned: 9/7/52 Total Depth: 338'

DEPTH	FORMATION
2'-53'	Oxidized monzonite breccia with quartzite. Hematite, manganese stain.
53'-139'	Monzonite breccia with quartzite. Scheelite starts at 53'. Hematite, specular hematite, pyrite and psilomelane. Kaolinized.
139'-142'	Diorite (?)
142'-189'	Monzonite breccia with quartzite. Scheelite, pyrite, specular hematite. Kaolinized.
189'-190'	Diorite (?)
190'-304'	Monzonite breccia with quartzite. Scheelite, pyrite, specular hematite, calcite.
304'-305'	Diorite (?)
305'-338'	Monzonite breccia with quartzite. Specular hematite, pyrite.

RESULTS OF ULTRA VIOLET LIGHT EXAMINATION OF CORE:
0'-53' No scheelite observed.
53'-338' Scheelite present in core.

ASSAY RESULTS OF DIAMOND DRILL HOLE #5

SAMPLE NO.	DEPTH	Au oz./ton	WO_3 %
5-1	2'-13'	0.03	0.03
5-2	13'-27'	0.02	0.03
5-3	27'-42'	0.06	0.05
5-4	42'-54'	0.12	0.06
5-5	54'-65'	0.13	0.09
5-6	65'-76'	0.09	0.11
5-7	76'-86'	0.05	0.04
5-8	86'-97'	0.12	0.05
5-9	97'-110'	0.03	0.04
5-10	110'-120'	0.16	0.11
5-11	120'-131'	0.04	0.07
5-12	131'-142'	0.11	0.10
5-13	142'-154'	0.08	0.08
5-14	154'-165'	0.03	0.10
5-15	165'-177'	0.01	0.05
5-16	177'-188'	0.02	0.12
5-17	188'-202'	0.01	0.08
5-18	202'-212'	0.02	0.06
5-19	212'-223'	0.01	0.02
5-20	223'-238'	0.005	0.02
5-21	238'-250'	0.03	0.03
5-22	250'-260'	0.005	0.01
5-23	260'-269'	0.02	0.03
5-24	269'-281'	0.015	0.08
5-25	281'-291'	0.05	0.09
5-26	291'-301'	0.04	0.05
5-27	301'-322'	0.04	0.05
5-28	322'-333'	0.02	0.03
5-29	333'-338'	0.005	0.04
5-S-1 Sludge	2'-153'	0.11	0.03
5-S-2 "	153'-215'	0.04	0.09
5-S-3 "	215'-338'	0.02	0.07

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

September 30, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

LOG OF DIAMOND DRILL HOLE # 6

Elevation Collar of Hole: 7,240 BX Core Core Recovery 84%
Date Started: 9/8/52 Date Completed: 9/11/52 Total Depth; 304'

DEPTH	FORMATION
0'-126'	Monzonite breccia with quartzite. Hematite, limonite, first pyrite noted at 29'. Scheelite noted at 116'.
126'-132'	Vuggy diorite (?).
132'-218'	Monzonite breccia with quartzite. Heavier concentration of pyrite with black coating 132'-218'.
218'-246'	Monzonite porphyry with pyrite.
246'-256'	Monzonite breccia. Pyrite.
256'-304'	Monzonite porphyry with pyrite. Black coating on pyrite 266'-294'.

RESULTS OF ULTRA VIOLET LIGHT EXAMINATION OF CORE:

Scheelite noted at 116'
132'-172'
276'-285'

ASSAY RESULTS OF DIAMOND DRILL HOLE # 6:

SAMPLE NO.	DEPTH	Au oz/ton	WO_3 %
6-1	1'-7'	0.02	0.04
6-2	7'-19'	0.045	0.06
6-3	19'-30'	0.05	0.04
6-4	30'-43'	0.05	0.04
6-5	43'-54'	0.08	0.06
6-6	54'-71'	0.06	0.05
6-7	71'-84'	0.04	0.04
6-8	84'-96'	0.02	0.04
6-9	96'-108'	0.02	0.03
6-10	108'-118'	0.02	0.02
6-11	118'-130'	0.02	0.03
6-12	130'-145'	0.01	0.03
6-13	145'-156'	0.01	0.03
6-14	156'-172'	0.01	0.03
6-15	172'-188'	0.01	0.02
6-16	188'-199'	Trace	0.02
6-17	199'-211'	Trace	0.03
6-18	211'-224'	0.005	0.04
6-19	224'-237'	Trace	0.04
6-20	237'-246'	Trace	0.01
6-21	246'-256'	Trace	0.01
6-22	256'-266'	Trace	0.02
6-23	266'-276'	Trace	0.03
6-24	276'-285'	Trace	0.02
6-25	285'-294'	Trace	0.02
6-26	294'-304'	Trace	0.02

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

September 30, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

LOG OF DIAMOND DRILL HOLE # 7

Elevation Collar of Hole: 7,325' BX Core Core Recovery: 62%
Date Started: 9/12/52 Date Completed: 9/29/52 Total Depth: 510'

DEPTH	FORMATION
0'-87'	Monzonite breccia with quartzite. Hematite, limonite, pyrite.
87'-175'	Brecciated quartzite.
175'-179'	Black shale.
179'-242'	Diorite (?(porphyry with pyrite mineralization.
242'-250'	Black shale, some pyrite.
250'-253'	Gray quartzite, some pyrite.
253'-261'	Black shale, some pyrite.
261'-294'	Gray quartzite, brecciated with shale inclusions, pyrite.
294'-342'	Gray and black shale. Little pyrite.
342'-344'	White sandstone. Little pyrite.
344'-350'	Gray shale. " "
350'-351'	Sandstone " "
351'-371'	Gray shale " "
371'-377'	White sandstone " "
377'-436'	Gray shale " "
436'-453'	White to gray sandstone, little pyrite.
453'-457'	Gray shale, " "
457'-463'	Jet black shale " "
463'-477'	Gray quartzite " "
477'-503'	Gray black shale alternating with quartzite.
503'-509'	Black gray variegated shale.
509'-509'6"	Porous black shale.
509'6"-510'	Kaolinized monzonite porphyry with pyrite.

RESULTS OF ULTRA VIOLET LIGHT EXAMINATION OF CORE:

No scheelite observed.

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 29 1952

Budget Bureau No. 42-R1036.3.
Approval Expires 8-30-53.

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of August 1952 Docket No. DMEA 1387 Contract No. Idm-E-310
Operator's Name POTTER AND SIMS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri
Contract Amount, $ 77,520.00 Government Participation: 75 % Amount, $ 58,140.00

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent ~~Short Form~~ Contracts:						
Drilling	6,136.40	5770.10	11,906.50	5749.91	5,770.10	11,520.01
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	387.99	868.33	1256.32			
Supervision	500.00	1000.00	1500.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives	None	62.48	62.48			
Pipe	None	2.12	2.12			
Track						
Bits & Core Boxes	None	272.43	272.43			
Gas & Oil	56.11	169.77	225.88			
(4) Operating Equipment:						
Rental Bulldozer	None	700.00	700.00			
Purchase Core Split	None	123.74	123.74			
Depreciation	35.00	88.00	123.00			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment	4.33	7.82	12.15			
Sampling and Analysis	194.71	70.87	265.58			
Payroll Taxes		168.09	168.09			
Liability Insurance						
Rent & Subsistence	47.43	91.96	139.39			
				6,975.48	9,395.71	16,371.19
(8) Contingencies (specify):					*- 80.51	80.51
				**-333.90		333.90
				6,641.58	9,315.20	15,956.78
Totals	$7,361.97	9,395.71	16,757.68	[redacted]		

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 9/17/52 *Payee POTTER AND SIMS

Per G. R. Griswold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

→ NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 4981.19

Signature [illegible]
(Authorized Certifying Officer)

Date 10/20/52 Vou. No. DMA 53-51
(See other side)

52.61
26.57 * Previously Disallowed.
1.33
80.51 80.51

** Disallowance of overpayment made in July.

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idy E 310 in accordance with the terms of the contract.

Signature John H. Soule WKB Title Mining Engineer Date Sept 23, 1952

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature John F. Shea for W. H. King Title Operation Officer Date 10-14-52

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 29 1952

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of August 1952 Docket No. DMEA 1387 Contract No. Idm-E-310

Operator's Name POTTER AND SIMS Minerals Scheelite

Address P.O. Box 229, Joplin, Missouri

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT	
							Units	Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	$7361.97	991	14,370.15	1945	$7.39	4000	
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails		None		2,263.79	4370	0.52		
TOTAL DISTRIBUTED COSTS		7361.97		16,633.94				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased				123.74				120.00
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		7361.97		16,757.68				

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

Date 9/17/52 Operator POTTER AND SIMS

Per G. R. Grimwood Title Agent

REMARKS:

→ NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

U. S. GOVERNMENT PRINTING OFFICE 205676

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Administrative Audit Difference Statement

Date: October 20, 1952
Payee's
Reference: Progress
Report - August 1952

Potter & Sims
P. O. Box 229
Joplin, Missouri

Upon examination of the above Payee's Reference a difference was found which made it necessary to suspend your account accordingly:

Amount Claimed $7,361.97

Difference $ 720.39

Amount Approved $6,641.58

The reason for the difference was due to:

Disallowance for overcharge on drilling per foot, as allowed per contract (July and August).

July claimed	7.35 per ft.		
allowed	7.00 " "		
Difference - 954 ft. @ .35			333.90
August claimed	7.39 " "		
allowed	7.00 " "		
Difference - 991 ft. @ .39			386.49
			$720.39

Any reclaim for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

N. E. Stokes
Audit Section

R-IV-B & F Form No. 4
4-15-52 D

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

October 13, 1952

Memorandum

To: T. A. Christensen

From: Acting Chief, Mining Division, Region IV

Subject: DMEA Docket 1387, Contract Idm-E310 (Tungsten) Potter & Sims, Santa Fe County, New Mexico - Operator's Monthly Progress Report, for the period of August 1952

Enclosed are the original and four copies of Form MF-104 and Form MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been accomplished as authorized in the contract and payment is recommended as reported on Form MF-104, contingent on your verification of the correctness of applicable rates and mathematical accuracy of computations, except for the following deductions:

Costs in excess of $7.00 per foot which is stipulated in the contract as an "allowable maximum"

Deductions

July excess over $7.00 per foot which was allowed through oversight	
954 feet @ $0.35 per foot	$333.90
August excess costs	
991 feet @ $0.39 per foot	386.49
Total disallowances	$720.39

John F. Shaw
For W. H. King

JWT:jp
Enclosures

cc Secy to Oper Committee (2)
WRStorms
Contract
Chron
AHKoschmann (2)

MINING DIVISION
REGION IV

October 7, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

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

Subject : August 1952 Progress Report, DMEA Docket 1387X, Contract Idm-E310, Potter & Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above report:

(1) Bureau of Mines engineer's report;

(2) Operator's narrative report;

(3) Forms MF-104 and 104A with documentation.

Also enclosed are two extra copies of our engineer's report.

As all work conforms to the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch
Mining Division, Region IV

CC W. H. King (6)
DMA-1387X
DF

WRStorms:frj

MINING DIVISION
REGION IV

September 23, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Branch
Mining Division, Region IV

From : John H. Soule', Mining Engineer, Tucson, Arizona

Subject : Progress Report for August 1952, Docket DMEA-1387, Contract Idm-E310, Potter and Sims, Cunningham Hill Breccia Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico.

The Cunningham Hill breccia tungsten project was visited on September 2, 1952 to observe the progress made during the month. While passing by on another job, a second short visit was made on September 18, 1952.

Hole No. 3 was 90 feet deep at the beginning of the month and was completed at a depth of 539 feet. Scheelite visible under the ultra violet lamp was rare and this is borne out by the assays although the section from 257 feet to 309 feet contained almost an average of one pound and one-half of tungstic oxide per ton.

Hole No. 4 was started and completed to a depth of 326 feet. Under the ultra-violet lamp, appreciable scheelite was observed from the beginning to about 256 feet. However, the average assays from the core are very low, averaging no better than assays from core samples where no scheelite is visible under the lamp. This anomaly needs some explanation because it is definitely established that the mineral scheelite is present and that the scheelite is nearly molybdenum free. It is also noted that two check samples (reruns on the same pulp) from the area showed or indicated that there may be some difficulty in analysing the low grade ores. One of the checks showed a lower tungsten content than the first assay while the other showed a higher tungsten content with the average being a little higher. Such a condition casts doubt on all of the assays.

CC W. H. King (Orig. & 6)
DMEA-1387
DF

JHSoule':frj

Hole No. 5 was started and reached a depth of 216 feet at the end of the month. Appreciable scheelite was visible in the core from about 53 feet to the bottom.

Based on the results obtained by the ultra-violet lamp, it seems that the project may be partly successful in that a fairly large tonnage of scheelite bearing rock may be indicated by the drilling. While this tonnage may not reach the original expectations of the field team, it still may be measured in millions of tons. Final judgment of the grade of the material will be deferred until the questionable assay results are settled.

ANALYSES OF ENTRIES ON FORM MF-104

Item 1. Independent Contracts.

A total of 991 feet was drilled on the project during the month of August. The total costs were $5,939.60 to which is added $196.80 due from July drilling which makes a total of $6,136.40. This is the amount entered of Form MF-104 and is approved as being within the terms of the contract. A breakdown of the costs and corrections for July follow:

Hole	Standpipe		0 to 400 feet		400 to 600 feet		Cementing	
No.	Feet	Costs	Feet	Costs	Feet	Costs	Costs	Totals
July billing								
1	11.5	70.15	553.5	3,044.25				3,114.40
2	16.0	97.60	283	1,556.50				1,654.10
3	11.0	67.10	79	434.50				501.60
								5,270.10
Mobilization charge								500.00
								5,770.10
Corrected July billing								
1	4.0	24.40	396	2,178.00	165	1,006.50	118.50	3,327.40
2			299	1,644.50				1,644.50
3			90	495.00				495.00
Mobilization charge								500.00
								5,966.90
Addition to July billing								196.80
August billing								
3			310	1,705.00	139	847.90	228.00	2,780.90
4	9	54.90	317	1,743.50			126.50	1,924.90
5	3	18.30	213	1,171.50			44.00	1,233.80
								5,939.60
July addition								196.80
Entry on August MF-104								6,136.40

The later invoices show, instead of driving pipe, the drilling done to allow entry of the standpipe. The cementing item is based on an hourly rate plus the supplies used in the cementing.

The costs are documented. $16,093.50 remains in this account.

Item 2. Labor and Supervision.

Labor for the period consisted of one sampler whose total wages for the month were $387.99. Although $350.00 is allowed by the contract, the $387.99 includes overtime as shown in the accompanying certified copy of the payroll. This amount is approved and there remains $248.09 in this account.

Supervision is allowed by the contract at $500.00 per month. This amount is approved. A request for an amendment allowing the first month's costs which were used entirely for road building, to be charged to the $4,000.00 allowed for the road work is in process. If such a request is denied, then this account has reached the allowable maximum. If the request is granted, there remains $500.00 in this account. These costs are supported by documentation.

Item 3. Operating Materials and Supplies.

Only gas and oil (and attendant services) were charged to this item for the month of August. These total $56.11 and are approved as they are in accord with the terms of the contract. They are supported by documentation. A total of $341.62 remains in this account.

Item 4. Operating Equipment.

Depreciation of automotive equipment used on the project is allowed by the contract at the rate of $25.00 per month for a passenger car and $10.00 per month for a truck. This totals $35.00, the amount entered of Form MF-104 and is so approved. No documentation is necessary. $35.00 remains in this account assuming that the costs for June are allowed to be charged to the road building fund. If not, the fund totals nothing.

Item 7. Miscellaneous.

A total of $4.33 was spent for repairs to equipment. This is allowed by the terms of the contract, is approved and is supported by documentation. $62.85 remains in this account.

Forty two tungsten assays were done during the month. These are at $4.00 each which makes a total of $168.00 less 10% or $151.20. This is in accordance with the terms of the contract where 800 assays costing $3,400.00 are allowed only the assays were estimated to cost $4.25 each. A total of $3,183.92 remains in this account.

Fifty gold assays costing $50.00 are allowed by the terms of the contract. The assays actually cost $1.25 less 10%. For the month of August, 20 assays were made at a cost of $36.25 less 10% or $32.63. Fifteen assays costing $16.87 were made during July. The total expended for gold assays is $49.50 which leaves only $0.50 in this account. No more assays for gold will be allowable under the terms of the contract. The costs for the month of August are documented and are approved. The documentation contains more charges than were alloted to the project.

As the contract states "800 WO_3 assays, including transportation at $4.25 each", documented express charges are added to the cost of the assays. These express charges total $10.88 and are approved although these costs may have been entered under Item 8, Contingencies. However, as the contract lumps them with the assaying charges, they are left so on Form MF 104. The $10.88 transportation charges plus $151.20 for the tungsten assays plus the $32.63 for the gold assays totals $194.71, the amount entered on Form MF 104. The entry amount is approved.

Subsistence and office rent is allowed by the contract. This totals $47.43 of which $17.85 is for rent and the remainder is for subsistence. The sum is documented and is so approved.

A total of $7,361.97 was expended on the project during August. This added to the previously reported total of $9,395.71 makes the total to date $16,757.68. All bills and the Form MF-104 have been checked and found to be arithmetically correct. A total of $24,062.32 remains unexpended of the $36,820.00 allowed for the first stage of the project plus the $4,000.00 allowed for building roads.

DISCUSSION OF FORM MF-104A

All of the $7,361.97 costs for the month of August are charged to diamond or core drilling. This makes the total spent on this phase of the project $14,370.15. This amount does not include supervision and the other costs that were charged to the road work during the month of June and prior to the start of the drilling. Whether this will be allowed is dependent upon the approval of the request for an amendment so allowing. Based on the costs above, a per-foot cost of $7.39 is indicated for the drilling.

The arithmetic of the form has been checked and found to be correct.

John H Soule'

JOHN H. SOULE', Mining Engineer
Arizona-New Mexico Branch
Mining Division, Region IV

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

NARRATIVE REPORT FOR MONTH OF AUGUST 1952

Contract Idm-E-310 DMEA Docket 1387

The drive shaft for the drill arrived on August 4th and the drill was repaired and drilling started again on August 5th on Drill Hole #3. This hole was completed on August 14, 1952 to a depth of 539 feet. Although the hole was scheduled to go to 570 feet it was decided by the undersigned to stop at 539 feet as circulation stopped at 517 feet and not enough scheelite had been found in the core. The 10 foot core barrel wore out on August 9th and a piece of casing was tried but the core recovery was not satisfactory so the drillers used their 5 foot core barrel with a resultant loss of footage drilled per shift. The steel strike is reportedly responsible for the lack of a replacement 10 foot core barrel. The ground in Hole #3 was well brecciated monzonite with a preponderance of quartzite. Some scheelite was observed from 219 feet to 536 feet. This hole had to be cemented from 0 to 50 feet and from 60 feet to 260 feet. See accompanying log of hole for description and assays. Setting up, repairs and drilling time amounted to 27 shifts for an average of 20 feet per shift.

On August 6th Mr. Soule' of the Tucson office of the United States Bureau of Mines visited the project.

An amendment to subject contract to extend the time beyond the 3 months specified in Exhibit A was requested on August 12th.

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

The drill was moved to Drill Station #4 on August 15 and 16th and drilling started on August 18th. An appreciable amount of scheelite was observed in the core from the surface to a depth of 256 feet. The core from 105 feet to 115 feet contained several crystals of scheelite one quarter of an inch in diameter. The core was practically barren of scheelite from 256 feet to 292' 8" and then scheelite was observed from 292'8" to 294 feet. Practically no scheelite was observed from 294 feet to 326 feet. The ground was well brecciated monzonite with a preponderance of quartzite. All drill water was lost at 204 feet and the hole was cemented from 220 feet back to 120 feet. Drilling was stopped at a total depth of 326 feet on August 24, 1952. Setting up and drilling time amounted to 14 shifts for an average of 23 feet per shift.

Telegraphic approval was received on August 22d extending drilling time through the month of September.

The drill was moved to Drill Station #5 on August 25th and drilling started August 26th.

Messrs.Potter and Sims visited the project August 25-27th. An amendment to subject contract was requested on August 27th which would permit the drilling of 3 holes along the grid line running northwesterly through DMEA hole #4, as there appears to be a zone of scheelite bearing rock some 200 feet wide by 1,000 feet long with a possible average depth of 250 feet.

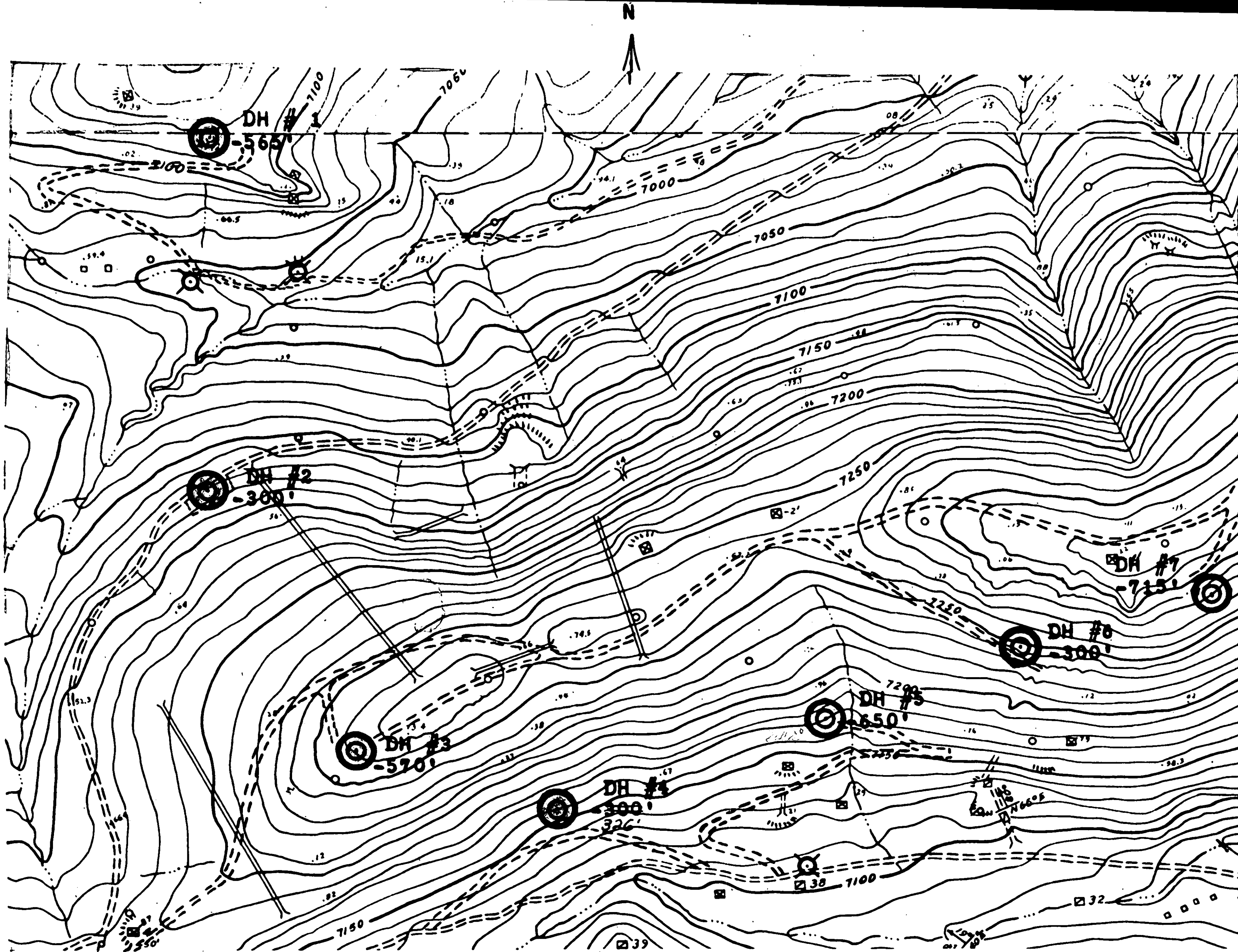
POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

Scheelite appeared in the core in appreciable amounts in Drill Hole #5 at a depth of 53 feet and continues to the present depth of 212 feet as of August 31, 1952.

I certify that all July bills have been paid.

POTTER AND SIMS
G. R. Griswold
G. R. Griswold, Agent



August 31, 1952
S.R. Griswold

POTTER AND SIMS
PROGRESS MAP, CUNNINGHAM HILL TUNGSTEN AREA
ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO
SCALE: 1 INCH = 200 FEET
CONTOUR INTERVAL: 10 FEET

DMA 1387x CONTRACT IDM-E-310

LEGEND

= = = =	NEW ROAD CONSTRUCTION
◎ VERTICAL	DIAMOND DRILL HOLES COMPLETED
◎ VERTICAL	DRILL HOLE PARTIALLY COMPLETED
○	OLD CHURN DRILL HOLE

POTTER AND SIMS
1500 Las Lomas Road, N.E.
Albuquerque, New Mexico

August 30, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310

DMEA Docket 1387

ASSAY RESULTS FROM DIAMOND DRILL HOLE # 2

Sample No.	Depth	Au (oz.)	Cu %	WO_3 %
C-10	25' - 35'	Trace	0.04	Trace
C-11	44' - 54'	Trace	Nil	0.05
C-12	72' - 81'	Trace	Trace	Trace
C-13	91' - 101'	Trace	Nil	0.04
C-14	152' - 162'	Trace		0.03
C-15	203' - 212'	Trace		0.05
C-16	248' - 258'	Trace		0.05
C-17	280' - 293'	Trace		0.06

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

August 15, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-31C DMEA Docket 1387

LOG OF DIAMOND DRILL HOLE #3

Elevation Collar of Hole: 7260' BX Core Core Recovery 89%

Date Started: 7/27/52 Date Completed: 8/14/52 Total Depth: 539'

DEPTH	FORMATION
0 - 11' (NX Core)	Badly fractured monzonite breccia with quartzite inclusions. Oxidized.
11' - 104' (BX Core)	Oxidized monzonite breccia with quartzite inclusions. Hematite, limonite, magnetite, and siderite as accessory minerals. First pyrite noted at 104'. Rock has been kaolinized. Cemented from 0 to 50'.
104' -219'	Monzonite breccia with quartzite. First scheelite noted at 219'. Pyrite and hematite abundant in fractures. Kaolinized.
219'-255'	Monzonite breccia with quartzite. Pyrite and hematite abundant in fractures. Little scheelite. Kaolinized.
255' - 259'	Syenite porphyry. No mineralization.
260' - 473'	Monzonite breccia with quartzite. Mud seam at 265'. Cemented from 260' back to 60'. Fairly well mineralized with pyrite and specular hematite. Calcite noted in cavities. Kaolinized. Slickensides at 463'. Little scheelite.
473' - 539'	Monzonite breccia with quartzite inclusions. More quartzite. Andesite noted at 482'. Well mineralized with pyrite and specular hematite. Kaolinized. More quartzite than monzonite from 473' to 539'. Little scheelite.

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

August 30, 1952

Cunningham Hill Area, Ortiz Mine Grant

Santa Fe County, New Mexico

Contract Idm-E-310

DMEA Docket 1387

DIAMOND DRILL HOLE # 3

Results of Ultra Violet light examination of core:

Minor amounts of scheelite noted from 219' to 539'.

ASSAY RESULTS:

Sample No.	Depth	Au (oz.)	WO_3 %
C-18	49' - 58'	Trace	0.04
C-19	96' - 108'	Trace	0.02
C-20	142' - 151'	Trace	0.02
C-21	202' - 213'	0.005	0.05
3-20	213' - 227'	Trace	0.03
3-21	227' - 237'	0.02	0.05
3-22	237' - 248'	0.01	0.03
C-22	248' - 257'	Trace	Trace
3-24	257' - 266'	Trace	0.08
3-25	266' - 277'	0.01	0.08
3-26	277' - 288'	Trace	0.07
3-27	288' - 298'	Trace	0.07
3-28	298' - 309'	Trace	0.06
3-32	349' - 359'	Trace	0.06
3-36	394' - 404'	Trace	None
3-41	454' - 464'	0.02	Trace
3-45	527' - 539'	0.005	None

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

August 30, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

LOG OF DIAMOND DRILL HOLE #4

Elevation Collar of hole: 7138' BX Core Core Recovery: 92%

Date Started: 8/15/52 Date Completed: 8/24/52 Total Depth: 326'

DEPTH	FORMATION
0 - 9'	Overburden
9' - 21' (NX Core)	Monzonite Breccia with quartzite. Psilomelane, pyrite and hematite as accessory minerals in vugs and fissures. Appreciable scheelite. Kaolinized.
21' - 105' (BX Core)	Monzonite breccia with quartzite. Hematite, pyrite, siderite, calcite and scheelite as accessory minerals in vugs and fractures. Scheelite first observed in monzonite porphyry at 100 feet. Black coating noted on pyrite, probably specular hematite. Kaolinized.
105' - 115'	Monzonite breccia with quartzite. Most scheelite thus far. One quarter inch crystals at 113'. Specular hematite, pyrite, calcite, siderite abundant in vugs and fractures. Kaolinized.
115' - 256'	Monzonite breccia with quartzite. Scheelite fades out at 256'. Specular hematite, pyrite, calcite, and siderite in vugs and fractures. Kaolinized.
256' - 292'8"	Monzonite breccia with quartzite and unaltered monzonite porphyry. No scheelite observed. Pyrite and specular hematite still present. Kaolinized.
292'8" - 294'	Monzonite breccia with quartzite. Scheelite present. Kaolinized.
294' - 326'	Monzonite breccia with quartzite. No scheelite observed. Specular hematite and pyrite abundant.

POTTER AND SIMS
1500 Las Lomas Road N.E.
Albuquerque, New Mexico

September 15, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

DIAMOND DRILL HOLE #4

Results of Ultra Violet light examination of core:
9' - 256' An estimated 38% of the core contained scheelite.
256' - 292'8" No scheelite observed.
292'8" - 294' Scheelite observed in core.
294' - 326' No scheelite observed.

ASSAY RESULTS:

SAMPLE NO.	DEPTH	AU (oz/ton)	WO_3 %
4 - 1	9' - 14'	Trace	0.03
4 - 2	14' - 21'	Trace	0.04
4 - 3	21' - 31'	Trace	0.02
4 - 4	31' - 41'	Trace	0.02
4 - 5	41' - 51'	Trace	0.03
4 - 6	51' - 61'	Trace	0.02
4 - 7	61' - 73'	Trace	0.06
4 - 8	73' - 86'	.003	0.08
4 - 9	86' - 96'	Trace	0.04
4 - 10	96' - 105'	.005	0.04
4 - 11	105' - 115'	.005	0.07
4 - 12	115' - 124'	Trace	0.03
4 - 13	124' - 134'	.005	0.03
4 - 14	134' - 146'	.01	0.25
4 - 15	146' - 157'	.01	0.11
4 - 16	157' - 167'	.005	0.04
4 - 17	167' - 177'	.01	0.05
4 - 18	177' - 187'	.01	0.02

POTTER AND SIMS
1500 Las Lomas Road, N.E.
Albuquerque, New Mexico

September 15, 1952

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 DMEA Docket 1387

DIAMOND DRILL HOLE #4

ASSAY RESULTS CONTINUED:

SAMPLE NO.	DEPTH	AU (oz/ton)	WO_3 %
4 - 19	187' - 197'	.05	0.09
4 - 20	197' - 206'	.06	0.06
4 - 21	206' - 216'	.06	0.07
4 - 22	216' - 229'	.075	0.04
4 - 23	229' - 240'		
4 - 24	240' - 252'		
4 - 25	252' - 262'		
4 - 28	281' - 293'		
4 - 29	293' - 302'		

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Bureau of Budget No. 46-R6.3.
Approval expires 6-30-53.
Defense Minerals Administration
RECEIVED
OCT 13 1952

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of July, 1952 Docket No. DMEA 1387 Contract No. Idm-3-310
Operator's Name POTTER AND SIMS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri
Contract Amount, $ 7,258.18 Government Participation: 75 % Amount, $ 5,445.64

ITEMS OF COSTS	FOR OPERATOR'S USE: Monthly Total	Totals Previously Reported	Totals To Date	FOR GOVERNMENT USE ONLY: Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent ~~Short Term~~ Contracts:						
Drilling	$5,770.10	None	$5,770.10			
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	453.92	414.41	868.33			
Supervision	500.00	500.00	1,000.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives	None	62.48	62.48			
Pipe	0.94	1.18	2.12			
Track						
Bits & Core Boxes	227.45	44.98	272.43			
Gas & Oil	60.25	109.52	169.77			
(4) Operating Equipment:						
Rental Bulldozer	None	700.00	700.00			
Purchase Core Splitr.	None	123.74	123.74			
Depreciation	35.00	53.00	88.00			
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment	7.82	None	7.82			
Sampling and Analysis	70.87	None	70.87			
Payroll Taxes	79.22	88.87	168.09	52.65	88.87	141.52
Liability Insurance						
Rent & Subsistence	52.61	39.35	91.96	00	91.96	91.96
(8) Contingencies (specify):						
Totals	7255.16	2137.55	9392.71	7,179.00	2,188.81	9,367.81

I certify that the above bill is correct and just and that payment therefor has not been received.

Date August 11, 52 Payee POTTER AND SIMS

Per S. R. Griswold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 5384.25

Signature (Authorized Certifying Officer)

Date 10/1/52 Vou. No. DMA 53-41

(See other side)

* Previous Disallowances

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DMA E 310 in accordance with the terms of the contract.

Signature John H Searle Title Mining Engineer Date Aug 20, 1952

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE:

Signature ..... Title ..... Date .....

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(*a*) *Form MF–104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(*b*) *Form MF–104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(*c*) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF–104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF–104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF–200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF–200; and delete word "Independent" if the contract reported is on Form MF–200 (A). Also, report work paid for on a unit basis under contract Form MF–200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF–104 when submitted for reimbursable expenses incurred under contract Form MF–200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF–200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF–104 is required to be documented. The four copies of Form MF–104 are not to be thus supported.

Form MF–104 submitted for reimbursement under fixed price contracts on Form MF–200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF–104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 13 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of July 1952 Docket No. DMEA 1387 Contract No. Idm-E-310
Operator's Name POTTER AND SIMS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core	feet	$7008.18	954	7,008.18	954	$ 7.35	4,000	
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails	feet	250.00	483	2,263.79	4,370	0.52		
TOTAL DISTRIBUTED COSTS		$7258.18		$9,271.97				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased				123.74				$ 120.00
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$7258.18		$9,395.71				

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

Date Aug. 11, 1952 Operator POTTER AND SIMS

Per G. R. Griswold Title Agent

REMARKS:

→ NOTE.—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.

(Instructions on reverse)

(For Government use only)

INSTRUCTIONS

Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

U. S. GOVERNMENT PRINTING OFFICE 205676

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Administrative Audit Difference Statement

Date: September 30, 1952
Payee's
Reference: Progress
Report - July, 1952

Potter and Sims
P. O. Box 229
Joplin, Missouri

Upon examination of the above Payee's Reference a difference was found which made it necessary to support your account accordingly:

Amount claimed $ 7,258.18

Difference $ 79.18

Amount Approved $ 7,179.00

The reason for the difference was due to:

Insufficient Documentation	
Rent and Subsistance	52.61
FICA and Unemp. Comp.	26.57
	79.18

Any reclaim for deductions made above must be supported by the ORIGINAL OF THIS FORM.

Very sincerely yours,

H. E. Stokes
Audit Section

R-IV - E&F Form No. 4
4-15-52 D

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

September 18, 1952

Memorandum

To: T. A. Christensen

From: Acting Chief, Mining Division, Region IV

Subject: DMEA Docket 1387, Contract Idm-E-310, (Tungsten) Potter and Sims, Santa Fe County, New Mexico - Operator's Monthly Progress Report for the period of July, 1952

Enclosed are the original and four copies of Form MF-104, Narrative Report, and Engineer's Report for the above period.

Work accomplished is in accordance with the contract and payment is recommended as follows:

Total Reported		$7,258.18
Deductions		
Rent and Subsistance - (Inadequate documentation)	$ 52.61	
F.I.C.A. and Unemployment Compensation	26.57*	
Total deductions -		79.18
Balance		$7,179.00
Reimbursement - 75% Government Participation		$5,384.25

*May be reclaimed at the end of the quarter, documented by a copy of the operators quarterly report.

This letter supersedes the letter dated September 2, 1952.

W. H. King
W. H. King

Enc.
JWT:oc
cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.
Koschmann (2)

Mining Division
Region IV

September 2, 1952

Memorandum

To: T. A. Christensen

From: Acting Chief, Mining Division, Region IV

Subject: DMEA Docket 1387, Contract Idm-E-310 (Tungsten), Potter and Sims, Santa Fe County, New Mexico - Operator's Monthly Progress Report for the period of July 1952

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work accomplished is in accordance with the contract and payment is recommended as follows:

Total Reported		$7,258.18
Deductions		
Payroll tax - withheld pending documentation by copy of billing	79.22	
Rent and Subsistence - inadequate documentation	52.61	131.83
Balance		7,126.35
Reimbursement - Government Participation 75%		$5,344.76

Enclosures

W. H. King

JWT:jp
cc Secty to the Operating Committee (2)
WRStorms
Contract
Chron
AHKoschmann (2)

MINING DIVISION
REGION IV

April 25, 1952

Memorandum

To : W. L. King, Acting Chief, Mining Div., Region IV

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

Subject : July 1952 Progress Report, DMA Docket 1387X, Contract IGm-2310, Potter & Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above report:

(1) Bureau of Mines engineer's report;
(2) Operator's narrative report;
(3) Forms MF-104 and 104A, original of Form MF-104 supported by invoices, etc.

Also enclosed are two extra copies of our engineer's report.

Payroll taxes as shown on Form MF-104 have been incurred, but not paid so I would recommend that the sum of $79.22 be deducted from the total, then the Government's 50 percent share be paid, as the work conforms to the contract.

Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch
Mining Division, Region IV

CC W. L. King (6)
DMA-1387X
DF

WRStorms:frj

MINING DIVISION
REGION IV

August 25, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Branch, Mining Division, Region IV, Tucson, Arizona.

From : John H. Soule', Mining Engineer, Tucson, Arizona.

Subject : Progress Report for July 1952, Docket DMEA 1387, Contract Idn E310, Potter and Sims, Cunningham Mill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico.

The Cunningham Mill area of the Ortiz Mine Grant was visited on August 6, 1952 to observe the progress made on the DMEA project. Road and drill site construction was completed during the first part of the period. The drill contractor arrived on July 7, 1952 and drilling started immediately thereafter on the site or Hole No. 1 as located near the operator's proposed Hole No. 14 as outlined in the contract. The hole was bottomed at 565 feet as suggested in the contract.

Move was made to the site of Hole No. 2 which is located near the operator's proposed Hole No. 16. This is in accoreance with the contract. This hole was bottomed at 299 feet which also is in accordance with the terms of the contract.

The drill was next moved to the site of Hole No. 3 which is located about 250 feet southwest of the operator's proposed Hole No. 7 which agrees with the contract terms. This hole was about 260 feet deep at the time of the visit showing that the 90-foot depth reported on August 1 is reasonable.

Much of the drilling was done without water return but core recovery has been exceptionally good. Disappointing results have been obtained by lamping the cores as very little scheelite was noted. Assay results on the cores from the first hole verified the scarcity of scheelite mineralization. As this project's success is dependent upon finding an enormous body of low-grade scheelite mineralization, the above results seem to indicate that such does not exist and that the second phase of the project will not be done.

CC W. H. King (Orig. & 6)
DMEA-1387X
DF

JHSoule':frj

ANALYSES OF ENTRIES ON FORM MF-104

Item 1. Contracts, Drilling. A total of 954 feet was drilled during the month of July. The details are tabulated as follows. All drilling is "BX" size.

Hole No.	Standpipe-feet	Drilling-feet	Rate	Amount
1	11.5		$6.10	$ 70.15
		553.5	5.50	3,044.25
Totals	565			$3,114.40
2	16.0		6.10	97.60
		283.0	5.50	1,556.50
Totals	299			1,654.10
3	11.0		6.10	67.10
		79.0	5.50	434.50
Totals	90			501.60
Grand totals	954			$5,270.10

To the above grand total, a $500.00 mobilization charge is added making the total $5,770.10, the total entered on Form MF-104. An error in the invoice is noted. According to the agreement between the drill contractor (Boyles Brothers) and the operators (Potter and Sims), in which drilling is to be paid at a rate of $5.50 for 0 to 400 feet and at a rate of $6.10 from 400 to 600 feet. In Hole No. 1, the $5.50 rate was charged to the depth of 565 feet, excluding standpipe, which indicates that 165 feet of drilling was billed at the $5.50 rate instead of the $6.10 rate. This amounts to an under charge of $99.00. This shortage may appear in a later invoice.

The amount of $5,770.10 as entered on Form MF-104 is approved and is documented with a copy of the drill contractor's invoice. The terms of the contract have been met, with the exception noted which is an under charge.

ITEM 2. Labor and Supervision. Labor totalled $453.92 during the month as shown by a certified copy of the payroll. Some of this amount is charged to road work and the remainder to drilling. The approximate distribution was $129.10 to road work.

Supervision charges are shown on the accompanying certified copy of the payroll and approximately $115.58 of the total $500.00 is charged to road work and the remainder to drilling.

The total labor and supervision costs were $953.92 and this sum is entered on Form MF-104. The entries are supported by documentary evidence and are approved if no conflict is found with the previous

month's payroll. With reference only to the labor payroll, it will be noted that pay was made for the period ending July 2, 1952. As this includes pay for the latter part of June, a check should be made of the June payroll to be sure that there is no overlap in the pay. This office does not have a copy of the payroll to check. It is felt that everything is in order and it is noted that the present (July) payroll covers through the week ending July 30, 1952.

ITEM 3. Operating Materials and Supplies. On the pipe line, 3 small items were purchased to be used on the sludge tank setup. Although there is no fund from which to purchase these items, they are necessary to the work. They were 2 small nipples at 30 cents each and one reducer at 32 cents. This totals 92 cents which, plus 2 cents tax equals the $0.94 entered on Form MF-104. This purchase is approved and supporting documents accompany the forms.

On the bits and core boxes line is entered $227.45. Of this amount, $5.43 was for reconditioning rock bits used in the road work. This amount is supported by a photostatic copy of the invoice and the entry is approved. The core boxes were purchased from the Love Box Co. and sent freight collect. The charges totalling $222.02, are approved and are supported by documents.

Under gas and oils, a total of $60.25 is entered. This amount is approved and is supported by documents of $41.30 from the University Service Station of Albuquerque, New Mexico and $18.95 from the Madrid Supply Co. at Madrid, New Mexico. Small errors were noted in the charge slips from the University Service Station and the total of $41.30 is exceeded by two cents by the total of the individual slips.

ITEM 4. Operating Equipment, Depreciation. This is allowed by the contract at $10.00 per month for a truck and $25.00 per month for a car. This totals $35.00, the amount entered on Form MF-104 and said amount is approved.

Item 7. Miscellaneous. Repairs were necessary to one of the project vehicles when a rock made a hole in the oil pan. The cost of this work was $7.78 and is documented by the bill from Huber Motor Co. at Madrid, New Mexico. This amount is approved. An additional 4 cents was spent for a small bolt purchased from The Madrid Supply Co. which makes the total repairs to equipment $7.82. This is the amount entered on the Form MF-104 and as such is approved.

Fifteen core samples were analysed for gold and tungsten as allowed by the contract. The gold analyses were $1.25 each and the tungsten analyses were $4.00 each. The total was $78.75 from which 10 percent is deducted making the total of $70.87. This is the amount entered on Form MF-104, is approved, and is supported by documentation.

Payroll taxes totalled $79.22 and their derivation is shown in the following table:

Item	Rate	Labor ($453.92)	Supervision($500.00)
Workmen's compensation	5.519%	$25.05	$27.60
Unemployment Insurance	2.7%	12.26	———
F.I.C.A.	1.5%	6.81	7.50
	Totals	$44.12	$35.10

The sum of the above totals is $79.22, which is the amount entered on Form MF-104. The above amounts are due quarterly and will not be paid until October 1952. The amounts are approved as correctly calculated.

Rent and subsistence costs were $52.61. This is allowed by the contract and is so approved. The costs are documented.

The arithmetic of the forms was checked and found to be correct for the July entries. A disallowal on the June account of $1.33 necessitates some changes in the second and third columns of the form. These are lightly pencilled on the last carbon copy of the form and as such, the form is approved and the costs are in accordance with the contract and with minor possible exceptions which are discussed in the text.

DISCUSSION OF FORM MF-104A

As mentioned in the previous section, some of the labor charges were distributed to road work. With supplies and other costs, a total of $250.00 was distributed to road work. This seems a reasonable distribution. All of the other costs were charged to core drilling. These costs totalled $7,008.18. Corrections were made on the last carbon copy of this form to compensate for the $1.33 disallowance made in June. The form is approved as corrected.

Total costs for the month of July were $7,258.18 bringing the totals to date to $9,394.38. The unit costs were $7.35 per foot of core drilling and $0.52 per foot of road constructed. The drilling costs are below the $9.205 suggested by the contract. No unit costs for road work were suggested by the contract.

John H. Soule'

John H. Soule', Mining Engineer
Arizona-New Mexico Branch
Mining Division, Region IV

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

NARRATIVE REPORT FOR MONTH OF JULY 1952

Contract Idm-E-310 DMEA Docket 1387

Road work was completed for Stage I on July 2, 1952 and Pat Candelario was laid off. Boyles Bros. Drilling Company moved onto the job with a new drill rig on July 7, 1952. A partial shipment of cardboard core boxes were received on July 10th and the final shipment received on July 14th. The contractor (Boyles Bros.) started two shift operation on July 11th on Hole #1. Drilling progressed satisfactorily to 33 feet where a crevice was encountered and circulation lost. Hole was cemented to 59 feet and circulation lost again at 61 feet. Cemented from 33 feet to 83 feet and circulation regained.

Marfak No. 2 grease was used on the drill rods to reduce vibration and this grease evidently emulsified in the water and recirculated. This grease fluoresces under the Ultra Violet light and closely resembles scheelite. Crater Compound mixed with Marfak No. 3 greatly reduced the troublesome grease fluorescence. The entire core was split up to 538 feet so as to positively identify the scheelite. The scheelite found in the core was very spotty in distribution and the amount observed was disappointing.

Geologically, Diamond Drill Hole No. 1 seems to approximate Upper Dolores Churn Drill Hole #1. The first 65 feet in Diamond Drill Hole #1 were in the oxidized zone and contained oxides and sulfides of copper. The brecciation seems to decrease in depth.

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

A 23 foot section of slow drilling was encountered at 312 foot depth (6802 feet above sea level) in Diamond Drill Hole #1 and this same formation, lasting for approximately 30 feet was encountered in Upper Dolores Churn Drill Hole #1 at 267 foot depth (6779 feet above sea level). This formation is andesite porphyry.

No definite concentration of scheelite was observed in Diamond Drill Hole No. 1. See accompanying log of hole for description and assays. This hole was completed on July 21st at a total depth of 568 feet with an overall core recovery of 97.8%. Setting up and drilling time amounted to 22 shifts or an average of 25 feet per shift.

On July 22, between drill site #3 and Madrid, New Mexico a front wheel on the Plymouth sedan knocked loose a rock which struck the crankcase and made a hole which necessitated repair of the crankcase.

The drill was moved and set up on Drill Hole #2 on July 22d and Hole #2 was completed July 26th at a total depth of 299 feet with an overall core recovery of 92%. A small amount of chalcopyrite was observed to a depth of 53 feet. A crevice was encountered at 264 feet and circulation was lost. The ground was badly broken from 264 feet to 299 feet. No appreciable concentration of scheelite was observed under the Ultra Violet light in the core from this hole. Setting up and drilling time amounted to 9 shifts or an average of 33 feet per shift.

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

The drill was moved to Drill Hole #3 on July 28th and reached a depth of 90 feet on July 31st when a drive shaft broke on the drill. New parts are being sent Air Express.

At the present rate of progress on this project it appears that the contract will not be completed within the three months allotted. Therefore a request is being prepared requesting that the time be extended, without increasing the overall cost of the project, to allow for completion.

I certify that all June bills have been paid.

G. R. Griswold
G. R. Griswold, Agent

POTTER AND SIMS

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 July 23, 1952

Log of Diamond Drill Hole # 1

Elevation Dollar of Hole: 7114' BX Core Core Recovery 97.8%

Date Started: 7/7/52 Date Completed: 7/21/52 Total Depth: 568'

DEPTH	FORMATION
4 - 14' (NX core)	Monzonite breccia, oxidized, containing some limonite, hematite, malachite, manganese stain.
14 - 56' (BX core)	Monzonite breccia, oxidized, containing some limonite, hematite. First pyrite noted at 26'. Pyrite, chalcopyrite in seams. Lost water at 33'.
56 - 192'	Monzonite breccia. Oxidized zone ends at 56'. Cemented hole from 59' back to surface. Specular hematite, magnetite, pyrite, little chalcopyrite in seams and vugs. Sericite, altered feldspars, kaolit, siderite, calcite and quartz in some vugs.
192 - 212'	Monzonite breccia but darker gray color. May be due to less alteration or to sulfides. Sericite and pyrite increase.
212 - 216'	Lighter gray monzonite breccia, kaolinized.
216 - 312	Lighter gray monzonite breccia, kaolinized. Soft black mineral noted at 267'.
312 - 314'	Andesite porphyry.
314 - 343	Gray hard monzonite.
343 - 348' 6"	Andesite porphyry.
348'6" - 521'	Kaolinized monzonite breccia. Larger pyrite crystals at 412'. Diorite? inclusions at 443'.
521 - 568'	Dark gray monzonite breccia. Hit seam at 526' and lost water.

POTTER AND SIMS

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 July 23, 1952

DIAMOND DRILL HOLE # 1

Results of Ultra Violet light examination of core:

Minor amounts of scheelite noted at:

14' - 23'
119' - 128'
150' - 156'
213' - 223'
240' - 251'
328' - 356'
375' - 432'
459'6"
499' -509'
518' - 522'

ASSAY RESULTS:

Sample No.	Depth	Au (oz)	Cu %	WO_3 %
C-1	4' - 35'	0.04	0.99	Nil
C-2	35' - 50'	0.02	0.19	Nil
C-3	50' - 75'	0.02	0.02	Trace
C-4	75' - 100'	0.01	0.10	Trace
C-5	100' - 125'	0.03		0.04
C-6	125' - 150'	0.025		Trace
C-7	299' - 309'	Trace		0.06
C-8	393' - 403'	Trace		Trace
C-9	499' - 508'	Trace		0.03

POTTER AND SIMS

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT

SANTA FE COUNTY, NEW MEXICO

Contract Idm-E-310 July 30, 1952

Log of Diamond Drill Hole # 2

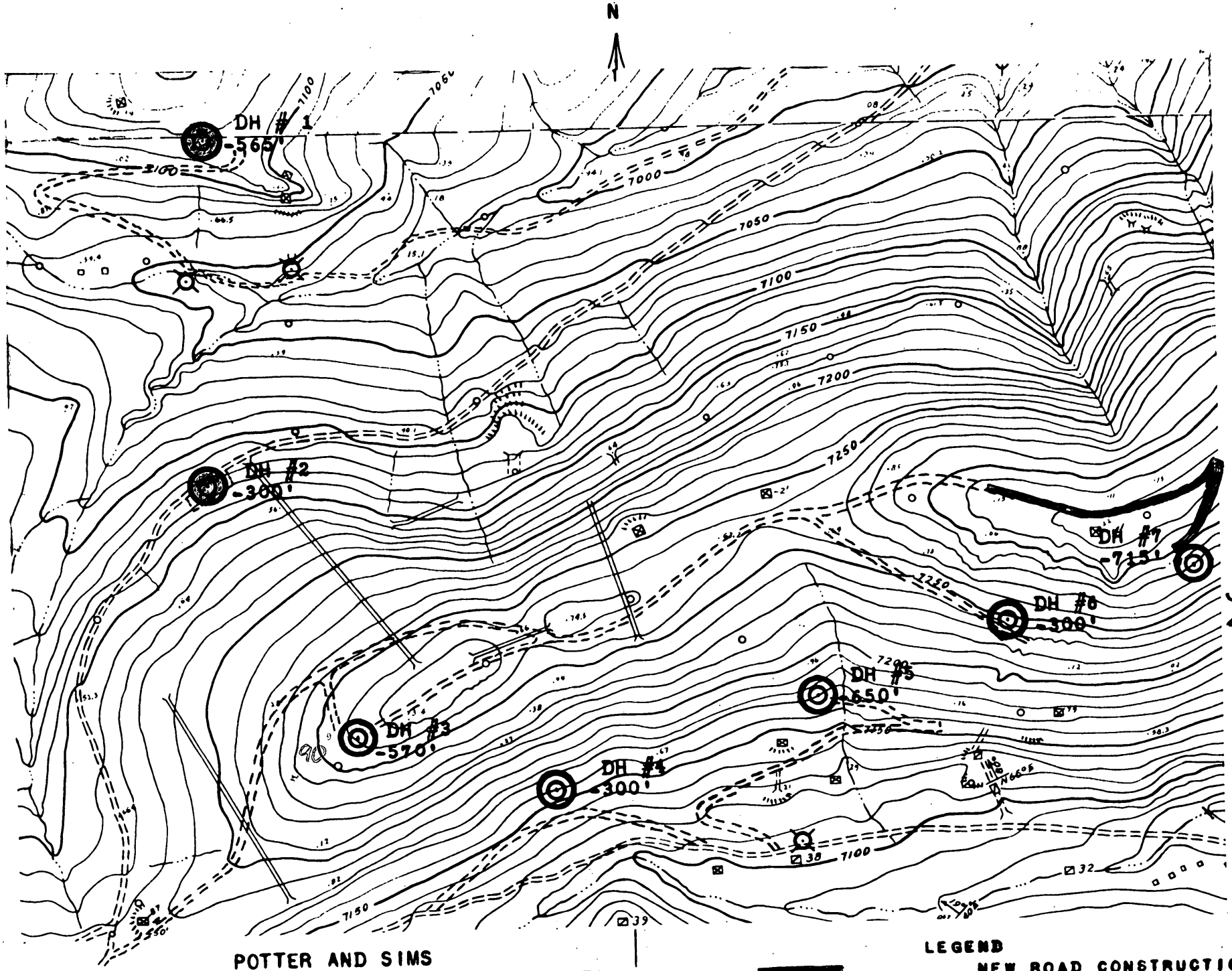
Elevation Collar of Hole: 7120' BX Core Core Recovery 92%

Date Started: 7/22/52 Date Completed: 7/26/52 Total Depth: 299'

DEPTH	FORMATION
0' - 16' (NX core)	Quartzite, hornfels breccia with hematite, limonite, pyrite and chalcopyrite.
16' - 58' (BX core)	Quartzite, hornfels breccia with hematite, limonite, pyrite and chalcopyrite.
58' - 60'	Andesite porphyry.
60' - 91'	Monzonite breccia well mineralized with specular hematite and pyrite.
91' -115'	Monzonite breccia poorly mineralized with some specular hematite and pyrite.
115' -120'	Monzonite breccia, kaolinized. Some specular hematite and pyrite.
120' - 146'	Monzonite breccia with specular hematite and pyrite.
146'	Mud seam.
146' - 264'	Monzonite breccia. Siderite at 210'. Specular hematite lathes at 211'.
264'	Lost water, broken core, poor recovery.
264' - 299'	Highly altered monzonite breccia with pyrite and specular hematite.

Results of Ultra Violet light examination of core:

No scheelite was observed in any of the core from this hole.



July 31, 1952
B.R. Brownfield

POTTER AND SIMS
PROGRESS MAP, CUNNINGHAM HILL TUNGSTEN AREA
ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO
SCALE: 1 INCH = 200 FEET
CONTOUR INTERVAL: 10 FEET

LEGEND
NEW ROAD CONSTRUCTION
VERTICAL DIAMOND DRILL HOLES COMPLETED
VERTICAL DRILL HOLE PARTIALLY COMPLETED
OLD CHURN DRILL HOLE

DMA 1387x CONTRACT IDM-E-310

Form MF-104 (Rev.)
(April 1952)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of June, 1952 Docket No. DMEA 1387 Contract No. Idm-E-310
Operator's Name POTTER AND SIMS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri
Contract Amount, $ 2,137.53 Government Participation: 75 % Amount, $ 1,603.15

ITEMS OF COSTS	FOR OPERATOR'S USE			FOR GOVERNMENT USE ONLY		
	Monthly Total	Totals Previously Reported	Totals To Date	Approved Monthly Total	Approved Totals Previously Reported	Approved Totals To Date
(1) Independent Short Form Contracts:						
Drilling						
Bulldozing						
Crosscutting						
Drifting						
(2) Labor and Supervision:						
Labor	$414.41	None	$ 414.41			
Supervision	500.00	None	500.00			
Technical Services						
(3) Operating Mat'ls. and Supplies:						
Timber						
Explosives	62.48	None	62.48			
Pipe	1.18	None	1.18			
Track						
Drill Steel, Bits	44.98	None	44.98			
Gas, Oil, Tire	109.52	None	109.52			
(4) Operating Equipment:						
Rental Bulldozer	700.00	None	700.00			
Purchase Core Split	123.74	None	123.74			
Depreciation	53.00	None	53.00	51.67	None	51.67
(5) Initial Rehabilitation and Repairs						
(6) New Bldgs., Improvements, etc.						
(7) Miscellaneous:						
Repairs to Equipment						
Sampling and Analysis						
Payroll Taxes	88.87	None	88.87			
Liability Insurance						
Rent & Sustenance	39.35	None	39.35			
(8) Contingencies (specify):						
TOTALS	$2,137.53	None	$2,137.53	2,136.20		2,136.20

I certify that the above bill is correct and just and that payment therefor has not been received.

Date July 5, 1952 Payee POTTER AND SIMS

Per B. R. Grimwold Title Agent

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—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.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$

Signature
(Authorized Certifying Officer)

Date Vou. No.
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. DMA E 310 in accordance with the terms of the contract.

Signature John H. Soule Title Mining Engineer Date July 11, 1952

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE

Signature ..... Title ..... Date .....

MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

Preparation of Form MF-104—Operator's Monthly Report and Voucher.—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

U. S. GOVERNMENT PRINTING OFFICE 205675

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of June 1952 Docket No. DMEA 1387 Contract No. Idm-E-310
Operator's Name POTTER AND SIMS Minerals Scheelite
Address P.O. Box 229, Joplin, Missouri

OPERATION	UNIT	COSTS THIS MONTH	UNITS THIS MONTH	COSTS TO DATE	UNITS TO DATE	UNIT COSTS TO DATE	AUTHORIZED BY CONTRACT Units	AUTHORIZED BY CONTRACT Unit Costs
Drifting								
Crosscutting								
Raising								
Shafts								
Winzes								
Drilling: Core								
Churn								
Auger								
Stripping								
Trenching								
Test Pits								
Roads and Trails	feet	$2013.79	3887'	$2013.79	3887'	$0.52		$4,000.00
TOTAL DISTRIBUTED COSTS		$2013.79	3887'	$2013.79				TOTAL COSTS AUTHORIZED BY CONTRACT
Operating Equipment Purchased		123.74	1	123.74				$120.00
Initial Rehabilitation and Repairs								
New Buildings, Improvements, etc.								
TOTAL COSTS		$2137.53		$2137.53				$4,120.00

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

Date July 5, 1952 Operator POTTER AND SIMS

Per S. R. Briswold Title Agent

NOTE.—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.

REMARKS:

(Instructions on reverse)

(For Government use only)

Schedule DMA 53-15
Aug 1, 1952
1602.15

INSTRUCTIONS

Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

U. S. GOVERNMENT PRINTING OFFICE 205676

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION IV

Administrative Audit Difference Statement

Date: July 30, 1952
Payee's
Reference: Progress
Report, June 1952

Potter & Simms
P. O. Box 229
Joplin, Missouri

Upon consideration of the above Payee's Reference's difference we find which make it necessary to suspend your account accordingly:

Amount claimed $ 2,137.53

Difference $ 1.33

Amount Approved $ 2,136.20

The reason for the difference was due to:

The amount of $133 is disallowed in that the amendment in process to allow the depreciation of the compressor and wagon drill is set up to depreciate the compressor at $25.00 per month and the wagon drill at $8.33 per month. The amount of depreciation for one-half (½) month is therefore $16.67 whereas the operator's claim is $18.00. The effective date of the amendment will be June 16, 1952, the date of the operator's letter of request.

Any refund for deductions made above must be supported by the ORIGINAL of this form.

Very sincerely yours,

N. E. Stokes
Audit Section

R-IV RF Form No. 4
4-15-52 B

Mining Division
Region IV

July 18, 1952

Memorandum

To: T. A. Christensen

From: Acting Chief, Mining Division, Region IV

Subject: DMA Docket 1387X, Contract Idm-E310 (Tungsten), Potter and Sims, Ortiz Mine Grant, Santa Fe County, New Mexico - Operator's Monthly Progress Report, for the period June 1952

Enclosed are the original and four copies of Form MF-104, Narrative Report, and Engineer's Report for the above period.

Work accomplished is in accordance with the contract and payment is recommended as follows:

Total Reported	$ 2,137.53
Disallowance (Explained Below)	1.33
	$ 2,136.20
Government Participation - 75 percent	$ 1,602.15

The amount of $1.33 is disallowed in that the amendment in process to allow the depreciation of the Compressor and Wagon Drill is set up to depreciate the Compressor at $25.00 per month and the Wagon Drill at $8.33 per month. The amount of depreciation for one-half (½) month is therefore $16.67 whereas the operator's claim is $18.00. The effective date of the amendment will be June 16, 1952, the date of the operator's letter of request.

W. H. King

W. H. King

Enclosures

WLD:wo

cc: Sec. Oper. Comm. (2)
Storms
Contract
Koschmann (2)
Chron

MINING DIVISION
REGION IV

July 11, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

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

Subject : June 1952 Progress Report, DMA Docket 1387X, Contract Idm-E310, Potter & Sims, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above report:

(1) Bureau of Mines Engineer's Report;
(2) Operator's narrative report;
(3) Form MF-104 with complete documentation for original.

Also enclosed are 2 extra copies of our engineer's report.

With the exception of several items as discussed by Soule' in his report, these costs conform to the contract. I recommend that the Government's 75 percent share be paid if you agree with Soule's report.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMA-1387X
DF

WRStorms:frj

MINING DIVISION
REGION IV

July 11, 1952

Memorandum

To : W. R. Storms, Chief, Arizona-New Mexico Branch
Mining Div., Region IV, Tucson, Ariz.

From : J. H. Soule', Mining Engineer, Tucson, Ariz.

Subject : Progress Report for June 1952, Docket DMEA-1387, Contract Idm-E310, Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mexico.

The Cunningham Hill area of the Ortiz Mine Grant was visited on June 24, 1952. The road building phase of the project was started on June 1 with the assembling of equipment and other preliminary work. Actual road work was started on June 5, 1952. At the time of the visit, nearly 4,000 feet of roads were constructed to 7 drill sites outlined in stage 1 of the project. The road building was very well done.

ANALYSES OF ENTRIES ON FORM MF-104

Item 2. Labor. Total labor for the road building work consisted of 2 men. The payroll sheet attached to the original of Form MF-104 totalled $414.41, which sum is approved.

Item 2, Supervision. Supervsion totalled $500.00 for the month and this sum is approved. Schedule of supervisory work is attached to original MF-104.

Item 3. Explosives. Costs of explosives used in the road building totalled $62.48, and this sum is approved. An explanation of these costs is attached to the original of Form MF-104.

Item 3. Pipe. This item totals $1.18 and is approved.

Item 3. Drill Steel and Bits. This item totals $44.98. The actual approved sum is dependent upon the amendment requested for the use of a compressor and wagon drill outfit. If the drill steel is considered as part of the drill outfit, then its cost should not appear here. However, drill steel was sent with the wagon drill

CC W. H. King (Orig. & 6)
DMA-1387X
DF
JHSoule':frj

and the extra pieces were purchased for use where the long steel with the wagon drill outfit was unsuitable. The bits are considered as expendable and some of the costs were incurred in sharpening bits. The sum of $31.00 is approved and the remaining $13.98 of $44.98 is tentatively approved, pending Denver's approval. This item is broken down on the explanation sheet accompanying the original of form MF-104.

Item 3. Gas, Oil and Tires. This item totals $109.52 and is detailed on the explanation sheet accompanying the Form MF-104. One item may be subject to question. This is the purchase of one tire costing $21.18. It may be argued that the equipment placed on the project should be in good condition and that the purchase is not justified. The sum of $109.52 is approved excepting the tire item of $21.18 pending approval by Denver.

Item 4. Bulldozer. This item is allowed by amendment No. 1 to the contract. A total of 87.5 hours was worked by the machine. At $8.00 per hour, this totals $700.00. The amount is approved and an explanation sheet accompanies the original Form MF-104.

Item 4. Core Splitter. This is allowed by the contract. The total cost was $123.74 which includes transportation. This item is approved although $120.00 was allowed by the contract.

Item 4. Depreciation. The sum for this item totals $53.00 and is so approved pending the issuance of an amendment allowing the use of a compressor and wagon drill outfit. A breakdown of the costs is shown in the following tabulation.

Item	Value	Monthly Depreciation	Submitted
Truck	$600.00	$10.00	$10.00
Sedan	1,500.00	25.00	25.00
Compressor	1,500.00	25.00	12.50 1/
Wagon drill outfit	700.00	11.67	5.83 1/
		Total	$53.33

1/ Used 1/2 month.

As only $53.00 was entered on Form MF-104, this sum is approved pending approval of the amendment covering the wagon drill and compressor. A note on the wagon drill. The fair value was placed at $500 but no consideration was given to the accessories that were necessary to use the machine. A reasonable allowance would be $700 which would include the drill, hoses, steel and fittings. This is explained in more detail in a July 1 memo to Storms from Soule'.

Item 7. Payroll Taxes. The payroll taxes total $88.87 and the sum is approved pending issuance of an amendment allowing these costs.

Item 7. Rent and sustenance. This item totals $39.35 and is approved.

The total spent on the project for the month of June was $2,137.53 and is approved pending approval by Denver of items discussed in the text. The original of Form MF-104 is accompanied by complete documentation and explanation. All bills have been checked and all arithmetic is correct. All items are within the terms of the contract except where noted or amendments are pending.

As the period was given to road construction and no drilling was done, it is recommended that all the above costs excepting the core splitter item of $123.74 be charged to the $4,000.000 allowed for road building. This would total $2,013.79 which is close to 1/2 of the total of $4,000.00.

John H. Soule'

John H. Soule', Mining Engineer
Arizona-New Mexico Branch
Mining Div., Region IV

July 7, 1952

Mr. W. R. Storms
United States Bureau of Mines
P.O. Box 4097, University Station
Tucson, Arizona

Re: Contract Idm-E-310
DMEA Docket 1387

Dear Mr. Storms:

Enclosed find 5 copies of Narrative Report, Progress Map, Form MF-104, Form MF-104A and one copy of supporting vouchers for the month of June 1952.

Very truly yours,

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent

Encls:

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

NARRATIVE REPORT FOR MONTH OF JUNE 1952

Contract Idm-E-310 DMEA Docket 1387

Work on subject contract was started June 1, 1952. From June 1 to June 4 the undersigned gathered together equipment, made up base for progress map and worked up bid figures for diamond drilling contract. On June 5, Messrs. M. W. Pollock and Pat Candelario were employed and field work was begun on road and trail building to the drill sites. Living quarters were obtained for the writer at Madrid, New Mexico at a cost of $17.50 per month and board for $1.02per meal. An RD-4 Caterpillar bulldozer with hydraulic blade was arranged for from Mr. Henry Trigg at the rate of $8.00 per hour of working time to assist in the road building program. Prior approval for this rental was obtained from the Executive Officer, Field Team, Region IV, as Amendment No. 1 to this contract.

On June 6 the drill holes as specified in Exhibit "A" Contract Idm-E-310 were located on the ground and roads to these holes were flagged. Henry Trigg arrived with bulldozer and work was started on the road to Drill Hole #1. This road was completed on June 7.

On June 8 the 160 CFM Ingersoll-Rand compressor and wagon drill, air hose, steel and bits sent out by Potter and Sims from Joplin, Missouri arrived by truck and were unloaded on Cunningh Hill, Ortiz Mine Grant.

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

Road to Drill Hole #3 was completed on June 10. Drill Station for Drill Hole #2 was completed on June 14. This required drilling and blasting so the drill would not block the haulage road.

Road to Drill Hole #6 and drill station were completed on June 19. Core splitter arrived from E. J. Longyear Company on June 19 at a total cost, including Express charges, of $123.74.

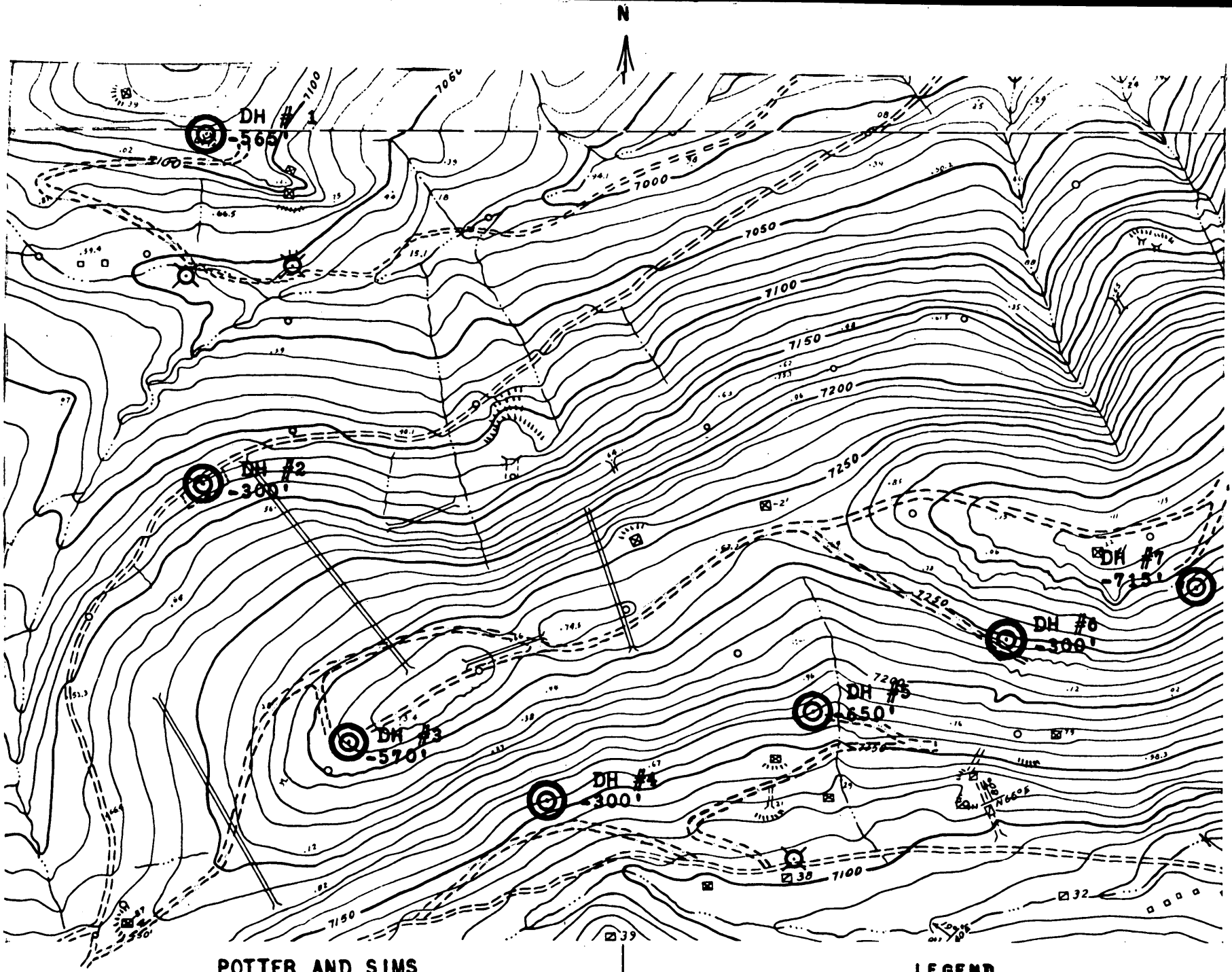
On June 23, 1952, 6 copies of diamond drill contract were signed and sent to Executive Officer, Field Team, Region IV, Denver, Colorado for approval. Boyles Bros. Drilling Company of Salt Lake City, Utah was chosen by Potter and Sims, even though not the low bidder, because their proposal included the cost of furnishing their own water regardless of the source of such water. The R. S. McClintock bid figures covered only the cost of water if obtainable from the Dolores well which makes between 1 and 2 gallons of water per minute. McClintock would expect to realize their costs if this supply did not prove adequate and such a proposal was considered too indefinite. Boyles Bros. expect to move in at the end of June.

Road to Drill Hole #4 and drill station completed on June 25. Road to Drill Hole #5 completed June 26. Road to Drill Hole #7 will be completed July 2, 1952.

The bulldozer work was finished on June 28 after a total of 87½ hours working time.

June 28 and 30 were utilized in finishing up the various roads.

G. R. Griswold
G. R. Griswold, Agent



POTTER AND SIMS

PROGRESS MAP, CUNNINGHAM HILL TUNGSTEN AREA

ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

SCALE: 1 INCH = 200 FEET

CONTOUR INTERVAL: 10 FEET

DMA 1387x CONTRACT IDM-E-310

LEGEND

NEW ROAD CONSTRUCTION

DIAMOND DRILL HOLES COMPLETED

DRILL HOLE PARTIALLY COMPLETED

OLD CHURN DRILL HOLE

June 30, 1952 S.R. Griswold

FILE COPY
SURNAME:

Rutledge

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

November 13, 1953

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Memorandum of Non-Discovery
Docket No. DMEA 1387 - Tungsten
Potter and Sims
Cunningham Hill area
Ortiz Mine Grant
Santa Fe County, New Mexico
Contract No. Idm-E310

This Division hereby concludes that the work done upon the subject property, as described under the contract, has resulted in no discovery or development from which commercial production may be made.

A description of the property, the work done, and the results obtained follow:

(1) This project was conducted on the Cunningham Hill area of the Ortiz Mine Grant, Santa Fe County, New Mexico. The exploration consisted of diamond drilling and accessory road construction set up in two stages. The estimated cost of Stage I was $40,820.00, which included $36,820.00 for drilling and $4,000.00 for the road building under both stages. The additional drilling proposed for Stage II was not authorized by the Government.

(2) The mineral sought was scheelite which occurs in a clastic brecciated zone, due to faulting, superimposed on the intrusion breccia of the Cunningham Hill area. The drilling program verified the previous observation that the ore minerals were localized along small fractures.

(3) The contract was executed May 6, 1952, and work under the contract began June 1, 1952. Project work of Stage I of the contract was completed by October 1, 1952. The work was efficiently carried out. The following items were completed:

4,370 feet of road work @ $0.52/ft.	$2,263.79
2,881 feet of drilling (7 holes) @ $7.01/ft.	20,194.72
259 samples @ $11.81/sample	3,059.63
	$25,518.14

R.C.S. 11-14-53

(4) After a review of the results of Stage I, the Field Team did not authorize the work under the second stage and the contract was terminated by mutual consent on September 30, 1952.

(5) The Bureau of Mines estimated nearly 41,000,000 tons of inferred mineralized material containing 0.81 pounds WO_3 and 39¢ gold ($35.00/oz.) per ton. Applying a grade cut-off of one pound of tungstic oxide per ton, a little over 17,500,000 tons of ore is indicated and inferred that contains 1.23 pounds of tungstic oxide and 73 cents in gold per ton.

(6) The Geological Survey states that "Considerable additional exploration would be necessary before the deposit could be evaluated as either promising or unpromising as a potential source of several millions of tons of material containing the hoped for 1 to 1½ pounds of tungstic oxide per ton of mineralized material."

(7) The Operator states: "No proven ore reserves were developed from drilling under this contract."

(8) The Iron and Ferro-Alloys Division, DMEA, estimates a possible 13,750,000 tons containing 0.92 pound of WO_3 and 66 cents gold ($35.00/oz.) per ton. (See T. L. Chapman's memorandum of February 27, 1953.)

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge/ls
11/13/53

cc: DOCKET
CODE 400
OPER. COMMITTEE
ADM. READ. FILE
FIELD TEAM, REG. 4
R. W. GEEHAN, USBM
T. P. THAYER, USGS

W[illegible] AN[illegible]YSIS SHEET - DMEA PROJECT [illegible]

[illegible]ed ..... Analysis as of 12/7/1954
Incl. Voucher for _____

Actual Cost

Agreed Unit Costs

Potter and Sims

Docket No. DMA - 1387

New Mexico

Commodity Tungsten

Idm-E No. 310

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting					
Raising					
Shafts					
Winzes					
Drilling (Specify) Diamond	8,000'	56,000.00	2,881'	18,792.25	23,933.95 8.31 ft.
Surface Excavation					
Underground Excavation					
Roads and Trails		4,000.00		1,549.19	1,549.19
Operating Equipment Purchased		120.00			
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Labor, Supervision, Supplies, sampling, assaying, etc.		17.400.00		5,141.70	
Totals		77,520.00		25,483.14	25,483.14

Contract terminated by mutual consent.

Prepared by TLC

71626

Office of Minerals Exploration

OFFICIAL COPY
O. M. E.
RECEIVED
OCT 5 1967

INITIALS	CODE
YB	110
HK	120
	220

DMA-1387X
John-E310

October 4, 1967

Mr. Ralph Baird
c/o Potter & Sims
Post Office Box 229
Joplin, Missouri 64801

Dear Mr. Baird:

Reference is made to your request of October 2, 1967 for information pertaining to files belonging to Potter and Sims.

Mr. Clinton Knox of the U. S. Bureau of Mines called Monday, October 2, 1967, regarding the same files. A thorough search of our records indicates that the Potter and Sims files are not in this office. We would suggest you write:

Chief, Office of Minerals Exploration
U. S. Geological Survey
Room 4460 - Interior Building
Washington, D. C. 20242

Sincerely yours,

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

cc: Chief, OME
Hasler chron
OME chron
"B"

Copy to Washington
10-3-67

Potter & Sims

POST OFFICE BOX 229 JOPLIN, MISSOURI TELEPHONE MAYFAIR 3-0461

GEO. W. POTTER
DEWEY S. SIMS

October 2, 1967

OME Region 5
RECEIVED
OCT 3 - 1967
Denver, Colorado

Mr. William Hasler, Geologist
U. S. Geological Survey
Office of Minerals Exploration
Building 20, Federal Center
Denver, Colorado 80225

Dear Mr. Hasler:

I write as attorney for Potter & Sims of Joplin, Missouri to authorize your department to look at the files belonging to Potter & Sims which were filed several years ago in support of an intended application or grant under a then existing federal program, all relating to a mineral reservation on the Ortiz Grant in Santa Fe County, New Mexico. The files I refer to are those in the possession of the appropriate department of the Bureau of Mines who received the application.

In event this authorization is either nor clear or inadequate I refer you to your Mr. Clinton Knox of the Denver Mining Research Center who conferred with me in August concerning this.

Very truly yours,

Ralph Baird

Ralph Baird

RB/1

CC Mr. Geo. W. Potter, Jr.
CC Mrs. Dewey S. Sims

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE Nov. 4, 1954

RRED TO:

1. ~~G. O. M. Hendorf~~
2. ~~[illegible] Johnson~~
3. G. E. Selfridge
4. 400

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	..... Referring to .....
..... Conference	..... Reply for signature of .....
..... Consideration	..... Rewriting
..... Filing	..... Signature
..... Instructions	..... Suggestions
..... Investigation	..... Your information
..... Initials	
..... Mailing	
..... Previous correspondence	

REMARKS:

This refers to Docket
DMEA 1387
Potter & Sims
Books closed uncertified

Check (X) before the items needing attention.

W. S. Martin

Initials of sender.

GPO 16—63815-1

400

MINES

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

NOV 3 1954

My dear Mr. Floyd:

Reference is made to your letter of October 19 requesting a report on the tungsten deposit on the Ortis Mine Grant, New Mexico.

The data you provided, together with other information from our files, have been carefully reviewed.

Reserves of tungsten-bearing material on the Cunningham Hill deposit, Santa Fe County, New Mexico, are indeed large; however, the data do not support a firm prediction regarding the size or grade of the material. Ample tungsten to provide the 250,000 units of WO_3 offered by Mr. McPherson seems assured. Much additional work would be required to block out the 5,000,000 units of WO_3 mentioned; this quantity should be regarded as a target rather than a reserve.

Several other very large but very low grade tungsten deposits are known; however, in most instances details are lacking because mining interests have not felt that a profitable mining venture would result from such a deposit, no matter how large. If serious exploration of tungsten deposits with a grade less than 0.05 percent WO_3 is undertaken it seems certain that very substantial reserves will be developed.

From the standpoint of a long-range mobilization base any contribution to domestic reserves of tungsten is of value. However, the policy of the Government should lead to an equal opportunity for development of all such reserves. It seems obvious that mines now in operation should not be closed while, at the same time, other deposits with lower grade ores are encouraged to open.

From a technical standpoint there ~~is~~ are not enough data available to determine the probability of a profitable operation at the Cunningham Hill deposit. Sound engineering would dictate use of a

small pilot plant to determine milling methods, recovery, and costs before a plant costing several million dollars is built. Information on this phase of the project is not available from any reports submitted and it seems probable that not even full scale laboratory tests have been completed. The cost of milling and the recovery of gold and tungsten are of utmost importance to an economic study of the proposal.

A DMEA project was conducted at the deposit under a 2-stage contract. The sum of $25,483.14 was expended, 75 percent of which, or $19,112.35, represented the Government's share. The contract was terminated after completion of Stage I which was considered to have produced negative results. The final report of the company stated, "No proven ore reserves were developed from drilling under this contract." The company was informed as follows, "Because the results of the work completed under the contract were unfavorable, it is not our intention to make a certification of discovery ....." The company conducted an additional exploration program at its own expense. The combined programs provided information which firms up the presence of mineralization with a tungsten content in the range 0.04 to 0.05 percent WO_3.

A field study costing many thousands of dollars will be required before a firm technical appraisal of the deposit can be made. It is suggested that your agency provide $10,000 to cover the initial phase if the study is desired; no funds are available in this Department to cover such a project.

Sincerely yours,

(SGD) Felix E. Wormser,

ASSISTANT Secretary of the Interior

Mr. W. S. Floyd
Assistant Director for Materials
Office of Defense Mobilization
Washington 25, D. C.

10/28/54
RWGeehan:lds
Copy to: BuMines Files
Off. of Sec. Files
Sec. reading file
Director's reading file

CC: C. W. Seibel, Regional Director, Region VI, Amarillo, Texas
Sec. Wormser (2)
Minerals Division
Ferrous Metals
WSMartin - R. 3538 (2)
RWGeehan
Mr. Marsh - Hold copy

Docket 90

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

224 New Customhouse
Denver 2, Colorado

October 6, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket No. DMA 1387X (Tungsten), Contract Idm-E310, Potter & Sims, Cunningham Hill Tungsten Project, Ortiz Mining Grant, Santa Fe County, New Mexico

Enclosed are the following final reports relative to work performed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final engineering report by the Bureau of Mines

3. Original and three copies of the final geologic report by the U.S. Geological Survey.

The work performed was in conformance with the contract and the operator has complied with the terms of the contract. Form MF-104, "Operator's Monthly Report and Voucher" for the period of October and November 1952, which constituted the operator's final accounting report, was processed by this office February 6, 1953, in conformance with the final Audit Report by the Contract Administration and Audit Division, dated February 11, 1953.

The exploration project involved 4370 feet of road construction and 2881 feet of diamond core drilling at a total allowable project cost of $25,483.14, in which the Government participated to the extent of 75% or an amount of $19,112.35.

The exploration work did not result in a significant discovery of commercial grade ore under present conditions, therefore the issuance of a certification of a discovery or development is not recommended.

W. H. King
W. H. King

Enclosures

A. H. Koschmann
A. H. Koschmann

Reviewed by
DMEA OPERATING COMMITTEE

10-16-53
(date)

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

October 5, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 1387, Contract Idm-E310, Cunningham Hill Tungsten, Potter and Sims, Santa Fe County, New Mexico

Enclosed are 9 copies of the completion report by A. F. Shride of the U. S. Geological Survey covering the above docket.

Since the resulting data are too scanty for prediction of a large low-grade scheelite deposit, certification of discovery should not be made.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

Reviewed by
DMEA OPERATING COMMITTEE
10-16-53
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 4126, University Station
Tucson 5, Arizona

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 1 1953

October 2, 1953

Memorandum

To: A. H. Koschmann

From: A. F. Shride

Subject: Completion Report, Contract Idm-E310 (DMA-1387), Cunningham Hill Tungsten, Potter and Sims, Applicants, Santa Fe County, New Mexico

Enclosed are the original and 8 copies of the above report by A. F. Shride of the Geological Survey.

It is concluded that the exploration work was very satisfactorily done, but that the resulting data are too scanty for prediction of a large low-grade scheelite deposit. Therefore certification of discovery should not be made.

A. F. Shride

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

Reviewed by
DMEA OPERATING COMMITT
10-16-53
(date)

Completion Report

DMA-1387, Contract Idm-E310

Cunningham Hill Tungsten Deposit
Ortiz Grant
Santa Fe County, New Mexico

Potter and Sims, Applicant

F.T. REP

by
A. F. Shride, Geologist
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
10-16-53

INTRODUCTION

The Cunningham Hill scheelite exploration project, (DMA-1387, Contract Idm-E310), which as completed consisted of the construction of 4,370 feet of access road and 7 diamond drill holes totaling 2,881 feet, accomplished little in better defining the knowledge of the geology or potential of the area. The work was well done and sample engineering data were well kept by the operator's agent, G. R. Griswold. Considerable additional exploration would be necessary before the deposit could be evaluated as either promising or unpromising as a potential source of several millions of tons of material containing the hoped for 1 to $1\frac{1}{2}$ pounds of tungstic oxide per ton of mineralized material.

Because of the lack of new data little can be added to the description or appraisal of the deposit as presented in the November 23, 1951 report by the writer. In the following report, the new data resulting from the drilling campaign are summarized. The reader is referred to the writer's 1951 report for a more complete geologic report and a geologic map and to the final engineering report for a tabulation of the sample data. The writer compared the drill logs presented in the operator's final report with representative portions of drill core from each hole. The descriptions were carefully made and are adequate for the record. Because of the lay terminology used in describing the cores the operator's logs can be misinterpreted.

The preparation of revised logs is unnecessary for this report if the operator's terminology is defined. A thorough and time-consuming geologic investigation, which would now also require painstaking examination of the drill cores, is necessary before an adequate geologic report on the Cunningham Hill property could be presented

SUMMARY OF GEOLOGIC FEATURES OF THE DEPOSIT

The eastern two-thirds of the elongate, east-trending Cunningham Hill is underlain by Cretaceous (?) sandstones and quartzites. A stock (?) of monzonite porphyry intrudes these sedimentary rocks and crops out at the west end of Cunningham Hill (see figure 3 of the writer's November 1951 report). All of the "monzonite porphyry" exposed on Cunningham Hill would be better termed a monzonite intrusion breccia; this breccia consists of blocks and fragments of monzonite porphyry and materials foreign to the stock (quartzite, sandstone, shale, volcanic rocks and diorite) enclosed in a matrix of monzonite porphyry. Most of the mineralized outcrop of sandstone and quartzite to the east of the stock is also intrusion breccia with sandstone and quartzite apparently predominating over other materials. The contact between the stock and the sedimentary rocks is gradational.

A clastic brecciation, due to faulting, was superimposed on the intrusion breccia. Scheelite, gold, pyrite, hematite and magnetite are apparently confined to the clastically brecciated parts of the above described lithologic units. As far as is known brecciation due to intrusion was not an influencing factor in localizing these minerals.

INFORMATION FROM EXPLORATION PROGRAM

The drill cores indicate that the content of monzonite porphyry in the intrusion breccia plotted as predominately quartzite and sandstone along the crest of Cunningham Hill (figure 3 of the 1951 geologic report) is greater than suggested by observation of the outcrop. In Holes 2 and 3 approximately 3/4 of the intrusion breccia is monzonite. In Holes 4, 5, and 6 approximately half of the intrusion breccia is monzonite. The upper 90 feet of Hole 7 were apparently in a small pod of monzonite; the remainder of the 510 foot hole was predominately in sedimentary rocks that were not invaded by monzonite.

The drilling program verified the previous observation that ore minerals were localized along small fractures. Scheelite, pyrite, hematite and chalcopyrite fill and border fractures in all of the rock types. In portions of the cores that were much fractured these minerals line small vugs. From the writer's brief inspection of the cores there was no suggestion that rock type particularly

influenced the degree of mineralization. Rather, mineralization was most intense where faulting was prevalent.

The column "Brecciation" on the operator's logs, which were included with his final report, does not refer to clastic brecciation. Rather this column reflects the amount of foreign material included in the monzonitic intrusion breccia. If the operator's engineer readily distinguished fragments of quartzite, shale, etc. from the monzonite porphyry matrix the degree of brecciation was termed "good". The term "monzonite breccia" in the "Description" column is also misleading. If the intrusion breccia is made up entirely of monzonite fragments in a matrix of monzonite porphyry the rock type was designated by Mr. Griswold as monzonite porphyry rather than monzonite breccia; only the parts of the core that included materials foreign to the stock were termed monzonite breccia.

The notes under "Mineralization" in the operator's logs suggest the degree of clastic brecciation; there are exceptions to this statement. In general the parts of the core in which the degree of mineralization is designated as "Fair" or "Good" show much premineral fracturing. Those parts of the core designated as poorly mineralized are in general only moderately or little fractured. In general the parts of the drill holes noted as in "caved ground" or "sand" were in zones of intense clastic brecciation.

Little or no fluorescence was noted for large parts of the cores; yet a number of the highest tungsten assays were noted in these parts of the cores as can be seen from the operator's logs. Mr. Griswold's "Scheelite Rating" on his logs represents the number of feet in a 10-foot run that contained scheelite visible under a mineralight (i.e. a rating of "1" means that fluorescence typical of scheelite was noted through 1 foot or 10 percent of a 10-foot core; 2 equals some fluorescence through approximately 20 percent of the core, etc.). The "Scheelite Ratings" are reflected in the assays only where the ratings are high (see logs of Drill Holes 4 and 5, operator's report). Mr. Griswold had heavy liquid separations made at the New Mexico School of Mines. These separations suggested that the tungsten of the non-fluorescent cores occurred as minute grains of scheelite. Mr. Griswold suspects that some of the tungsten occurs as finely divided wolframite or hubnerite.

Laboratory work done before September 1953 had not confirmed this belief. Core samples confirm the previous observation that the disseminated grains of scheelite rarely exceed 1/16 in diameter. Most scheelite grains are much smaller; a very few exceed $\frac{1}{8}$ inch in diameter.

The diamond drill cores indicate that the depth of oxidation varies but generally is not great. In general intense oxidation ceased to exist downward where the first pyrite was observed in the core. For all holes except Holes 3 and 5 some pyrite was noted within the uppermost 35 feet of the core; pyrite was first noted at 100 feet in Hole 3 and 70 feet in Hole 5. Limonite derived from sulphides was found to depths of 235 feet, 118 feet and 171 feet in Holes 3, 5 and 7 respectively. For the other 4 holes pyrite is converted to limonite only to shallow depths.

As noted in the original report the gold content of the material is very low except near the surface where there apparently has been some residual concentration of gold where intensely fractured sulphide-bearing rock was exposed to leaching action. Minute amounts of chalcopyrite were noted in some cores. Copper assays of cores from Holes 1 and 2 suggest but do not prove that some supergene enrichment of copper did occur.

Bulk sludge samples from Holes 4, 5, 6 and 7 were saved and assayed. For Holes 4 and 5 these samples contained approximately half of the average tungsten content determined for the core samples. The sludge samples for Holes 6 and 7 were respectively approximately 25 percent higher and 25 percent lower than the weighted average of the core samples. The reason for these variations is not apparent, but the fact that variations exist for such samples casts some doubt

on the validity of the assay data for the two churn drill holes drilled previous to Government participation. The churn drill samples were essentially sludge samples. It can be noted that the weighted average of the churn drill samples is 1.3 pounds WO_3 per ton. Of the core samples only the core from Hole 5 approached this tungsten content.

Diamond drill core recovery was satisfactory. In general core recovery was very good except in weathered near surface rock and in a few places through much fractured rock at depth. Loss of scheelite from granular parts of the core was probably not significant.

A weighted average of the tungsten assays of each hole is as follows:

D. D. Hole No.	Pounds WO_3 per ton	Depth of hole in feet	Footage represented by assays
1	0.46	565	561
2	0.45	299	299
3	0.71	539	539
4	0.81	326	317
5	1.13	338	336
6	0.64	304	304
7	0.51	510	510

By rejection of certain parts of the core containing the least tungsten considerable portions of Holes 3 and 4 will average more than 1 pound WO_3 per ton. The 7 holes represent so few penetrations of the tungsten-bearing zone that it cannot be said that the above averages are representative of the area. Holes

No. 1 and 2 may be outside of the main belt of mineralization or may be in a northward-trending narrow tongue of the mineralized zone. Holes No. 1 and 2 "straddle" the pre-existing churn drill holes; the weighted tungsten content of cores from D. D. Holes No. 1 and 2 are approximately 1/3 the average tungsten content of the two churn drill holes. The higher average tungsten contents of Holes 3, 4, and 5 was to be expected from outcrop indications; cores from Hole 6 might have been expected to contain comparable amounts of tungsten. However, the fact that one hole in the zone of best mineralization is low in tungsten content is not unexpected, because the scheelite was probably concentrated in pod-like zones of fractured rock. Hole 7 probably was drilled on the edge of the mineralized zone and the lower tungsten content of this hole was expectable; the bottom 300 feet of core were predominately of little faulted sedimentary rocks.

CONCLUSIONS

The exploration work under Contract Idm-E310 was well done. The exploration project was designed as a preliminary sampling program to determine whether or not more comprehensive exploration might be warranted. The 7 diamond drill holes completed represent too scattered a sampling to accomplish this purpose.

Concentrations of tungsten are associated with the most intensely fractured parts of clastically brecciated mineralized zone. The seven diamond drill holes are so widely spaced that no correlation of concentrations of tungsten from one hole to another is geologically reasonable. The holes probably also represent too few samples to suggest with confidence that the average tungsten content of the deposit will be on the order of magnitude of the averages of the seven holes. The tungsten content of sludge samples from Holes 4, 5, 6 and 7 did not check with the tungsten content of corresponding cores. This suggests that the samples from the 2 churn drill holes drilled previous to Government participation might not be representative of those holes.

No estimates of average tungsten content or of tonnage of tungsten-bearing material can reasonably be made from the available data. The operator hoped that a target consisting of a few tens to several tens of millions of tons of material averaging 1 to $1\frac{1}{2}$ pounds WO_3 per ton might exist in Cunningham Hill. Although the drilling by no means substantiated the possibility of such a target, neither did it definitely determine that such a target does not exist. Under these circumstances no certification of discovery should be made.

If a large low-grade tungsten deposit, as visualized by the operator, is considered an attractive future potential for tungsten considerable detailed geologic mapping and ore-dressing tests should be done as a part of a future exploration program.

Mining Division
Date Rec'd.
JAN 7 - 1953
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

~~Arizona-New Mexico Branch~~
Box 4097
UNIVERSITY STATION
TUCSON, ARIZONA

December 31, 1952

Memorandum

To : W. H. King, Chief, Mining Div., Region IV

From : Chief, Mining Methods Branch, Mining Div., Region IV

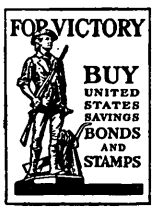
Subject : Final Report, Docket DMA-1387X, Contract Idm-E310, Potter & Sims, Cunningham Hill Tungsten Area, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed are original and eight copies of the final report for the above contract by John H. Soule' of the Bureau of Mines. This report has my approval.

Walter R. Storms

Walter R. Storms

CC: W. H. King (8)
A. F. Shride
DMA-1387X
DF



Reviewed by
BMEA OPERATING COMMITTEE
10-16-53
(Date)

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-1387, Contract Idm-E 310

Cunningham Hill Tungsten Area, Ortiz Mine Grant

Santa Fe County, New Mexico

John H. Soule', Mining Engineer
U. S. Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
10-16-53

January 1953

DMEA-1387, CONTRACT Idm-E 310
CUNNINGHAM HILL TUNGSTEN AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Final Engineering Report

By John H. Soule'
Mining Engineer
U. S. Bureau of Mines

January 1953

Reviewed by
DMEA OPERATING COMMITTEE
10-16-53
(date)

DMEA-1387, CONTRACT Idm-E310
CUNNINGHAM HILL TUNGSTEN AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

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SUMMARY

The mining rights of the Ortiz Mine Grant, Santa Fe County, N. Mex., were acquired by Potter and Sims who applied for Government assistance to explore the Cunningham Hill breccia area for tungsten minerals under the Defense Production Act of 1950, as amended. The application, Docket DMEA-1387, was approved and Contract Idm-E310 was issued to cover the work. Government participation was 75 percent. Work on the project, which was started on June 1, 1952, consisted of 4,370 feet of road work, and the drilling of seven diamond drill holes aggregating 2,881 feet. Total costs were $25,518.14. The project was completed by October 1, 1952. The work was well done.

The Cunningham Hill tungsten deposits are located near the center of the Ortiz Mine Grant, southern Santa Fe County, N. Mex. Pleasant summers and cool winters characterize the area which lies about 7,200 feet above sea level. The terrain varies from gentle to quite rugged. Weather, sometimes severe for short periods, would hamper established mining operations very little.

Based on two previously drilled churn drill holes, and the seven core holes drilled during the project, nearly 41,000,000 tons of mineralized material are inferred that contain 0.81 pounds of tungstic oxide and 39 cents in gold (at $35 per ounce) per ton. Applying a grade cutoff of 1 pound of tungstic oxide per ton, a little over 17,500,000 tons of ore is indicated and inferred that contain 1.23 pounds of tungstic oxide and 73 cents in gold per ton.

Mining would be by open-pit methods and very low costs should be obtained. The ore in the ground has a value, at present prices, of $4.73. It seems that the problem is a metallurgical one whose solution would determine the economic status of the deposit. Additional development work by drilling is necessary to more firmly establish the ore reserves. A large potential reserve of tungsten minerals, whether economic or not at this time, exists in the Cunningham Hill area.

INTRODUCTION

Potter and Sims, mining operators in the Tri-State district, acquired the mining rights to the Ortiz Mine Grant in Santa Fe County, N. Mex. and applied for Government assistance to explore part of the property under the Defense Production Act of 1950, as amended, for tungsten in the mineral scheelite. The application, Docket DMEA-1387, was sent to the field for an examination of the property. The first examination was made on August 3, 1951 but the property was reexamined a month later. Morris J. Elsing, John H. Soule' and B. C. Brown of the U. S. Bureau of Mines, and A. F. Shride and John Faick of the U. S. Geological Survey constituted the examining team.

From the results of the examination, it was recommended that the application be approved with some modification of the applicant's schedule. The contract, Idm-E310, was dated May 6, 1952. Work on the project was started on June 1, 1952. The field work on the project was completed by October 1, 1952, and the results derived therefrom constitute the basis of this report.

ACKNOWLEDGMENTS

Acknowledgment is due G. R. Griswold, agent for Potter and Sims, lessees of the mineral rights on the Ortiz Mine Grant, during the field period of the project for his cooperation with the inspecting engineer and for the excellent way in which the project was operated. Acknowledgment also is due to the information furnished by Griswold of work done prior to the DMEA project.

Acknowledgment is made of the information derived from previous Government reports, some of which was extracted wholly and incorporated in this report.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The Ortiz Mine Grant covers nearly all of unsurveyed T. 13 N., R. 8 E., the southern part of T. 14 N., R. 8 E., the southern half of T. 13 N., R. 7 E., and the northern halves of T. 12 N., R. 7 E., and T. 12 N., R. 8 E. The tungsten deposits are located near the center of the original grant in the Cunningham Hill area as shown in Figure 1.

Cunningham Hill is reached by leaving the town of Cerrillos and traveling southerly towards Madrid for nearly one-half mile to the schoolhouse road, turning left or east on this road for about one-tenth mile, thence sharply south, or right. This latter unimproved road is followed southerly for nearly 9 miles to the Cunningham Hill area where the deposits are located (see figure 1).

The topography is steep and rugged in places with a mean altitude of nearly 7,200 feet above sea level. Vegetation consists of mountain cedar, juniper, Ponderosa pine, and various native shrubs and grasses.

The average annual precipitation ranges from 20 to 25 inches. Winter snows and summer thunder showers may be heavy but should not seriously hamper established mining operations. Temperatures range from 95 degrees to below zero, but the sub-zero weather usually is not prolonged.

HISTORY AND PRODUCTION

Gold has been produced from the Ortiz Mine Grant since before 1850. It is reported that approximately $2,000,000 was produced from placer and lode deposits. Most of this came from early day placer operations. Lode gold is found in small amounts over a large area on Cunningham Hill. The higher gold content usually is confined to the most intensely brecciated areas. Cunningham Hill has been intriguing and for over 50 years one individual or corporation after another has examined the property with a view to determining the possibility of developing a large low-grade open-pit operation for the production of gold.

Thomas A. Edison became interested in the property in 1897. During three years S. O. Burns, a mining engineer for Edison, drove 1,050 feet of tunnels and shafts, cut 3,700 feet of trenches, and took nearly 1,000 samples. In 1927 the property was examined for the United Verde Copper Co., and in 1927 Perry and Moehlman examined the property for the Anaconda Copper Mining Co. In 1945, George W. Potter, of Potter and Sims, successful operators in the Tri-State zinc-lead fields, became interested in the Ortiz Mine Grant. In 1947 the occurrence of scheelite was noted at numerous places on the property.

In the early part of 1951, two churn drill holes were drilled to an approximate depth of 500 feet. Both holes encountered low-grade scheelite mineralization throughout a considerable part of their total depth.

OWNERSHIP AND EXTENT

The mineral rights of the Ortiz Mine Grant are owned by Mrs. George W. (Fay F.) Potter of Joplin, Mo. These rights cover an area of nearly 90 square miles. On May 26, 1951, George W. Potter acquired a lease on the property from Mrs. Potter. Two days later Potter assigned his lease to George W. Potter and Dewey Sims, a co-partnership doing business as Potter and Sims. Royalty payments amount to 10 percent of the net returns.

DESCRIPTION OF THE DEPOSIT

In general, the Ortiz mountains consist of a monzonite stock intruded into sandstones and shales of probable Cretaceous age. In the Cunningham Hill area at the contact of the intrusion and the sedimentary rocks, a boot-shaped breccia area occurs that is outlined in Figure 2. This breccia consists of fragments of the sedimentary rocks, as well as igneous rocks, including the monzonite that cemented the breccia. This intrusion breccia is well cemented in places. Subsequent brecciation of parts of the original intrusion breccia give rise to intensely brecciated sub-areas and it is there that most of the gold mineralization occurs.

It has been well ascertained that the best gold content of the rocks is limited to the oxidized parts of the intensely brecciated sub-areas, as the gold content of the underlying primary zones is very low. This suggests enrichment in the oxidized zones. Oxidation does not extend to any great depth. Gold recovery as a by-product in the production of scheelite would be important only in the intensely brecciated "toe" of the boot-shaped area.

The tungsten mineralization is more widespread, both laterally and vertically, than that of gold. Also the tungsten is not confined to the intensely brecciated areas nor to the oxidized zones. No enrichment of tungsten mineralization is indicated other than a possible superficial residual enrichment very near the surface. This seems to be borne out by the better-than-usual surface assays although only the better scheelite concentrations as noted under the ultra-violet lamp were sampled.

Scheelite seems to be the important tungsten minerals although one of the wolframite-type minerals may be present. The reason for suspecting the presence of one of the dark tungsten minerals was the unreliability of the ultra-violet light in determining good samples from poor. Also the presence of a different fluorescent mineral may have led to the unreliability.

The scheelite occurs as disseminations in the breccia fragments as well as in the cementing material. It also occurs in small veinlets, and small crystals were noted in tiny vugs. Hematite, magnetite, and pyrite were accessory minerals and it may be that wolframite occurred with the magnetite, thus preventing the identification of the wolframite.

PROJECT WORK AND COSTS

The contract, Idm-E310, was dated May 6, 1952. Actual work on the project, DMEA-1387, was started on June 1, 1952. The work, in two stages, was to total 8,000 feet of diamond core drilling in 14 holes. Costs were estimated to be $73,520.00 with an additional $4,000 allowed for road work to the various drill sites,

bringing the project total to $77,520.00. Three-fourths, or 75 percent of the costs were to be borne by the Government because of the critical nature of tungsten.

The gathering of equipment and other necessary work was started on June 1, 1952. Actual road work was started on June 5, and 4,370 feet of road was constructed or repaired while awaiting the arrival of the drill contractor. Drilling could not be started before July 11, 1952 because of the inability of the drill contractor to arrive earlier. However, the contractor arrived on July 7 and Hole No. 1 was started a few days later, on July 11. Seven holes were drilled, totalling 2,881 feet. All holes were drilled at the sites specified in the contract with the exception of Hole No. 7 which was moved to the northwest a short distance to get away from an impractical drill setup. Drilling was stopped by the Government at the end of Stage 1, and on September 30, 1952 all work on the project was completed excepting the operator's final report. Some assay results were yet to be received. The work on the project was well done and more than the usual amount of care was given to secure the best possible results.

All of the diamond core drilling was done "BX" size except for a small amount of larger drilling at the surface in which to set the standpipe. Most of the ground drilled well. Only in Hole No. 7 was any unusual difficulty experienced. This hole caved badly and progress was slower than usual until the caved portion was cemented and subsequently cased.

Core recovery was excellent throughout most of the drilling, so no systematic sampling of sludges was done. In holes 4 through 7, sludge samples were taken when the sludge tanks were cleaned. These samples represented large sample intervals. Ten sludge samples were taken.

All core was saved, logged, and split, then inspected with the ultra-violet lamp. One of the split portions was crushed and a sample for analysis obtained therefrom while the remaining split core was saved for possible metallurgical work. A total of 249 samples was analysed. Assay logs for the seven drill holes, plus two previously drilled churn drill holes, are shown in Figure 3.

The total costs incurred on the project were $25,518.14, broken down into $2,263.79 for road work, and $23,254.35 for drilling. An analysis of the $2,263.79 expended on 4,370 feet of road work is given in the following table.

TABLE I Analysis of road costs.

Item	Total Cost	Per-foot Cost
Labor	$508.92	$0.12
Supervision	604.11	0.14
Explosives	62.48	0.01
Bits and steel	50.41	0.01
Gas and Oil	122.07	0.03
Bulldozer rental	700.00	0.16
Depreciation on trucks and compressor	58.96	0.01
Payroll taxes	105.36	0.03
Office rent and subsistence	50.30	0.01
Pipe	1.18	—
Total and Average	$2,263.79	$0.52

The invoices of the drill contractor totalled $18,797.25 and the costs are detailed in Table II.

TABLE II-Contract Drilling Costs

Hole No.	Standpipe Ft.	Standpipe Cost	Drilling 0 to 400 Ft.	Drilling 0 to 400 Cost	Drilling 400 to 600 Ft.	Drilling 400 to 600 Cost	Reaming Cost	Cement Cost	Total Ft.	Total Cost	Per Foot Cost
1	4	$24.40	396	$2,178.00	165	$1,006.50	--	$118.50	565	$ 3,327.40	$5.89
2	-	---	299	1,644.50	-	---	--	---	299	1,644.50	5.50
3	-	---	400	2,200.00	139	847.90	--	228.00	539	3,275.90	6.08
4	9	54.90	317	1,743.50	-	---	--	126.50	326	1,924.90	5.90
5	3	18.30	335	1,842.50	-	---	--	199.50	338	2,060.30	6.10
6	7	42.70	297	1,633.50	-	---	--	47.75	304	1,723.95	5.67
7	3	18.30	397	2,183.50	210	671.00	398.25	569.25	510	3,840.30	7.53
				Mobilization and demobilization						1,000.00	
								Totals and Average	2,881	$18,797.25	6.52

A proportionate share of supervision, payroll taxes, and rent and subsistence is added to the above total to determine the actual drilling costs which are shown in Table III.

TABLE III-Actual Drilling Costs

Item	Total Costs	Per-foot Cost
Contract Drilling	$18,797.25	$6.52
Supervision	1,200.40	.42
Payroll Taxes	92.83	.03
Rent and Subsistence	104.24	.04
Totals	$20,194.72	$7.01

Sampling costs totalled $3,059.63 and are detailed in the following Table IV.

TABLE IV - Sampling Costs

Item	Costs		Unit Costs Per Foot	Unit Costs Per Sample
Labor	$1,181.97		$0.41	$4.56
Supervision	195.49		.07	.75
Coreboxes	165.32		.06	.64
Gas and Oil	166.15		.06	.64
Repairs to Equipment	12.15			.05
Depreciation	97.71		.03	.38
Payroll Taxes	106.52		.04	.41
Rent and Subsistence	16.98		.01	.07
Pipe	.94			
Assays and Sample Transportation	1,100.21		.38	4.25
Maps and Logs	16.19		.01	.06
Total	$3,059.63	Average	$1.06	$11.81

A recapitulation of the project costs is shown in the following Table V.

TABLE V - Recapitulation of Project Costs

Item	Units	Total Cost	Unit Cost
Roads	4,370 ft.	$2,263.79	$0.52 per ft.
Diamond Drilling	2,881 ft.	20,194.72	7.01 per ft.
Sampling	2,881 ft. or 259 samples	3,059.63	1.06 per ft. 11.81 per sample.
	Total	$25,518.14	Average $8.86 per ft. drilled.

The above costs are well within reason when it is considered that all holes were bottomed "BX" size and that a considerable number of samples were taken and assayed. Some slight additional costs were incurred which were not debited to the project. The operators credited the project with the cost of a core splitter allowed by the contract as well as the value of the unused core boxes.

ORE RESERVES

One of the reasons for the approval of the Cunningham Hill breccia area tungsten project was the possibility of discovering significant

reserves of very low-grade tungsten ore that could be cheaply mined. As the material may have been sub-marginal at the time of the examination of the property, nevertheless important quantities of ore were thought to exist that would constitute a potential back-log should the need for tungsten become more critical than at present. Because of the above, detailed calculations have been made on indicated and inferred ore reserves in the project area.

No measured ore reserves exist on Cunningham Hill. Indicated and inferred reserves are combined as data are too meager to permit a separation. Additional drilling and a less inflexible drilling schedule may have permitted a separation of indicated and inferred ore.

Ore reserve calculations were based on standard methods of computation where the assays for each hole were weighted for an average assay of the hole and this average assay then was applied to the area of influence of the hole as determined by the drilling pattern and the extent of the breccia area. The areas of influence of the various holes are shown in Figure 4. The results obtained from two previously drilled churn drill holes, in addition to the seven project holes, were used in the calculations. No surface sample results were used as this would tend to increase the tungsten content of the ore reserves and it was felt that those samples were not representative.

A general estimate of all of the mineralized material in the area drilled was made, in addition to the computation of ore reserves based

on a grade cutoff of 1 pound of tungstic oxide per ton. This cutoff was fairly strictly followed although allowances were made when small amounts of nearly marginal overburden overlaid the ore. This would tend to decrease the grade of the reserves and increase the quantity although the difference in either case would be minute. The calculations took into consideration the gold content of the ore but no consideration was given to a grade cutoff pertaining to gold. The detailed computation sheets are on file at the Bureau of Mines office in Tucson, Ariz.

All of the assay results used in the calculations were done by Hawley and Hawley of Douglas, Ariz. Six check samples of the same pulp were sent to the Bureau of Mines at Tucson, Ariz. and to Ledoux and Co. of New York. The Bureau of Mines analyst checks very well with the Hawley and Hawley results, averaging a slight bit lower. The Ledoux results averaged less than half of those obtained by Hawley and Hawley. The acceptance of the Hawley and Hawley results is due to their reliability, to their checking by colorimetric methods of tungsten analyses, and because their results were closely checked by the Bureau of Mines. However, the low results obtained by Ledoux and Co. would indicate that additional checking and crosschecking should be done.

Taking the breccia area as a whole and disregarding the cutoff, there was estimated nearly 41,000,000 tons of mineralized material containing an average of 0.81 pounds of tungstic oxide and 39 cents of gold per ton. By applying the 1 pound cutoff, there was estimated

a little over 17,500,000 tons of ore containing an average of 1.23 pounds of tungstic oxide and 73 cents in gold per ton. Nearly 275,000 cubic yards of overburden overlies this ore. The above reserves are shown diagrammatically in Figure 5.

From the above figures, it must be concluded that a very appreciable reserve of tungsten is indicated and inferred. The present value of the reserves in which the cutoff was applied is $4.73 per ton in the ground. In view of the very cheap mining costs that can be applied to fairly large-scaled open-pit mining, between $0.50 and $0.75 per ton, it now seems that the problem is a metallurgical one, the solution of which should determine the final economic status of the deposit. Of course, additional drilling is necessary to further delimit the indicated reserves, and to convert some or all of the inferred reserves into indicated ore.

Preliminary metallurgical testing on samples obtained from one of the churn drill holes was encouraging in that very good recovery was obtained although the grade of concentrate was low. These tests, however, were preliminary and cannot be considered reliable because of the unreliability of the sample furnished. This sample contained extraneous matter.

CONCLUSIONS

The following conclusions are the result of a study of the data obtained from the drilling project, DMEA-1387, Contract Idm-E310, Cunningham Hill Breccia Tungsten Area, Ortiz Mine Grant, Santa Fe County, N. Mex.:

1. The operation of the project was well done and the results obtained can be considered reliable.

2. The total cost of the project was $23,518.14. Overall unit costs of $8.86 per foot drilled is indicated, which seems reasonable for the quality of the work done and the size of hole drilled.

3. Applying cutoff of one pound of tungstic oxide per ton of ore, ore reserves are estimated that contain slightly over 17,500,000 tons which contain 1.23 pounds of WO_3 and 73 cents of gold per ton. This has a present value (January 1953) of $4.73 per ton in the ground.

4. Mining can be done by open-pit methods and costs should be very low.

5. Additional drilling is necessary to reclassify the ore reserves from inferred to indicated categories.

6. The primary question at this time seems to be the solution of a metallurgical problem which may indicate, if satisfactory results are obtained, the economic feasibility of an operation.

7. Irrespective of the economic status of the deposit, a potential source of considerable tungsten occurs on Cunningham Hill.

Mining Division
Date Rec'd
JAN 7 - 1953
BUREAU OF MINES
TUCSON, ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV
Denver, Colorado

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

January 5, 1953

Memorandum

To : W. H. King, Chief, Mining Div., Region IV

From : Chief, Mining Methods Branch, Mining Div., Region IV

Subject : Final Report, Docket DMA-1387X, Contract Idm-E310, Potter & Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed in quintuplicate are the following items for the above final report:

(1) Bureau of Mines engineer's report;
(2) Operator's final narrative report;
(3) Final Forms MF-104 and 104A.

Also enclosed are two extra copies of our engineer's report. His final report was mailed to you today under separate cover.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of all costs be paid.

Walter R. Storms

Walter R. Storms

CC: W. H. King (6)
DMA-1387X
DF

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

January 5, 1953

Memorandum

To : Walter R. Storms, Chief, Mining Methods Branch, Mining Div., Region IV

From : John H. Soule', Mining Engineer, Tucson, Arizona

Subject : Final Progress Report, Docket DMA-1387X, Contract Idm-E310, Potter and Sims, Cunningham Hill Breccia Tungsten Project, Ortiz Mine Grant, Santa Fe County, N. Mex.

Field work on the subject project was terminated on September 30, 1952. The progress report for October-November contained items of assaying, and maps and logs, and was given field approval.

The final report has been received from the operator and the Bureau of Mines engineer's final report has been completed. With the submission of these reports, with accompanying Forms MF-104 and 104A, and this progress report, work on the project will be complete. No additional costs have been incurred since the October-November progress report.

According to Form MF-104, a total of $25,518.15 was spent on the project. Agreement is noted in the final totals of Forms MF-104 and 104A.

John H. Soule'

John H. Soule', Mining Engineer
Mining Methods Branch,
Mining Division, Region IV

CC: W. H. King (Orig. & 6)
DMA-1387X
DF

FOR VICTORY
BUY
UNITED STATES SAVINGS BONDS AND STAMPS

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

RECEIVED

FINAL REPORT

CONTRACT Idm-E-310 DMEA DOCKET 1387

G. R. Griswold, Agent

December 9, 1952

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

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I STATEMENT OF WORK PERFORMED

Work was started under Contract Idm-E-310 on June 1, 1952 and 4,370 feet of road building and 3 drill stations were completed on July 2, 1952. Boyles Bros. Drilling Company of Salt Lake City, Utah moved one diamond drill rig onto the project on July 7, 1952 and drilled seven BX holes for a total of 2,88$ linear feet by September 29, 1952. Contract Idm-E-310 was terminated by direction of the Government on September 30, 1952.

Progress Map showing location of diamond drill holes and new road construction is submitted as Exhibit A.

An east-west vertical section of the drill holes is submitted as Exhibit B.

Drill Logs containing assay results for each hole were made up and completed on December 5, 1952 and form the major part of this Final Report. Exhibit C.

II GEOLOGY

The area explored under subject contract is generally classified as a brecciated monzonite volcanic stock. The monzonite matrix has formed the cementing material in the breccia and the drilling varied from an estimated 90% monzonite porphyry in Diamond Drill Hole No. 1 to an estimated 79% quartzite, sandstone and shale in Diamond Drill Hole No. 7. Diamond Drill Hole No. 7 was drilled close to the edge of the stock and contained a large percentage of interbedded sandstone and shale.

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II GEOLOGY CONTINUED

The tungsten minerals appear to be associated with the monzonite as scheelite occurs in the monzonite cementing material and also in the monzonite porphyry. The tungsten is disseminated throughout the area drilled and probably was introduced with the monzonite and also by circulating hydrothermal solutions. These hydrothermal solutions have altered the rock mass to such an extent that megascopic determination of the different rocks encountered is quite difficult. The identification of andesite and diorite sections, which appear on the various drill logs, were made by megascopically comparing the core with known rock types which have been positively identified previously from thin sections.

III SAMPLING PROCEDURE

All core was examined in a dark room under the ultra-violet light and the scheelite content was rated on each box of core. The rating was based on the presence of scheelite in each 10 feet of core and a 0 rating represents no scheelite observed and a 5 rating indicates that 5 feet of core contained scheelite out of the 10 feet examined.

Each box of core was split and one half of the core was crushed and from this crushed portion, a representative sample was cut and sent off for assay. Each hole was completely assayed as other tungsten minerals besides scheelite are present as evidenced by comparing the ultra-violet ratings to the assays received.

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III SAMPLING PROCEDURE CONTINUED

Sludge samples were also sent off for assay on several of the holes and the results are reported as "S" samples at the bottom of the drill logs.

IV ASSAY RESULTS

Individual sample results are shown on the accompanying drill logs. Six samples were sent to Ledoux and Company, New York, New York and to the United States Bureau of Mines, Tucson, Arizona for check assays because the scheelite observed appeared to indicate higher tungsten content than was originally reported by Hawley & Hawley of Douglas, Arizona.

The results are listed below:

Sample No.	Hawley & Hawley	U. S. Bureau of Mines	Ledoux & Company
4-2 (Drill Hole 4, Box 2)	0.04% WO_3	0.04% WO_3	0.03% WO_3
4-5	0.03	0.03	0.03
4-8	0.08	0.07	0.04
4-10	0.04	0.02	0.02
4-11	0.07	0.10	0.02
4-14	0.25	0.20	0.10

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IV ASSAY RESULTS CONTINUED

A summary of arithmetic averages for each hole follows:

Drill Hole No.	Total Depth	Au oz./ton	WO_3 %
1	568'	0.004	0.025
2	299'	Trace	0.026
3	539'	0.004	0.031
4	326'	0.011	0.046
5	338'	0.047	0.059
6	300'	0.018	0.031
7	510'	0.006	0.027

V ORE RESERVES

No proven ore reserves were developed from drilling under this contract.

VI FINAL PROJECT COSTS

An analysis of the costs for road building and core drilling follows:

A. 4,370 feet of road building and preparation of drill sites.

Labor	$\frac{\$585.92}{4,370'}$	=	\$0.13/ft.
Supervision	$\frac{\$550.00}{4,370'}$	=	\$0.12/ft.
Equipment Rental	$\frac{\$700.00}{4,370'}$	=	\$0.16/ft.

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VI FINAL PROJECT COSTS CONTINUED

Explosives		$\frac{\$62.48}{4,370'}$	=	$0.01/ft.
Miscellaneous				
Payroll Taxes	$113.17			
Rent & Subsistence	39.09			
Gas & Oil	109.52			
Depreciation	51.68			
Bits	51.93			
		$\frac{\$365.39}{4,370'}$	=	$0.08/ft.
TOTAL COST - ROADS		$\frac{\$2,263.79}{4,370'}$	=	$0.52/ft.

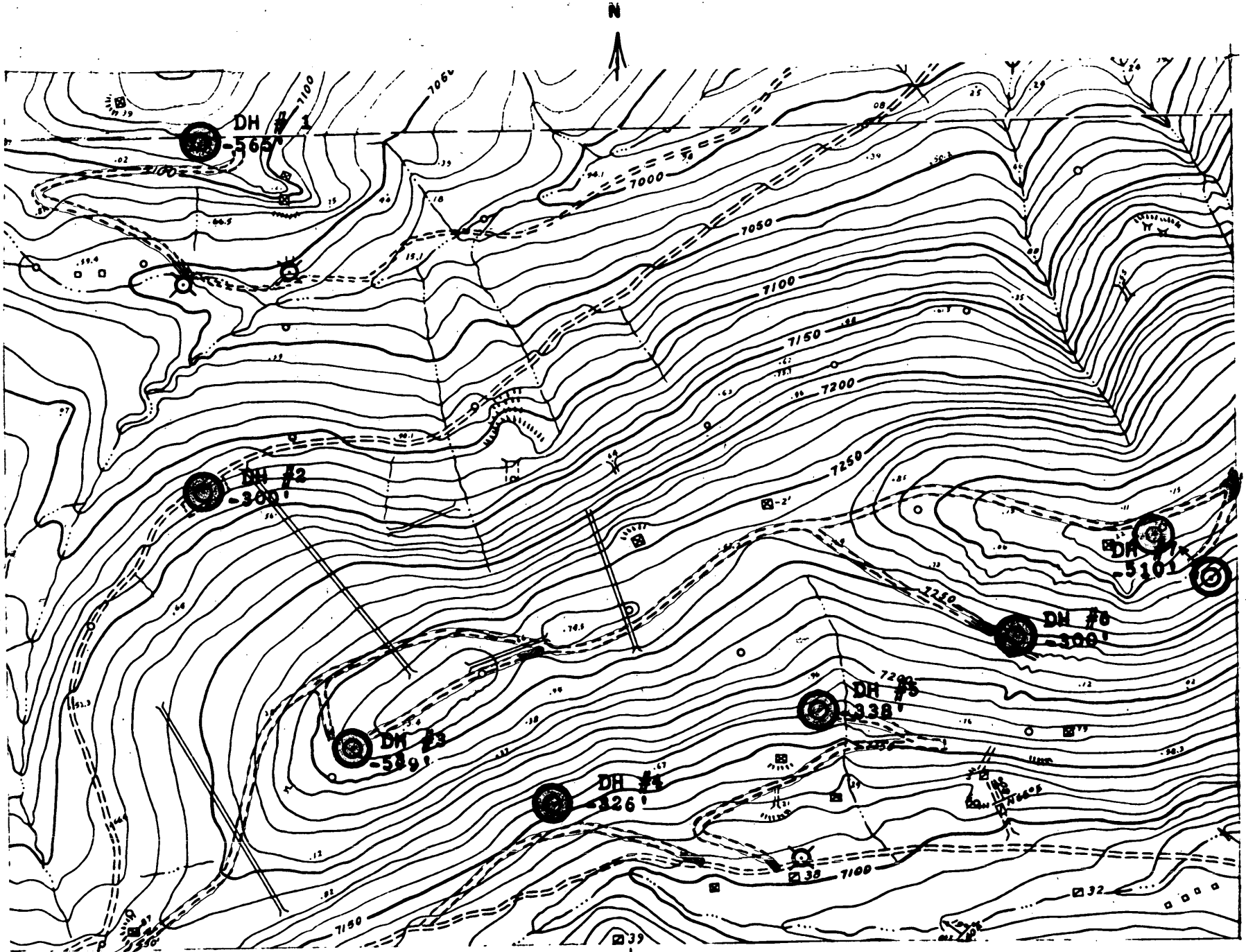
B. 2,881 feet of BX Core Drilling

Drilling		$\frac{\$17,797.25}{2,881'}$	=	$6.18/ft.
Mobilization		$\frac{\$\ 1,000.00}{2,881'}$	=	$0.35/ft.
Supervision		$\frac{\$\ 1,500.00}{2,881'}$	=	$0.52/ft.
Sampling Labor		$\frac{\$\ 1,026.48}{2,881'}$	=	$0.36/ft.
Assaying		$\frac{\$\ 1,100.21}{2,881'}$	=	$0.38/ft.
Miscellaneous				
Core Boxes	$163.80			
Payroll Taxes	191.54			
Repairs	12.15			
Rent & Subsistence	132.43			
Maps & Logs	16.19			
Gas & Oil	178.70			
Depreciation	105.00			
Pipe	2.12			
		$\frac{\$801.93}{2,881'}$	=	$0.28/ft.
TOTAL COST - CORE DRILLING		$\frac{\$23,254.36}{2,881'}$	=	$8.07/ft.

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent



POTTER AND SIMS

PROGRESS MAP, CUNNINGHAM HILL TUNGSTEN AREA

ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

SCALE: 1 INCH = 200 FEET

CONTOUR INTERVAL: 10 FEET

DMA 1387x CONTRACT IDM-E-310

LEGEND

NEW ROAD CONSTRUCTION

VERTICAL DIAMOND DRILL HOLES COMPLETED

VERTICAL DRILL HOLE PARTIALLY COMPLETED

OLD CHURN DRILL HOLE

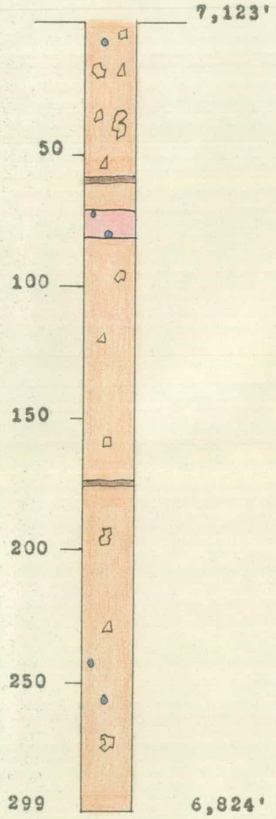
EXHIBIT "A"

POTTER AND SIMS
1500 LAS LOMAS ROAD N.E.
ALBUQUERQUE, NEW MEXICO

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

CONTRACT: IDM-E-310
DMEA DOCKET: 1387

LOG OF DIAMOND DRILL HOLE NO. 2



ELEVATION COLLAR OF HOLE: 7,123'
TOTAL DEPTH: 299'

CORE RECOVERY: 92%

DATE STARTED: 7/22/52
DATE COMPLETED: 7/26/52

BOX NO.	DEPTH	DESCRIPTION	BRECCIATION %QTZ.	BRECCIATION	BRECCIATION %MONZ.	MINERALIZATION	SCHEELITE RATING	ASSAYS AU OZ/TON	ASSAYS CU %	ASSAYS WO_3 %	SAMPLE NO. AND DEPTH
1	0'- 6' NX	MONZONITE BRECCIA	90	GOOD	10	HEMATITE, LIMONITE, PYRITE, CHALCOPYRITE	0	NONE	0.02	0.04	2-1 0'-6'
2	6'- 10' "	" " W HORNFELS	90	GOOD	10	" " " "	1-	0.005	0.08	0.05	2-2 6'-10'
3	10'- 16' "	" "	70	"	30	" " " "	0	NONE	0.05	0.04	2-3 10'-16'
4	16'- 25' BX	" " "	90	"	10	" " " CALCITE IN SEAMS	0	TRACE	0.07	0.03	2-4 16'-25'
5	25'- 35'	" " "	80	"	20	" " CHALCOPYRITE AT 27'	0	TRACE	0.04	TRACE	c-10 25'-35'
6	35'- 44'	" "	25	"	75	GOOD HEMATITE, PYRITE	0	NONE		0.03	2-6 35'-44'
7	44'- 54'	" "	20	"	80	" " "	0	TRACE	NIL	0.05	c-11 44'-54'
8	54'- 62'	" " ANDESITE-	30	POOR	70	POOR " "	0	NONE		0.03	2-8 54'-62'
9	62'- 72'	" " SHALE-	5	POOR	95	POOR "	0	NONE		0.02	2-9 62'-72'
10	72'- 81'	" PORPHYRY		POOR	100	FAIR SPECULAR HEMATITE, PYRITE	1-	TRACE	TRACE	TRACE	c-12 72'-81'
11	81'- 91'	MONZONITE BRECCIA	5	FAIR	95	GOOD " " "	0	NONE		0.03	2-11 81'-91'
12	91'- 101'	" " GRAY	5	FAIR	95	GOOD " " " LEACHED	0	TRACE	NIL	0.04	c-13 91'-101'
13	101'- 113'	" "	5	POOR	95	POOR " " "	0	NONE		0.02	2-13 101'-113'
14	113'- 123'	" GRAY " KAOLINIZED	5	FAIR	95	FAIR " " "	0	NONE		0.01	2-14 113'-123'
15	123'- 133'	" " " "	5	FAIR	95	FAIR " " "	0	NONE		0.02	2-15 123'-133'
16	133'- 143	" " " "	5	POOR	95	FAIR " " "	0	NONE		0.01	2-16 133'-143'
17	143'- 152'	" " " "	5	"	95	FAIR " " " MUD SEAM, RED CLAY AT 146'	0	NONE		0.01	2-17 143'-152'
18	152'- 162'	" " " "	5	"	95	FAIR " " "	0	TRACE		0.03	c-14 152'-162'
19	162'- 172'	" " " " SHALE	5	"	95	" " " "	0	NONE		0.01	2-19 162'-172'
20	172'- 182'	" " " AN"DESITE-	20	FAIR	80	" " " "	0	NONE		NONE	2-20 172'-182'
21	182'- 191'	" " " KAOLINIZED	5	POOR	95	" " " "	0	NONE		0.02	2-21 182'-191'
22	191'- 203'	" " " "	5	"	95	GOOD " " "	0	NONE		NONE	2-22 191'-203'
23	203'- 212'	" " " "	5	"	95	GOOD " " " HEMATITE LATHES AT 211'	0	TRACE		0.05	c-15 203'-212'
24	212'- 224'	" " " "	5	"	95	" " " " GREEN & ORANGE AT 219'	0	NONE		0.01	2-24 212'-224'
25	224'- 234'	" " " "	5	"	95	" " " "	0	NONE		0.01	2-25 224'-234'
26	234'- 248'	" " " "	5	"	95	FAIR " " "	0	0.01		0.01	2-26 234'-248'
27	248'- 258'	" " " "	5	"	95	GOOD MORE " " "	1-	TRACE		0.05	c-16 248'-258'
28	258'- 268'	" " " "	5	"	95	FAIR " " "	0	0.01		0.03	2-28 258'-268'
29	268'- 280'	" " " "	5	"	95	POOR " " " BROKEN GROUND POOR RECOVERY	0	TRACE		0.04	2-29 268'-280'
30	280'- 293'	" " " "	5	"	95	POOR " " " " " MUD SEAMS	0	TRACE		0.06	c-17 280'-293'
31	293'- 299'	" " " "	5	"	95	POOR " " " 2 FT. OF CORE RECOVERED BADLY BROKEN GROUND.	0	0.01		0.01	2-31 293'-299'

ARITHMETICAL AVERAGE TRACE AU 0.026 WO_3

LEGEND

- MONZONITE BRECCIA
- MONZONITE PORPHYRY
- ANDESITE
- SCHEELITE

ESTIMATED COMPOSITION OF SECTION
78% MONZONITE
16% QUARTZITE AND HORNFELS
6% ANDESITE

POTTER AND SIMS
1500 LAS LOMAS ROAD N.E.
ALBUQUERQUE, NEW MEXICO

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

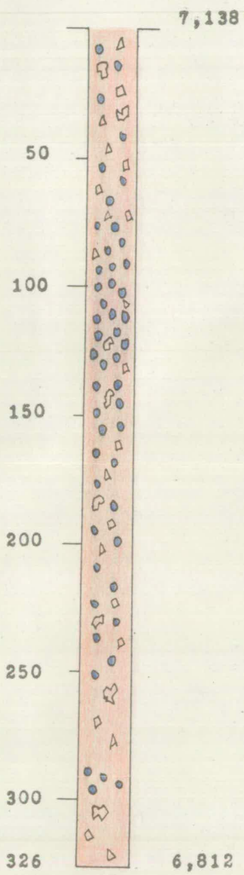
CONTRACT: IDM-E-310
DMEA DOCKET: 1387

LOG OF DIAMOND DRILL HOLE NO. 4

ELEVATION COLLAR OF HOLE: 7138'
TOTAL DEPTH: 326'

CORE RECOVERY: 92%

DATE STARTED: 8/15/52
DATE COMPLETED: 8/24/52



BOX NO.	DEPTH	DESCRIPTION	BRECCIATION	%QTZ.	%MONZ.	MINERALIZATION	SCHEELITE RATING	AU OZ/TON	WO_3 %	SAMPLE NO. AND DEPTH
	0'- 9'	OVERBURDEN								
1	9'- 14' NX	MONZONITE BRECCIA	30 GOOD		70	POOR, HEMATITE, PYRITE, MANGANESE STAIN	2	TRACE	0.03	4-1 9'-14'
2	14'- 20' NX	MONZONITE BRECCIA	5 GOOD		95	GOOD, HEMATITE, PYRITE	5	TRACE	0.04	4-2 14'-20'
3	20'- 30' BX	" "KAOLIN'	25 FAIR		75	FAIR, " MORE PYRITE, OXIDATION STOPS AT 22'	1-	TRACE	0.02	4-3 20'-30'
4	30'- 42'	" " "	45 FAIR		55	FAIR, " " SHALE INCLUSIONS	1-	TRACE	0.02	4-4 30'-42'
5	42'- 51'	" " KAOLINIZED	50 FAIR		50	FAIR " "	3	TRACE	0.03	4-5 42'-51'
6	51'- 61'	" " "	40 GOOD		60	GOOD " " PORPHYRY 58-59'	1	TRACE	0.02	4-6 51'-61'
7	61'- 74'	" " "	50 FAIR		50	FAIR SIDERITE " POOR CORE RECOVERY	2	TRACE	0.06	4-7 61'-74'
8	74'- 86'	" " "	25 GOOD		75	FAIR " SCHEELITE ASSOCIATED WITH PYRITE	8	0.003	0.08	4-8 74'-86'
9	86'- 96'	" " "	55 GOOD		45	GOOD BLACK COATING ON PYRITE	7	TRACE	0.04	4-9 86'-96'
10	96'- 105'	" " "	5 GOOD		95	GOOD PYRITE, SCHEELITE IN MONZONITE	7	0.005	0.04	4-10 96'-105'
11	105'- 115'	" " "	35 FAIR		65	FAIR " SCHEELITE CRYSTALS AT 113'	10	0.005	0.07	4-11 105'-115'
12	115'- 124'	" " "	45 GOOD		55	FAIR "	5	TRACE	0.03	4-12 115'-124'
13	124'- 134'	" " "	25 GOOD		75	FAIR "	4	0.005	0.03	4-13 124'-134'
14	134'- 146'	" " "	25 FAIR		75	FAIR COARSE PYRITE AT 139', CALCITE WITH PYRITE	3	0.01	0.25	4-14 134'-146'
15	146'- 157'	" " "	70 GOOD		30	FAIR PYRITE " GRAY CHERT	5	0.01	0.11	4-15 146'-157'
16	157'- 167'	" " "	65 GOOD		35	FAIR PYRITE, CALCITE	1-	0.005	0.04	4-16 157'-167'
17	167'- 177'	" " "	60 GOOD		40	FAIR PYRITE, CALCITE, SPECULAR HEMATITE	3	0.01	0.05	4-17 167'-177'
18	177'- 187'	" " "	85 POOR		15	POOR " "	1-	0.01	0.02	4-18 177'-187'
19	187'- 197'	" " "	65 GOOD		35	GOOD " " " "	6	0.05	0.09	4-19 187'-197'
20	197'- 206'	" " "	55 GOOD		45	FAIR " " " "	4	0.06	0.06	4-20 197'-206'
21	206'- 216'	" " "	20 FAIR		80	FAIR " " " "	3	0.06	0.07	4-21 206'-216'
22	216'- 229'	" " "	50 FAIR		50	GOOD " " " "	4	0.075	0.04	4-22 216'-229'
23	229'- 240'	" " "	30 GOOD		70	FAIR " " "	2	0.01	0.04	4-23 229'-240'
24	240'- 252'	" " "	40 FAIR		50	FAIR " " " " DIORITE AT 250-251'	3	TRACE	0.06	4-24 240'-252'
25	252'- 262'	" " "	30 GOOD		70	GOOD PYRITE, CALCITE SPECULAR HEMATITE, SIDERITE	3	0.01	0.04	4-25 252'-262'
26	262'- 271'	" " "	10 FAIR		90	FAIR " " "	0	0.01	0.01	4-26 262'-271'
27	271'- 281'	" " "	40 FAIR		60	GOOD " " " "	0	0.01	TRACE	4-27 271'-281'
28	281'- 293'	" " "	90 FAIR		10	FAIR " " LITTLE SCHEELITE AT 292'8"	0+	0.005	0.02	4-28 281'-293'
29	293'- 302'	" " "	80 FAIR		20	FAIR " SCHEELITE 292'8" TO 290' SPEC. HEM,	1	TRACE	0.02	4-29 293'-302'
30	302'- 312'	" " "	25 FAIR		75	FAIR " HEAVY SPECULAR HEMATITE	0	TRACE	0.02	4-30 302'-312'
31	312'- 321'	" " "	5 GOOD		95	FAIR " " "	0	TRACE	0.03	4-31 312'-321'
32	321'- 326'	" " "	10 GOOD		90	FAIR " " "	0	TRACE	TRACE	4-32 321'-326'6"
								TRACE	0.05	4-s1 9'-184'
						SLUDGE SAMPLES		TRACE	0.04	4-s2 184'-326'
						ARITHMETIC AVERAGE		0.011 AU	0.046 WO_3	

LEGEND

- MONZONITE BRECCIA
- MONZONITE PORPHYRY
- ANDESITE
- SCHEELITE

ESTIMATED COMPOSITION OF SECTION

59% MONZONITE
41% QUARTZITE

POTTER AND SIMS
1500 LAS LOMAS ROAD NE
ALBUQUERQUE, NEW MEXICO

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

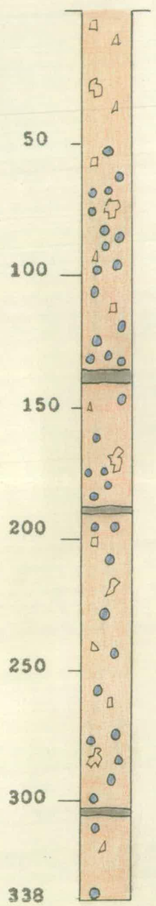
CONTRACT: IDM-E-310
DMEA DOCKET: 1387

LOG OF DIAMOND DRILL HOLE NO. 5

ELEVATION COLLAR OF HOLE: 7,176'
TOTAL DEPTH: 338' (ABANDONED)

CORE RECOVERY: 84%

DATE STARTED: 8/26/52
DATE ABANDONED: 9/7/52



BOX NO.	DEPTH	DESCRIPTION	BRECCIATION %QTZ.		%MONZ.		MINERALIZATION	SCHEELITE RATING	AU OZ/TON	WO_3 %	SAMPLE NO. AND DEPTH
1	Nx 2'- 13'	MONZONITE BRECCIA	50	GOOD	50		POOR, HEMATITE, MANGANESE STAIN	0	0.03	0.03	5-1 2'-13'
2	Nx13'- 27'	" KAO"LINIZED	40	GOOD	60		POOR " " "	0	0.02	0.03	5-2 13'-27'
3	Bx27'- 42'	" " "	30	FAIR	70		FAIR " " "	0	0.06	0.05	5-3 27'-42'
3	42'- 54'	" " "	40	FAIR	60		FAIR " " " SCHEELITE STARTS AT 53'	1-	0.12	0.06	5-4 42'-54'
5	54'- 65'	" " "	65	GOOD	35		GOOD " " " SLICKENSIDES AT 64'	1	0.13	0.09	5-5 54'-65'
6	65'- 76'	" " "	75	GOOD	25		GOOD " " " PYRITE AT 73' SERICITE	7	0.09	0.11	5-6 65'-76'
7	76'- 86'	" " "	60	GOOD	40		GOOD " SPECULAR HEMATITE, PYRITE	8	0.05	0.04	5-7 76'-86'
8	86'- 97'	" "	20	GOOD	80	HARD	GOOD " " " "	6	0.12	0.05	5-8 86'-97'
9	97'- 110'	" "	10	FAIR	90	HARD	GOOD " " " " PSILOMELANE	2	0.03	0.04	5-9 97'-110'
10	110'- 120'	" "	30	GOOD	70	HARD	GOOD " " " " "	7	0.16	0.11	5-10 110'-120'
11	120'- 131'	" KAO"LINIZED	50	GOOD	50	HARD	FAIR LONG FRACTURES WITH HEMATITE,PYRITE	5	0.04	0.07	5-11 120'-131'
12	131'- 142'	" " " 3'DIOR	50	GOOD	20	HARD	FAIR SPECULAR HEMATITE, PYRITE	8	0.11	0.10	5-12 131'-142'
13	142'- 154'	" " "	80	GOOD	20	HARD	GOOD " " "	7	0.08	0.08	5-13 142'-154'
14	154'- 165'	" " "	95	POOR	5		FAIR " " "	5	0.03	0.10	5-14 154'-165'
15	165'- 177'	" " "	60	POOR	40	HARD	FAIR " " "	5	0.01	0.05	5-15 165'-177'
16	177'- 188'	" " "	40	FAIR	60	HARD	GOOD " " "	8	0.02	0.12	5-16 177'-188'
17	188'- 202'	" " "	80	FAIR	10		FAIR " " " SCHEELITE CRYSTAL AT 201'	7	0.01	0.08	5-17 188'-202'
18	202'- 212'	" "	80	FAIR	20	HARD	FAIR " " " DIORITE 189-190	6	0.02	0.06	5-18 202'-212'
19	212'- 223'	" "	90	POOR	10		POOR " " "	3	0.01	0.02	5-19 212'-223'
20	223'- 238'	" " "	40	FAIR	60		POOR " " "	4	0.005	0.02	5-20 223'-238'
21	238'- 250'	" " "	50	FAIR	50		FAIR " " " CALCITE	5	0.03	0.03	5-21 238'-250'
22	250'- 260'	" " "	30	GOOD	70		FAIR " " " " SERICITE	3	0.005	0.01	5-22 250'-260'
23	260'- 269'	" " "	30	GOOD	70		GOOD " " "	3	0.02	0.03	5-23 260-269'
24	269'- 281'	" " "	40	FAIR	60		FAIR " " " SHALE INCLUSION AT 280'	5	0.015	0.08	5-24 269'-281'
25	281'- 291'	" " "	40	FAIR	60		FAIR " " "	6	0.05	0.09	5-25 281'-291'
26	291'- 301'	" " "	50	FAIR	50		FAIR " " "	6	0.04	0.05	5-26 291'-301'
27	301'- 322'	" " "	40	FAIR	50		FAIR " " " DIORITE 304-305'	4	0.04	0.05	5-27 301'-322'
28	322'- 333'	" " "	70	POOR	30		POOR " " "	2	0.02	0.03	5-28 322'-333'
29	333'- 338'	" " "	95	POOR	5		POOR " " " SCHEELITE AT 337'9"	0+	0.005	0.04	5-29 333'-338'
							SLUDGE SAMPLES		0.11	0.03	5-s-1 2'-153'
									0.04	0.09	5-s-2 153'-215'
									0.02	0.07	5-s-3 215'-338'
							ARITHMETIC AVERAGE		0.047 AU	0.059 WO_3	

LEGEND

MONZONITE BRECCIA

SCHEELITE

DIORITE

ESTIMATED COMPOSITION OF SECTION
46% MONZONITE
53% QUARTZITE
1% DIORITE

POTTER AND SIMS
1500 LAS LOMAS ROAD NE
ALBUQUERQUE, NEW MEXICO

CUNNINGHAM HILL AREA, ORTIZ MINE GRANT, SANTA FE COUNTY, NEW MEXICO

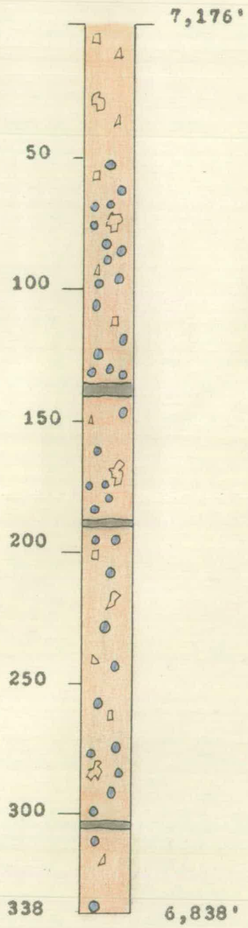
CONTRACT: IDM-E-310
DMEA DOCKET: 1387

LOG OF DIAMOND DRILL HOLE NO. 5

ELEVATION COLLAR OF HOLE: 7,176'
TOTAL DEPTH: 338' (ABANDONED)

CORE RECOVERY: 84%

DATE STARTED: 8/26/52
DATE ABANDONED: 9/7/52



BOX NO.	DEPTH	DESCRIPTION	BRECCIATION %QTZ.		%MONZ.		MINERALIZATION	SCHEELITE RATING	AU OZ/TON	WO_3 %	SAMPLE NO. AND DEPTH
1	NX 2'- 13'	MONZONITE BRECCIA	50	GOOD	50		POOR, HEMATITE, MANGANESE STAIN	0	0.03	0.03	5-1 2'-13'
2	NX13'- 27'	" KAO"LINIZED	40	GOOD	60		POOR " " "	0	0.02	0.03	5-2 13'-27'
3	BX27'- 42'	" " "	30	FAIR	70		FAIR " " "	0	0.06	0.05	5-3 27'-42'
3	42'- 54'	" " "	40	FAIR	60		FAIR " " " SCHEELITE STARTS AT 53'	1-	0.12	0.06	5-4 42'-54'
5	54'- 65'	" " "	65	GOOD	35		GOOD " " " SLICKENSIDES AT 64'	1	0.13	0.09	5-5 54'-65'
6	65'- 76'	" " "	75	GOOD	25		GOOD " " " PYRITE AT 73' SERICITE	7	0.09	0.11	5-6 65'-76'
7	76'- 86'	" " "	60	GOOD	40		GOOD " SPECULAR HEMATITE, PYRITE	8	0.05	0.04	5-7 76'-86'
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9	97'- 110'	" "	10	FAIR	90	HARD	GOOD " " " " PSILOMELANE	2	0.03	0.04	5-9 97'-110'
10	110'- 120'	" "	30	GOOD	70	HARD	GOOD " " " " "	7	0.16	0.11	5-10 110'-120'
11	120'- 131'	" KAO"LINIZED	50	GOOD	50	HARD	FAIR LONG FRACTURES WITH HEMATITE,PYRITE	5	0.04	0.07	5-11 120'-131'
12	131'- 142'	" " " 3'DIOR	50	GOOD	20	HARD	FAIR SPECULAR HEMATITE, PYRITE	8	0.11	0.10	5-12 131'-142'
13	142'- 154'	" " "	80	GOOD	20	HARD	GOOD " " "	7	0.08	0.08	5-13 142'-154'
14	154'- 165'	" " "	95	POOR	5		FAIR " " "	5	0.03	0.10	5-14 154'-165'
15	165'- 177'	" " "	60	POOR	40	HARD	FAIR " " "	5	0.01	0.05	5-15 165'-177'
16	177'- 188'	" " "	40	FAIR	60	HARD	GOOD " " "	8	0.02	0.12	5-16 177'-188'
17	188'- 202'	" " "	80	FAIR	10		FAIR " " " SCHEELITE CRYSTAL AT 201'	7	0.01	0.08	5-17 188'-202'
18	202'- 212'	" "	80	FAIR	20	HARD	FAIR " " " DIORITE 189-190	6	0.02	0.06	5-18 202'-212'
19	212'- 223'	" "	90	POOR	10		POOR " " "	3	0.01	0.02	5-19 212'-223'
20	223'- 238'	" " "	40	FAIR	60		POOR " " "	4	0.005	0.02	5-20 223'-238'
21	238'- 250'	" " "	50	FAIR	50		FAIR " " " CALCITE	5	0.03	0.03	5-21 238'-250'
22	250'- 260'	" " "	30	GOOD	70		FAIR " " " " SERICITE	3	0.005	0.01	5-22 250'-260'
23	260'- 269'	" " "	30	GOOD	70		GOOD " " "	3	0.02	0.03	5-23 260-269'
24	269'- 281'	" " "	40	FAIR	60		FAIR " " " SHALE INCLUSION AT 280'	5	0.015	0.08	5-24 269'-281'
25	281'- 291'	" " "	40	FAIR	60		FAIR " " "	6	0.05	0.09	5-25 281'-291'
26	291'- 301'	" " "	50	FAIR	50		FAIR " " "	6	0.04	0.05	5-26 291'-301'
27	301'- 322'	" " "	40	FAIR	50		FAIR " " " DIORITE 304-305'	4	0.04	0.05	5-27 301'-322'
28	322'- 333'	" " "	70	POOR	30		POOR " " "	2	0.02	0.03	5-28 322'-333'
29	333'- 338'	" " "	95	POOR	5		POOR " " " SCHEELITE AT 337'9"	0+	0.005	0.04	5-29 333'-338'
							SLUDGE SAMPLES		0.11	0.03	5-s-1 2'-153'
									0.04	0.09	5-s-2 153'-215'
									0.02	0.07	5-s-3 215'-338'
							ARITHMETIC AVERAGE		0.047 AU	0.059 WO_3	

LEGEND

MONZONITE BRECCIA

SCHEELITE

DIORITE

ESTIMATED COMPOSITION OF SECTION
46% MONZONITE
53% QUARTZITE
1% DIORITE

FILE COPY
SURNAME:

400

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

Rutledge
Chapman
Eff.
Lyn.
Selfridge
Rutledge

SEP 1 1953

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

Re: Docket No. DMA 1387X- Tungsten
Potter and Sims
Cunningham Hill area
Ortis Mine Grant
Santa Fe County, New Mexico
Contract No. Ids-E310

Dear Mr. King:

Reference is made to your letter dated August 18, 1953, regarding the final reports on the subject contract.

In view of the time elapsed since the contract was terminated (September 30, 1952), the Operator's final report and the Bureau of Mines' final report may be retained in your office for submission with the final report by the Geological Survey. We understand the Geological Survey report will be completed shortly.

However in the future, it will be appreciated if you will forward the Operator's final report as soon as possible with the Field Team's final report to follow as soon as practicable.

Sincerely yours,

SIGNED

Chairman, Operating Committee

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

FARutledge:foc 8-31-53

cc: Docket
Code 400
FT. REG. 4
Operating Comm.
Adm. Reading File
R. W. Geehan, USBM
Mary Miller, USGS

R.C.A.
9-1-53

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

224 New Customhouse
Denver 2, Colorado

August 18, 1953

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMA-1387 (Tungsten), Contract Idm-E310, Potter and Sims, Santa Fe County, New Mexico

Reference is made to the letter dated August 12, 1953 from the Acting Chairman of the Operating Committee regarding the final report on Docket DMA-1387.

This office received the operator's final report and the Bureau of Mines engineer's final report on January 7, 1953. Final audit was completed on February 11, 1953 and final payment made to the operator on February 13, 1953. We have not received the final geologic report from the Geological Survey. We have retained the operator's final report and the Bureau of Mines engineer's final report in this office so that they may be reviewed with the final geologic report when it is received. The final engineering and final geologic report will constitute the final Field Team report.

We have considered it advisable to forward all the above reports to the Washington office at one time. Please advise us of your preference in this matter.

W. H. King

W. H. King

FILE COPY
SURNAME: 913

400

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

AUG 12 1953

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

Re: Docket No. DMA 1387 - Tungsten
Potter and Sims
Cunningham Hill area
Ortis Mine Grant
Santa Fe County, New Mexico
Contract Idm-E310

Dear Mr. King:

On March 13, 1953, we wrote you as follows concerning the subject docket:

"Reference is made to the subject contract for which a final audit has been received. It will be appreciated if you will furnish this office with a final Field Team report and a final Operator's report. If no final report has been received from the Operator, Potter and Sims should be requested to furnish such a report as specified in Article 7 (b) of the contract in order that this docket may be closed."

Please review this matter at your early convenience, and advise us accordingly.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

APPROVED:

J. M. Hedges
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

TLChapman/foc 8-10-53
cc: Docket
Code 400
Oper. Comm.
Adm. Reading File
FT. Reg. 4
R. W. Geehan, USBM
D. M. Lemmon, USGS

R.C.L. 8-12-53

FILE COPY
SURNAME:

Rutledge
Martin
Selfridge

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

MAR 13 1953

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

Re: Docket No. DMA 1387X - Tungsten
Potter and Sims
Cunningham Hill area
Ortiz Mine Grant
Santa Fe County, New Mexico
Contract No. Idm-M310

Dear Mr. King:

Reference is made to the subject contract for which a final audit has been received. It will be appreciated if you will furnish this office with a final Field Team report and a final Operator's report. If no final report has been received from the Operator, Potter and Sims should be requested to furnish such a report as specified in Article 7(b) of the contract in order that this docket may be closed.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Approved:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

FARutledge/ls
3/12/53

cc: Docket
FT, Reg. IV
Code 400
Admn. Read. File
Oper. Committee
D. M. Lemmon, USGS
R. W. Geehan, USBM

FILE COPY
SURNAME:

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

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

February 27, 1953

Martin for Chapman

T. L. Chapman, Mining Engineer
Iron and Ferro-Alloy Division, DMEA

Docket No. DMA 1387 - Tungsten
Potter and Sims
Cunningham Hill area
Ortiz Mine Grant
Santa Fe County, New Mexico
Contract No. Idm-E-310

Summary of possible ore tonnage and values:

Accompanying sketch shows possible area of mineralization and depth of same.

Assumed area amounts to 660,000 square feet and with a vertical range of 250 feet would give a total of 165,000,000 cubic feet. Allowing 12 cubic feet to the ton, the possible mineralized area would amount to 13,750,000 tons.

The average values for the 5 diamond drill holes in this area are 0.046 percent WO_3 and 0.019 ounces in gold. It is possible this area would show some small values in copper and molybdenum that would have a by-product value.

0.046 percent WO_3 or 0.92 pounds at $3.25 per pound	$2.99
0.019 ounces gold at $35.00 per ounce	.66
Gross value	$3.65

This area could be mined by open pit with a ratio of 1 ton of ore to 2 tons of waste. The cost of mining should not exceed $0.75 per ton. Milling and other costs would amount to about $1.25 per ton or a total of $2.00 per ton.

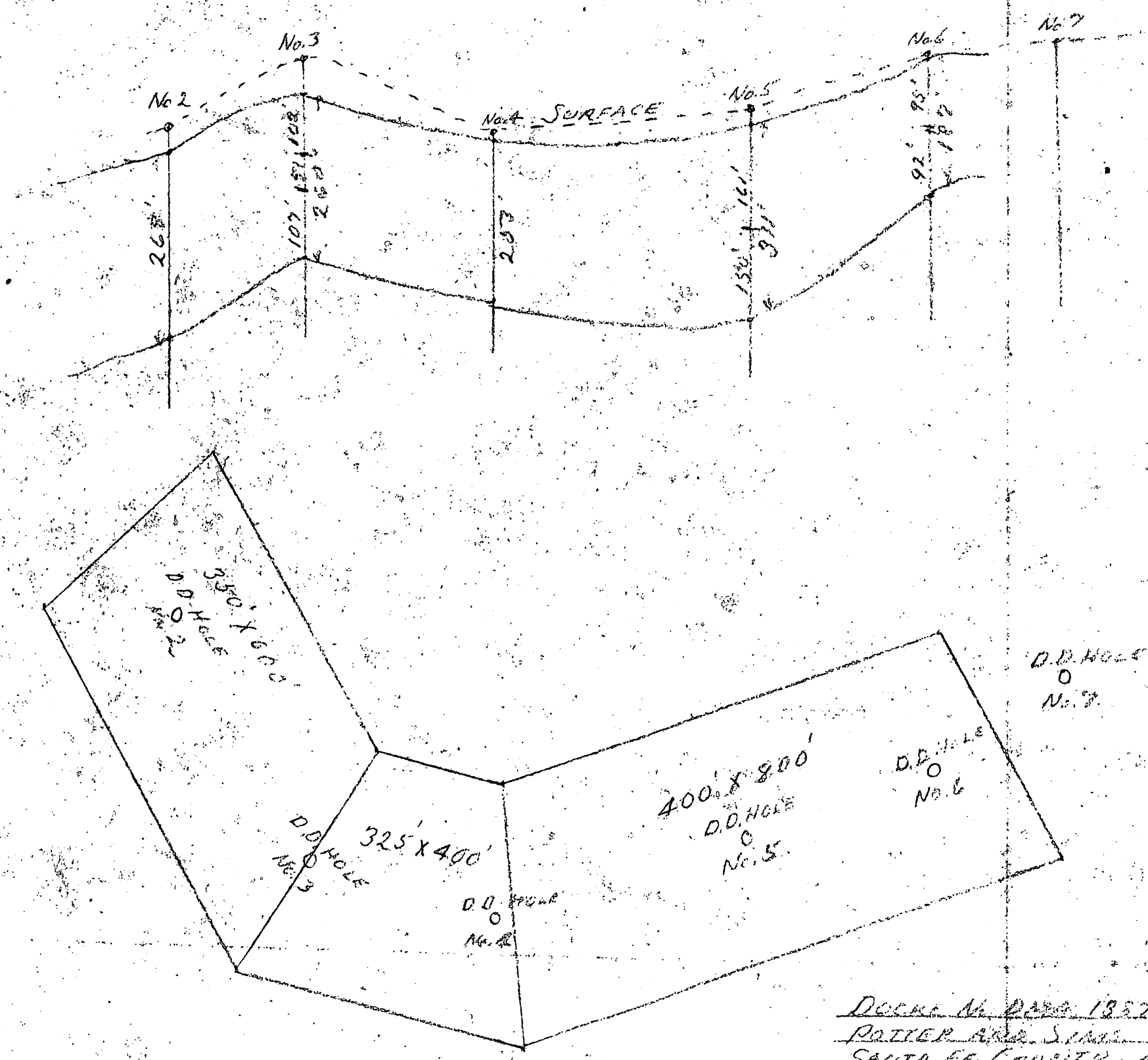
A value of $3.65 per ton with an 80 percent saving leaves $2.92 per ton. This would leave a possible profit of $0.92 per ton before taxes and amortization.

Thomas L. Chapman

TLChapman/ls
2/27/53
cc: Docket
Admn. Reading File
Code 400

Docket No. DMA 1387 - Tungsten
Potter and Sims
Santa Fe County, New Mexico
Contract No. Idm-E310

Hole No.	Diamond Drill Holes From	To	Feet	Assays Au. ozs.	Cu. %	WO_3 %	Lbs. WO_3
1	4'	150'	146	0.021		Tr.	
			46		0.73		
			50		0.06		
	299'	309'	10			0.06	1.20
	499'	508'	9			0.03	0.6
2	25'	293'	268	Tr.	Tr.	0.036	0.72
3	49'	151'	102	Tr.		0.026	0.52
	202'	309'	107	Tr.		0.052	1.04
4	9'	262'	253	0.013		0.059	1.18
5	27'	188'	161	0.0736		0.0751	1.502
	188'	338'	150	0.022		0.046	0.92
	27'	338'	311	0.0486		0.0611	1.222
6	1'	96'	95	0.0476		0.0466	0.932
	96'	188'	92	0.0137		0.0272	0.544



Decne M. Rosa 1952
Potter Area Sec. 5
Santa Fe County, N.M.
Possible Mineralized Zone
Diamond Drill Holes 2, 3, 4, 5 & 6
Scale 1" = 200'

See Memo TLC to WSM 2/27/53

Docket

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JAN 26 1953

224 New Customhouse
Denver 2, Colorado

January 21, 1953

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Termination of Contract Idm-E310, Docket DMA 1387, Potter and Sims

Reference is made to your letter dated January 9, 1953, regarding final reports necessary for closing out Contract Idm-E310.

Work under this contract was terminated September 30, 1952. The operator's final monthly progress report Form MF-104 was received in this office on January 7, 1953. The auditors examined the books of the company on January 14, 15 and 16, 1953. The audit report is now being prepared. The final engineering report is in this office but we believe it advisable to hold it here until the final audit report and final geologic report have been received. We have been informed that the Geological Survey will not have a man available to visit the property for at least two weeks. As soon as the final geologic report has been received it will be combined with the final engineering report and forwarded to your office.

W. H. King

W. H. King

Coe
1-26-53

Copy retained 400

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 1953

224 New Customhouse
Denver 2, Colorado

December 30, 1952

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Form MF-104, DMA Docket 1387X, Contract Idm-E310, (Tungsten), Potter and Sims, Cunningham Hill Tungsten Project, Ortiz Mine Grant, Santa Fe County, New Mexico

Enclosed are two copies of the Operator's Monthly Progress Report Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the period of September 1952 pertaining to DMA Docket 1387X, Contract Idm-E310, Potter and Sims.

W. H. King
W. H. King

Enclosures

REGIONAL DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 17 1952

GD
11/19/52

November 12, 1952

E. D. Talbert, Acting Chief,
Contract Administration & Audit Division
Defense Minerals Exploration Administration
Washington 25, D. C.

Re: Docket No. DMEA-1387
Contract Idm-E310
Potter and Sims

Dear Mr. Talbert:

Reference is made to your letter of November 4, 1952.

On October 28, 1952 Potter and Sims filed a reclaim. Upon reviewing the contract it was determined that the deduction was in error and an amount of $720.30 will be reinstated on the final payment.

Sincerely yours,

T. A. Christensen
Acting Special Assistant
to the Regional Director

FILE COPY
SURNAME:
800
Talbert

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

NOV 4 1952

BH

Mr. Alfred K. Olsen
DMEA Finance Officer
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-1387
Contract Idm-2310
Potter and Sims

Dear Mr. Olsen:

Reference is made to your Administrative Audit Difference Statement covering the August, 1952 Form MF-104 from the referenced Operator.

This Difference Statement indicates the disallowance for overcharges on drilling apparently on the assumption that the allowable maximum of $7.00 per foot covers all costs of the project applicable to the drilling operation. Your attention is invited, however, to the fact that the allowable maximum of $7.00 per foot applies only to the drilling costs done under the independent contract. Application of the number of units of progress per month against the drilling costs shown on the MF-104, as having been paid under the independent contract, indicates that these costs as charged by the Operator are well within the $7.00 per foot allowable maximum. Please advise.

Sincerely yours,

11/4/52

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration and
Audit Division

EDTalbert/wb
November 4, 1952

Copy to: Docket
Admr. Reading File
Mr. Selfridge
Mr. Brading
Mr. Talbert

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

224 New Customhouse
Denver 2, Colorado

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration

October 23, 1952

OCT 29 1952

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Contract Idm-E310, DMEA Docket 1387, Potter and Sims

Enclosed are the original and two copies of "Termination of Exploration Project Contract by Agreement After Commencement but Before Completion of the Work" covering Contract Idm-E310. Copies of this agreement have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

Also enclosed is a copy of a letter dated October 16, 1952, from G. R. Griswold, Agent, regarding the final settlement of Contract Idm-E310.

W.H. King
W.H. King

Enclosures

cae 10.29.52

October 16, 1952

Mr. Walter R. Storms
United States Bureau of Mines
P.O. Box 4097, University Station
Tucson, Arizona

Re: Contract Idm-E-310
DMEA Docket 1387

Dear Mr. Storms:

I have studied the Termination Agreement pertaining to subject contract and am returning it signed. It is requested that the Audit Division be consulted and advised that certain assays will not be received until late October or some time in November and that the bill for such assays is to be a proper charge against this contract. This may be taken care of under paragraph (3)(b) "the costs of any reports, accounts, and winding up---" but it should be clarified. The last group of samples to be assayed were sent via Express to Hawley & Hawley in Douglas, Arizona on October 1, 1952.

Very truly yours,

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent

cc: Potter and Sims
Joplin, Mo.

FILE COPY
SURNAME:

Chapman
Selfridge

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

SEP 26 1952

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

Re: Docket No. DMEA 1387 - Tungsten
Potter and Sims
Ortiz Mine Grant
Santa Fe County, New Mexico
Exploration Contract No. Idm-3110

Dear Mr. King:

We are enclosing the original and five copies of a termination agreement on the above-noted contract with modifications to provide for the payment of increased costs due to the extension of time. This agreement is in lieu of Amendment No. 3 submitted by your office.

If the terms and conditions of this agreement are satisfactory to the Operator, all six copies should be signed by the Operators or their duly authorized agent. The usual distribution shall be made of the signed agreement.

Sincerely yours,

Ernest Wm. Ellis

ACTING Chairman, Operating Committee

J.H. 9-29-52

Enclosures

TLChapman'lm
9/25/52

Approved:

C. H. Johnson
Member, Bureau of Mines

A. R. Kinkel, Jr.
Member, Geological Survey

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

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR 140
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

September 24, 1952

Memorandum

To: G. C. Selfridge

From: J. L. Hofflund

Subject: Amendment No. 3 to Contract Idm-E310 - Docket No. DMEA-1387 - Potter and Sims

In lieu of the proposed letter to Mr. King enclosing Amendment #3, I suggest that you forward the enclosed termination agreement which has been modified to provide for the payment of certain increased costs which you intended to cover in the amendment.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

AEKane/ema
cc: Mails & Files
A. E. Kane
J. L. Hofflund
Chron.

G. C. Selfridge, Rm. 3538, Ext. 5284

FILE COPY
SURNAME:

Interior Department

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

Defense Minerals Exploration Administration

Selfridge

ST NIGHT WIRE

SEP 18 1952

WALTER R. STOMS
MINING DIVISION, REGION IV
U. S. BUREAU OF MINES
P. O. BOX 4097, UNIVERSITY STATION
TUCSON, ARIZONA

RE: DOCKET NO. DMA 1387, POTTER AND SIMS, CONTRACT NO. IDM-E310.

INFORMATION TELEPHONED BY W. H. KING CONCERNING DRILLING RESULTS UNDER CONTRACT IDM-E310 SUGGESTS THAT PROJECT BE TERMINATED.

C. O. Mittendorf (for) 9-18-52

C. O. MITTENDORF
ADMINISTRATOR, DMEA

Copy to: Docket
Admn. Reading File
G. C. Selfridge
Audits
Confirmation Copy

FILE COPY
SURNAME:

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION
C. C. Selfridge
5284 2538
Selfridge

September 18, 1952

W. N. King, U. S. Bureau of Mines, 224 New Customhouse Bldg., Denver, Colo.

Docket No. DMA 1387, Tetter and Sims

Have telegram had Storms that drilling results on subject contract Idm-8310 telephoned by you suggest that the project be terminated. Submitted Amendment No. 3 will be forwarded this week.

C. O. Mittendorf (fw)
C. O. Mittendorf
Administrator, DMEA

cc
9-23

GCSelfridge:ls
9/18/52

Copy to: Docket
Admn. Read. File
Audits
G. C. Selfridge

SENT
J.D.
SEP 18 1952
Clerical Service Section

W H King, phoned from Denver 9/17/52

King advised with respect to Cortez Arms - 310. Tucson office had informed him as follows:

Hole No. 1 - Blank

2 - Scattered scheelite. Est. @ 1.2# per ton (WO_3)

3 - 52 ft. of 1.4# per ton (WO_3)

4 - 155 ft. of 1.4# per ton (WO_3)

5 - N3 - 212 ft. - Some scheelite

6 - 304 ft. - Moderately scheelite. No assays from 118 ft. to 172 ft.

7 Will be completed Friday

Send Johnson at Tucson a telegram (no telotype) of decision as to 2nd phase information & fixing as that P&S buying & developing low grade gold mine. Planned amending contract & general providing for disposition above pell. mag. & telegram to King as to decision.

FILE COPY 400
SURNAME:

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

Administrator, DMEA

Sept. 16, 1952

Chapman
Selfridge

Iron and Ferro-Alloy Division, DMEA

Amendment No. 3 to Contract Idm-E310
Docket No. DMEA 1387 - Tungsten
Potter and Sims
Cunningham Hill Area, Ortiz Grant
Santa Fe County, New Mexico

Amendment No. 3 of Contract Idm-E310 has been received in this office from the Executive Officer, Field Team, Region IV, for consideration.

This amendment, to be effective August 1, 1952, voids Amendments No. 1 and No. 2 and makes the following changes in Exhibit "A" of the above contract:

1. In Stage I, the time element is changed from 3 months to 5 months. In Stage II, the time element is changed from 3 months to 4 months in the time allotted to supervisor, sampler, sustenance for supervisor and office rental.

2. The $4,000.00 originally allotted to road and trail work is included in the totals of Stages I and II.

3. The increases in costs, due to the increase in time, are equalized by monies deducted from funds allotted to analytical work.

4. The total amount of work to be done and allotted funds remain the same.

This Division concurs in the amendment .

George C. Selfridge

TLChapman'lm
9/16/52

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

cc: Admn. Reading File
Docket
G. C. Selfridge
T. L/ Chapman

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

224 New Customhouse
Denver 2, Colorado

September 4, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Amendment to Contract Idm-E310, DMEA Docket 1387 (Tungsten)
Potter and Sims, Santa Fe County, New Mexico

Reference is made to our memorandum dated July 17, 1952, and your reply dated July 29, 1952, pertaining to the subject matter.

Enclosed is the following material relative to extending the time for completion of work under Stage I:

1 - Three copies of Request from the Operator.
2 - Three copies of Recommendation from Chief, Arizona-New Mexico Branch.
3 - Six copies of proposed Amendment No. 3 which we have prepared for your consideration.

Other material pertaining to the amendment was submitted with our memorandum of July 17, 1952.

To extend the time for completion of work under Stage I involves major changes in the estimated costs on page 3, 4, 5 and 6 of the original Exhibit "A". Therefore, to make the Exhibit more comprehensive and to facilitate administration and audit, and to correct deficiencies in the original Exhibit we have rewritten and incorporated a major portion of the Exhibit in the proposed Amendment No. 3.

Exhibit "A" as amended by Amendment No. 3 will not present the difficulties of the original Exhibit, should it become necessary or desireable to make changes in the future to either Stage I or Stage II.

Prompt consideration of the matter will be appreciated.

W. H. King
W. H. King

Copy retained 400

9-8-52

MINING DIVISION
REGION IV

August 15, 1952

Memorandum

To : W. H. King, Denver, Colorado

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

Subject : Amendment, DMA Docket 1387X, Contract Idm-E 310, Potter & Sims.

Enclosed are original and five copies (four copies were made in this office as Griswold sent only the original and one copy) of a request from G. R. Griswold, agent for Potter and Sims, for an amendment to Contract Idm-E 310 to extend the time limit for Stage I from three to four months.

Although road building started on time, the drill contractor was delayed about 30 days. As Stage I provides that road building and drilling shall be completed within three months, only two months remain for the drilling phase.

If it is possible to amend the contract to extend the time for Stage I from three to four months, I recommend that it be so amended. This time extension would be beneficial to the Government as well as the operator as it would allow the full three months for drilling with more chance of discovering ore.

Walter R. Storms

Walter R. Storms

CC: W. H. King (5)
DMEA-1387X
DF

WRStorms:als

August 12, 1952

Mr. W. R. Storms
United States Bureau of Mines
P.O. Box 4097, University Station
Tucson, Arizona

Re: Contract Idm-E-310
DMEA Docket 1387

Dear Mr. Storms:

Reference is made to Contract Idm-E-310, Time Schedule: 3 months, page 1, Exhibit A, Description of the Work and to those items marked with an asterisk indicating allowable maximums, on pages 3,4 and 5.

It is requested that the Time Schedule be extended to permit the completion of Stage I of subject contract. This extension of time to be accomplished without exceeding the total estimated cost of Stage I.

Work was started June 1, 1952 on subject contract and although it was planned to do the necessary road and trail building concurrently with the drilling, we were unable to get the drilling contractor on the project until July 7, 1952.

It is respectfully suggested that the operations from June 1, through July 2, at a total cost of $2,263.79 be charged against the $4,000. set up for road and trail building and that subsequent operations be charged against the Total cost, Stage I, exclusive of road construction in the sum of $36,720.

As of this date, 1314 feet of BX core drilling has been completed out of an indicated total of 3,400 feet, or 36% completion. Barring unforseen delays, Stage I should be completed by September 30, 1952.

Very truly yours,

POTTER AND GIBB

G.R. Griswold

W. R. Griswold, Agent

cc: Potter & Gibb
Joplin, Missouri

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

224 New Customhouse
Denver 2, Colorado

August 1, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Form MF-104, DMA Docket 1387X, Contract Idm-E310 (Tungsten), Potter and Sims, Ortiz Mine Grant, Santa Fe County, New Mexico

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the month of June, 1952, pertaining to DMA Docket 1387X, Contract Idm-E310 (Tungsten), Potter and Sims, Ortiz Mine Grant, Santa Fe County, New Mexico.

W. H. King

W. H. King

Enclosures

AUG 7 1952

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

224 New Customhouse
Denver 2, Colorado

July 29, 1952

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: Amendment No. 2, Contract Idm-E-310, Docket DMEA 1387, Potter and Sims (Tungsten)

Enclosed are the original and two copies of Amendment No. 2 to Contract Idm-E-310. Copies of this amendment have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

Also enclosed are three copies of a memorandum from John H. Soule', Mining Engineer, Bureau of Mines, recommending this amendment and three copies of a letter from Mr. G. R. Griswold requesting the amendment.

W. H. King

W. H. King

Enclosures

RECEIVED
AUG 6 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 1 1952

WNC

Mail < File

400-110
FILE COPY
SURNAME:

FE Johnson

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

JUL 29 1952

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

Re: Amendments
Docket No. DMA-1387 (Tungsten)
Potter and Sims - Ortiz Mine Grant
Santa Fe County, N. M.
Exploration Contract No. Idm-E310

Dear Mr. King:

This is to acknowledge your letter of July 17, 1952, concerning amendments and comments relating to the subject contract.

The amount needed for compensation insurance and payroll taxes can be taken from any of the five items that are not starred under "Miscellaneous". Theoretically this can be done without amendment for items that are a necessary expense to the contract. However, it might be best to cover the sum with an amendment to avoid possible auditing troubles in the future, since these items do not specifically appear in Exhibit "A".

At the present time we believe it best not to rewrite Exhibit "A". The engineers calculated that the drilling could be done in less than six months and the Operator should make every attempt to do so. If this is impossible and more time and/or money is required for either stage, we suggest that you send us, for review by the Legal Division, a proposed amendment covering the necessary amounts.

In those cases such as supervision, both the unit and the total are maxima under the contract and, regardless of starring, could not be changed. Do the compensation laws of New Mexico require that the total amount of supervision on the payroll be subject to tax or is there a limit on earnings such as Social Security has?

APPROVED:

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

T. P. Thayer (JHB)
Member, Geological Survey

Sincerely yours,

(signed) FRANK E. JOHNSON

(JHB)

Chairman, Operating Committee

J.N. 7-29-52

GCSelfridge/FEJohnson/ls/bh 7/28/52
cc to: Docket - Admr's. Reading File
Operating Committee - Region IV
Messrs. Thayer - Hedges - Lemmon - Geehan - FEJohnson

FILE COPY
SURNAME:

Selfridge
Johnson

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

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

Re: Amendments
Docket No. DMA 1387 - Tungsten
Potter and Sims
Ortiz Mine Grant
Santa Fe County, New Mexico
Contract No. Idm-E-310

Dear Mr. King:

This is to acknowledge your letter of July 17 concerning amendments and comments relating to the subject contract.

The amount needed for compensation insurance and payroll taxes can be taken from any of the five items that are not starred under "Miscellaneous." Theoretically this can be done without amendment for items that are a necessary expense to the contract. However, it might be best to cover the sum with an amendment to avoid possible auditing troubles in the future.

At the present time we believe it best not to rewrite exhibit "A". The engineers calculated that the drilling could be done in less than six months and the Operator should make every attempt to do so. If this is impossible and more time and/or money is required for either stage, we suggest that you send us, for review by the Legal Division, a proposed amendment covering the necessary amounts.

In those cases such as supervision, both the unit and the total are maxima under the contract and, regardless of starring, could not be changed. Do the compensation laws of New Mexico require that the total amount of supervision on the payroll be subject to tax or is there a limit on earnings such as Social Security has?

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

Approved:

J. H. Hedges

Member, Bureau of Mines

T. P. Thayer

Member, Geological Survey

GCSelfridge:ls 7/28/52

cc: Docket
Admn. Read. File
Field Team, Reg. 4
G. C. Selfridge
Operating Committee
D. M. Lemmon, USGS
R. W. Geehan, USBM

Rewritten

Note

July 28/52

From AEKane AEKane

To FEJohnson,Chairman

Re: DMA 1387 Potter and Sims

[Added]

I have surnamed this letter. However, I would suggest adding after the end of the second paragraph the following:

"since these items do not ~~appearxxin~~ specifically appear in Exhibit A".

The reason for the suggestion is that the above is not clear if some one has not read the incoming letter. Someone ~~xxx~~ might later pick up this letter without having read the incoming and conclude that an amendment is necessary everytime that funds are borrowed from one unstarred item for use of another unstarred item. This might establish a precedent which we do not want established as it would cause a lot of unnecessary work. The added provision will make it clear that an amendment is desirable from an auditing ~~xinpoin~~ viewpoint, only when funds are desired for an item overlooked and omitted from the Exhibit,and which can not be easily included under any general ~~xxx~~ item such as "Contingencies".

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUL 21 1952

224 New Customhouse
Denver 2, Colorado

July 17, 1952

7/23/52

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Amendments to DMEA Docket 1387, Contract Idm-E-310, (Tungsten), Potter and Sims, Santa Fe County, New Mexico

Enclosed in triplicate is the following matter pertaining to a request for an amendment to Contract Idm-E-310:

1. Letter requesting the amendment from G. R. Griswold, Agent for Potter and Sims, dated June 5, 1952.

2. Copies of memorandum from Walter R. Storms, dated July 2, 1952, recommending the amendment.

3. Copies of Amendments Numbers 1 and 2.

The requested amendment is involved with stipulated allowable maximums and since such amendments are not within the delegated authority of this office we are forwarding the request for your consideration.

According to the instructions on Form MF-200, the taxes should be incorporated under item "(7) Miscellaneous". However, we find that the item was used to state a part of the operational work. The funds allocated under item (7) are stipulated as an allowable maximum.

Copies of Amendments Numbers 1 and 2, prepared in this office to authorize equipment rental and depreciation, are enclosed for your information in the event it is necessary to revise the exhibit. The equipment authorized is necessary for use in the construction of roads and preparation of drill sites. Amendment No. 2 is in process of being signed by the operator, but it can be voided by this office if necessary. Both amendments deal with the work included under item (7).

The completion time of the contract is set for 12 months while Stages I and II are limited to 3 months each by the restriction of allowable maximum of funds for accomplishing the work. In the event it requires more than 3 months to complete either stage it appears that it would be necessary to revise the entire exhibit in order to extend the completion

Copy retained 400

SDS 7-21-52

time. To eliminate that necessity on this contract and others written in a similar manner we believe that only the various basic rates should be indicated as allowable maximums and not the total estimated cost of the item. There would be exceptions where it is desirable that the Government participate only to a certain extent in the costs incurred.

We interpret the regulations governing Government participation in DMEA contracts that there is no intent to limit participation in the direct and necessary costs of performing the work, even though the contract does not contain specific reference to such costs. In many instances estimates of costs have not been included through oversight on the part of the applicant, or due to conditions which have changed during the interim between the submission of the application and execution of the contract. When it is desirable to amend contracts to authorize charges which were overlooked, or charges resulting from changed conditions, it is in many instances made difficult and involves a major revision by reason of the manner in which the contract is written. The restriction in time for completion of Stages I and II of the subject contract illustrates this condition. Since it will be necessary or desirable to amend a majority of the contracts, to some extent, we suggest that they be written accordingly.

W. H. King

W. H. King

Enclosures

POTTER AND SIMS
1500 Las Lomas Road
Albuquerque, New Mexico

June 5, 1952

W. H. King, Executive Officer
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

Re: Exploration Project Contract
Idm-E-310, DMEA Docket 1387

Dear Sir:

Reference is made to Form MF-200, subject contract. Under paragraph (7) Article 6 are listed the following allowable costs of the project in which the Government will participate: workmens compensation and employer's liability insurance and payroll taxes.

No provision has been made for these costs in Exhibit "A" Description of the Work in our contract.

It is requested that Contract Idm-E-310 be amended to allow the following costs:

Workmens Compensation Insurance	5.519% of payroll
Employment Security Commission of New Mexico-Unemployment Compensation	2.7 % of payroll
Federal Insurance Contributions Act	1.5 % of payroll

These costs were not included in salaries and wages specified in the original application Form MF-103.

Very truly yours,

POTTER AND SIMS

/s/ G. R. Griswold

G. R. Griswold, Agent

cc: R. W. Storms
Tucson, Arizona

POTTER AND SIMS
Joplin, Missouri

Copy retained 400

Mining Division
Date Rec'd.
JUL 8 - 1952
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

July 2, 1952

Memorandum

Air Mail

To : W. H. King, Acting Chief, Mining Div., Region IV

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

Subject : Proposed amendment for compensation insurance,etc. Docket DMMA-1387, Contract Idm-L310, Potter & Sims Ortiz Mine Grant (Tungsten), Santa Fe County, N. Mex.

As requested in your telephone call of June 20, we have studied the request by G. R. Griswold, Agent for Potter and Sims, for an amendment to cover compensation insurance and payroll taxes as per his letter of June 5 as follows:

Workmen's Compensation Insurance	5.519%
Unemployment Insurance	2.7%
Federal Insurance Contributions Act	1.5%
Total of payroll	9.719%

No provision was made in the contract for these taxes and about the only item that might contribute any money to them is the item under (7) Miscellaneous on page 5 of the contract: "Check analysis for WO_3 by Ledoux & Co. - $850.00". This $850.00 occurs on page 5 under Stage I and also under Stage II.

Under Item 2 on page 3 of the contract under "Labor, Supervision, Consultants", the total is $3,150.00 for Stage I and also for Stage II. The insurance and taxes already mentioned would be 9.719 percent of this amount or $306.15 for each stage.

As these items of workmen's compensation insurance, unemployment insurance, and F.I.C.A. are necessary parts of the contract, I recommend that an amendment be made taking $612.30 from the Ledoux & Co. account as already discussed, and transferring it to a new account under Item 2, - Labor, Supervision, Consultants. This then will allow for the payroll taxes, etc. and probably would not injure the total costs, as $6,900 already has been provided for assaying other than the amount for Ledoux & Co.

Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch

Copy retained 400

CC W. H. King (6)
DMMA-1387
DF

WRStorms:frj

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

224 New Customhouse
Denver 2, Colorado

July 15, 1952

7/24/52

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: Approval of Subcontract under Contract Idm-E310, Docket 1387, Potter and Sims (Tungsten)

Enclosed are the original and two copies of a subcontract between Potter and Sims and Boyles Bros. Drilling Company for performing certain work under Contract Idm-E310.

Also enclosed are the original and two copies of our Approval of this subcontract. Copies of this approval have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files. A copy of the subcontract has been given to the Fiscal Officer, and we have retained a copy for our files.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Bureau of Mines
JUL 21 1952

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

224 New Customhouse
Denver 2, Colorado

June 24, 1952

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: Amendment to Contract Idm-E-310, Docket DMEA 1387, Potter and Sims (Tungsten)

Enclosed are the original and two copies of Amendment No. 1 to Contract Idm-E-310. Copies of this amendment have been given to the Operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 27 1951

SIS 6-27-51

POTTER AND SIMS
1500 Las Lomas Road
Albuquerque, New Mexico

June 5, 1952

W. H. King, Executive Officer
Defense Minerals Administration
224 New Customhouse
Denver 2, Colorado

Re: Exploration Project Contract
Idm-E-310, DMEA Docket 1387

Dear Sir:

Reference is made to Form MF-200, subject contract. Under paragraph (7) Article 6 are listed the following allowable costs of the project in which the Government will participate: workmens compensation and employer's liability insurance and payroll taxes.

No provision has been made for these costs in Exhibit "A" Description of the Work in our contract.

It is requested that Contract Idm-E-310 be amended to allow the following costs:

Workmens Compensation Insurance	5.519% of payroll
Employment Security Commission of New Mexico-Unemployment Compensation	2.7 % of payroll
Federal Insurance Contributions Act	1.5 % of payroll

These costs were not included in salaries and wages specified in the original application Form MF-103.

Very truly yours,

POTTER AND SIMS

/s/ G. R. Griswold

G. R. Griswold, Agent

cc: R. W. Storms
Tucson, Arizona

POTTER AND SIMS
Joplin, Missouri

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

224 New Customhouse
Denver 2, Colorado

May 28, 1952

REGISTERED MAIL

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: Contract Idm-E-310, Docket DMEA 1387, Potter and Sims (Tungsten)

Enclosed are the original and three copies of Contract Idm-E-310. All copies have been signed by the Acting Administrator, DMEA, and by Messrs. Potter and Sims.

A copy of this contract has been given to the operator and a copy has been retained for our files.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 2 1952

FILE COPY
SURNAME:

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

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

Re: Docket No. DMEA 1387X - Tungsten
Potter and Sims
Ortiz Mine Grant
Santa Fe County, New Mexico

Dear Mr. East:

We are enclosing the original and five copies of the above-referenced exploration contract signed by this office for the Government, together with Exhibit "A" (6 pages), a subordination agreement, and 2 maps.

If the terms and conditions of this contract are satisfactory to you and the Operator, all six copies should be signed by a duly authorized official of the company. The Operator's copy is to be given to the Operator, the Field Team's copy retained by your office, and the original and three copies returned to this office.

If any part of this contract does not have either your approval or that of the Operator and cannot be amended within your delegated authority, then the original and all copies of the contract are to be returned to this office, together with the proposed changes for consideration.

Please note that the drilling as now provided for in the contract differs in part from that originally proposed. It is possible that some difficulty may be encountered in reaching the approximate positions of certain of the drill sites. This may be overcome by skidding the drill into position and piping water from a distance. If any of the sites are inaccessible because of cliffs, the sites may be moved.

FILE COPY
SURNAME:

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

No item for sampling the surface or the underground workings was provided for in the contract because the near-surface tonnages represented by the sampling would be very small compared to the tonnages represented by the drilling.

There has been some discussion as to whether or not the core should be split and then analyzed or analyzed without splitting. It would appear that analyzing the complete core might lead to more representative values because of the low tenor of the tungsten-bearing material. This question can be decided in the field after discussion with the applicants.

Sincerely yours,

(signed) FRANK E. JOHNSON (GB)

Chairman, Operating Committee
Defense Minerals Exploration
Administration

Enclosures

Approved:

E. H. Hedges (GB)
Member, Bureau of Mines

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

GCSelfridge:ls
4/30/52

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

FILE COPY
SURNAME:

140

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

April 28, 1952

Memorandum M. S. in R. v R.

To: G. C. Selfridge, Chief
Iron and Ferro Alloys Division

From: J. L. Hofflund
Chief Counsel

Subject: Potter & Sims - Exploration Project Contract-
Docket No. DMEA-1387

The subject contract is in satisfactory legal form for execution, subject to the attachment of the maps and Figures 1 and 3 referred to in the contract.

Your file is returned herewith.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

Attachment

HCRubin/ema
cc: Mails & Files
J. L. Hofflund
H. C. Rubin
Chron.

FILE COPY
SURNAME:

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

Mr. John L. Hofflund, Chief Counsel, DMEA

April 11, 1952

Iron and Ferro-Alloy Division, DMEA

Review and preparation of Exploration Project Contract:
Docket No. DMEA 1387 - Tungsten
Potter and Sims
Cunningham Hill Tungsten Deposit
Santa Fe County, New Mexico

Transmitted herewith is the subject docket and a rough draft of a proposed exploration project contract. Under Article 2 we have given two descriptions of the tract of land involved in the exploration. From a legal standpoint you will probably find that one is better than the other.

George C. Selfridge

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

Attachments

GCSelfridge:ls

cc: Docket
Admn. Reading File
G. C. Selfridge

400

FILE COPY
SURNAME:

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

Selfridge
K Johnson

APR 7 1952

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

Re: Docket No. DMEA 1387X - Tungsten
Potter and Sims
Cunningham Hill Tungsten Deposit
Santa Fe County, New Mexico

Dear Mr. East:

This is in reply to your letter of March 25, 1952, in which you request clarification of DMEA's exploration policy with regard to marginal or submarginal mineral deposits.

In this particular case, the large tonnage of mineralized ground and possible over-all large WO_3 content were the determining factors for favorable consideration of an exploration program, rather than present day economics. With deposits such as these, one must keep in mind at least the 10-year period that lies immediately ahead with possible increases in prices and advances in metallurgy. Small, very low grade deposits of limited tonnage would not and should not receive this consideration. Nor should large deposits of low grade mineralization be considered when one is reasonably sure that there is little or no hope of metallurgical advances being made within the next decade or so. We believe that it is also of national interest to acquire additional information, especially at depth, concerning the over-all size and grade of the tungsten deposit on Cunningham Hill.

Sincerely yours,

E. O. Mittendorf (for) 4/7

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge:ls
4/3/52

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

838?

POTTER AND SIMS

GEO. W. POTTER

P. O. BOX 229

DEWEY SIMS

JOPLIN, MISSOURI

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 31 1952

March 28, 1952

C. O. Mittendorf, Acting Administrator,
Defense Minerals Exploration Administration,
United States Department of the Interior,
Washington 25, D. C.

Re: Docket No. DMEA 1387X - Tungsten
Cunningham Hill Tungsten Deposit
Santa Fe County, New Mexico

Dear Sir:

Reference is made to your letter dated March 20, 1952 suggesting an alternate program divided into two stages. This program meets with our approval.

The following comments are submitted concerning the location of the first seven holes as outlined in your letter. These suggestions are of minor importance and the holes can be drilled where you recommend.

OK No. 1 No comment.

OK No. 2 Moving this hole 50 feet south of our proposed hole #16 will necessitate blasting out about 75 feet of new road, whereas the location of hole #16 was to be drilled just off the present road.

OK No. 3 No comment.

No. 4 The proposed change for this hole will necessitate several hundred feet of blasting on a 40% side slope.

OK No. 5 This hole should be moved 50 feet south so as to get off the Dolores Tunnel dump. downhill or alternate

OK No. 6 No comment.

No. 7 This location is on a 60% slope and will require some rock work to move in the drill.

approved
+7A

2 - C. O. Mittendorf March 28, 1952

The following information is furnished as requested:

1. The fair market value of the 4 wheel drive truck is thought to be $500.00, and the fair market value of the Plymouth car is thought to be $1,500.00. The 4 wheel drive truck will be used to haul water to the drill rigs in order to obtain a more favorable drilling contract. The $100.00 per month charge for these two pieces of transportation was based on rental costs for such equipment.

2. The original application Form MF-103 included under Par. 23 (g) $300.00 per month rent on transportation equipment, office space and living quarters. This was broken down as follows: $100.00 rent on 4 wheel drive truck; $100.00 rent on Plymouth car; $50.00 rent on office space and living quarters at Los Cerrillos, New Mexico, and $50.00 for meals away from home for the manager. The field team suggested that the $50.00 for meals away from home should be called travel expense.

3. None of the exceptions mentioned in the lease lie within the subject area.

Enclosed find six copies of completed Landlord's Subordination Agreement.

Very truly yours,

POTTER and SIMS

By Partner

DSS:mk

Encs.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION IV

OFFICE OF
REGIONAL DIRECTOR

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

Confidential

March 25, 1952

Memorandum

To: C. O. Mittendorf

From: Regional Director, Region IV

Subject: Docket No. DMEA 1387X - Tungsten Cunningham Hill Tungsten Deposit, Santa Fe County, New Mexico

We have received a copy of your letter addressed to Potter and Sims, P. O. Box 229, Joplin, Missouri, regarding Docket DMEA 1387X. The general review of your letter indicates that you propose to issue this company a contract in two stages. It is possible that you did not have an opportunity to read the letter prepared by the Field Team regarding this application, and we are attaching to this memorandum a copy of this review with a request that you read it carefully.

Your attention is directed in particular to the last paragraph on the first page and the last paragraph on the second page, both of which are marked.

If a contract is issued for this docket, are we to assume that a large tonnage of ore of such low grade that it cannot be treated by present milling methods is to be considered as qualifying for a DMEA loan? I will appreciate your answer to this question for our future guidance.

J. H. East, Jr.

J. H. East, Jr.

Enclosure

FILE COPY
SURNAME:

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

MAR 20 1952

Potter and Sims
P.O. Box 229
Joplin, Missouri

Re: Docket No. DMMA 1387X - Tungsten
Cunningham Hill Tungsten Deposit
Santa Fe County, New Mexico

Dear Sirs:

We have now reviewed your application for an exploration loan and other data recently made available to us in Washington.

A study of all the information suggests an alternate program, a part of which at least was discussed with your agent in the field. This consists of dividing the program into two stages: the first to include some road work and the drilling of seven BX diamond drill holes aggregating not more than 4,000 feet; and the second to include the drilling of an additional seven holes not to exceed an aggregate length of 4,000 feet.

In the first stage, it is suggested that three of the holes be drilled to a depth of only 300 feet unless tungsten mineralization is such that further drilling to depth is definitely warranted. The holes would be drilled along a center line of the brecciated area and would be spotted as follows:

No. 1. Vicinity of your proposed hole #14, ± 565 feet deep.

No. 2. Fifty feet south of your proposed hole #16, ± 300 feet deep.

No. 3. Two hundred and fifty feet southwest of your proposed hole #7, in narrow part of small intensely brecciated area, ± 570 feet deep.

No. 4. One hundred fifty feet N 30° W of your proposed hole #3, ± 300 feet deep.

No. 5. Midway between your proposed hole #8 and old shaft drill hole #1, ± 650 feet deep. This is in gold-bearing area.

No. 6. Near north end of North drift on east side of intensely brecciated area, ± 300 feet deep.

No. 7. One hundred feet south of your proposed hole #9 within the intensely brecciated gold-bearing area, ± 715 feet deep.

Stage II would be undertaken only if warranted by the results obtained in Stage I. The location and depth of the holes would be determined by the results of Stage I.

The proposed alternate program will cost between $75,000 and $80,000 as drilling costs are figured at $7.00 per foot maximum instead of $4.00 as originally proposed.

If the above alternate program meets with your approval or you have other suggestions, please let us know. We would also appreciate the following information:

1. What are the fair market values of the 4-wheel drive truck and the Plymouth car?

2. The field team included an item of $50 a month for travelling expense in addition to $190.00 a month for travel by the Plymouth car. Please explain.

3. Do any of the exceptions mentioned in the lease lie within the subject area?

Since control of the property is held by lease, it is necessary that the application be accompanied by a Landlord's Subordination Agreement. If you wish to proceed with the application, please return six signed copies of the enclosed agreement to us.

Sincerely yours,

C. O. Mittendorf (fw) CC 3/20

Acting Administrator
Defense Minerals Exploration
Administration

GCSelfridge:lm
3/18/52

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

IN REPLY REFER TO:

G-MD-DML

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

March 4, 1952

Memorandum

To: George C. Selfridge, DMEA

From: D. M. Lemmon, U.S.G.S.

Subject: Field report DMA 1387-X Tungsten
Cunningham Hill Tungsten Deposit
Ortiz Mine Grant
Santa Fe County, New Mexico
(Exploration application of Potter and Sims)

The Field Team report, submitted from the Denver Regional Office on February 14, 1952, carefully presents available data on the deposit and states that the target of an exploration program would be 50,000,000 tons containing 1.0 to 1.5 pounds of WO_3 per ton. The metallurgy of tungsten recovery from this material has not been worked out, and it appears that the material will not be ore at a price of $65 per unit of WO_3 although it might become ore at a price of $100 to $120 per unit.

The Field Team leaves the question open as to whether this grade of material should be explored, and requests that this issue be decided in Washington. It appears that successful completion of exploration would probably not result in a discovery that could be certified by DMEA, because the material sought is not ore today.

It appears to me to be in the National interest to do some exploration on the property at a cost not to exceed $80,000 to determine if the anticipated amount of submarginal mineralization is actually present. The principal objection to approval of the work is doubt whether the sampling and assay procedures will give significant information about content of WO_3. The determination of 0.05 percent of WO_3 (1 pound to the ton) is difficult, for the degree of accuracy of tungsten analyses may range from ± 0.01 to ± 0.05. The proposed sampling procedure requires further investigation to determine if a split BX core will give a representative sample of the deposit.

Recommendation: It is recommended that DMEA enter into a project to drill a minimum of holes from the surface as stage one. These holes should be evenly distributed through the clastic breccia, and all should

One copy retained 1+7A files

be drilled before abandoning the project. As a compromise between the proposals of the applicant and the Field Team, it is suggested that the drilling be carried to a depth of 300 feet as proposed by the Field Team, and that alternate holes be extended to the applicant's objective at altitude 6550 feet, provided that mineralization is fairly continuous in the holes. The total footage in stage 1 is not over 4000 feet. Plans for additional drilling, in stage 2, can await results from stage 1.

This project requires careful geologic mapping and interpretation, careful sampling and assaying, and extensive metallurgical research.

Dwight M. Lemmon

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

224 New Customhouse
Denver 2, Colorado

February 14, 1952

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMA 1367X, Cunningham Hill Tungsten Deposit, Ortiz Mine Grant, Santa Fe County, New Mexico - Potter and Sims, applicant.

Enclosed are the original and two copies of the final report on Docket DMA-1367X, Potter and Sims, applicant.

Also enclosed is the Field Team evaluation and review of the report.

The brochure is enclosed.

We suggest that the report be reviewed by the Tungsten Committee and if in their opinion, a large body of very low grade ore merits exploration and if the committee report is affirmative, we recommend the following:

1. A shallow drilling program be authorized.

2. The surface outcrop be sampled and mapped.

3. A metallurgical sample of typical ore be taken for testing by the Bureau of Mines to determine if a suitable recovery can be obtained.

J. H. East, Jr.

for A. H. Koschmann

Enc.

ON-SITE EXAM REP.

REVIEW OF DMA DOCKET 13871

BY

DMEA FIELD TEAM, REGION IV

Subject: Cunningham Hill Tungsten Deposit, Ortiz Mine Grant, Santa Fe County, New Mexico. Potter and Sims, applicant - DMA-13871

The above application is for an exploration project estimated to cost $58,910.00. The proposed work consists of contract diamond drilling or churn drilling 14 holes totalling 7,882 feet. All holes would bottom at an elevation of 6,550 feet above sea level. The applicant believes there is a possibility of discovering a more or less horizontal 45-foot bed of scheelite-bearing material covered by 375 feet of overburden in the Cunningham Hill breccia. This is based on assays of material obtained in two churn drill holes. Assays from hole No. 1 from a depth of 375 feet to 440 feet averaged 3.06 pounds of WO_3 per ton. Assay of material from Hole No. 2 from a depth of 375 feet to 450 feet averaged 1.8 pounds of WO_3 per ton. The applicant proposes to mine this material by the same underground open-stope mining method that is used successfully in lead-zinc operations in Missouri. The scheelite is to be concentrated by flotation, and the concentrate treated in a "digester." Mining costs are estimated by the applicant at $2.00 per ton, milling costs at $0.50 per ton, and chemical treatment at $30.00 per ton of concentrate.

Geological evidence indicates that the Cunningham Hill breccia contains scheelite and there may be areas of higher grade concentrations at various elevations. The underground open-stope mining method would not be feasible in such a deposit. If this mining method should be attempted, the $2.00 cost estimated by the applicant is too low. This deposit is more likely to have merit as an open-pit operation. Hole No. 1 is mineralized from 85 feet to 440 feet, and Hole No. 2 is mineralized from 20 feet to 450 feet. The average assay value for the entire length of mineralization of both holes is 1.3 pounds WO_3 per ton. This average and assays obtained from surface outcrops indicate the advisability of considering an open-pit operation.

Assays were run by Hawley and Hawley of Douglas, Arizona, and Crissman and Nickles of Salt Lake City and Albuquerque. Check samples were run by their assayers, and the results were reasonably close.

A flotation test made by the American Cyanamid Company, produced a 20 percent WO_3 concentrate with a 90% extraction. This test is not conclusive. The deposit contains an iron-bearing carbonate that may cause trouble. The cost of $0.50 per ton for milling estimated by the applicant is too low. A cost of $1.25 per ton would be more nearly correct.

It is significant that one bulk sample of oxide ore and two bulk samples of sulfide ore furnished by the applicant for metallurgical testing by the Bureau of Mines in Tucson, contained so little tungsten that flotation tests were not warranted.

The applicant stated that owing to the occurrence of scheelite in the cementing material of the breccia, it might be possible to develop a crushing, abrasive grinding, and screening process whereby the bulk of the scheelite would be in the finer sizes and the coarse sizes could be discarded without further treatment, thus decreasing the milling cost per ton of ore mined. The examining geologist stated that scheelite exists in veinlets and as disseminated crystals through the rock in zones several inches wide, adjacent to these veinlets. This would prohibit the successful use of the suggested grinding and screening technique.

The formations on the map accompanying the engineering report differ from those on the map accompanying the geologic report. The map accompanying the engineering report was adapted from a map furnished by the applicant and is intended to illustrate the proposed work. The geology on the map accompanying the geologic report is adapted as correct.

The applicant and the examining team mutually agreed that diamond drilling would be preferable to churn drilling.

A revised exploration program as suggested by the geologist may delineate a block of 50,000,000 tons of material containing approximately 1 to 1.5 pounds of WO_3 per ton. At present prices, this would be valued at $3.15 to $4.73 per ton if in the form of 60% concentrate. The mining, milling and chemical treatment would cost $3.50 per ton. The metallurgy is not solved, but when it is, it is doubtful if the extraction would exceed 80%.

It is recommended that the tungsten committee review our analysis carefully, and if in their opinion a large tonnage of this low grade material will be of future value, a revised exploration program should be requested, which will include the testing of their proposed milling process by the Bureau of Mines or some concern acceptable to the D.M.E.A. The exploration program should include sampling of surface exposures and drilling in stages.

J. H. East, Jr.

for A. H. Koschmann

1.a
2-18-52

Mining Division
Region IV

February 14, 1952

Memorandum

To: Field Team, DMEA, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMA-1387K, Cunningham Hill Tungsten Deposit, Cerro Mine Grant, Santa Fe County, New Mexico, Tabber and Sinn, applicants

Enclosed are the original and seven copies of the final engineering report, and the original and seven copies of the Summary, Conclusions and Recommendations on the above application.

We do not concur with the conclusion of the examining engineers that the application be approved. The metallurgy should be studied, and if a satisfactory recovery can be obtained, a revised drilling program should be submitted.

W. H. King
W. H. King

Enclosures

Defense Minerals Exploration Administration
FEB 1 6 1952

Reviewed by
DMEA OPERATING COMMITTEE
2-20-52
(date) (RL)

Mining Division
Date Rec'd.

OCT 15 1951

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

October 12, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

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

Subject : Final Report, DMA Docket 1357A, Cunningham Hill Tungsten Area, Ortiz Mine Grant, Santa Fe County, N. Mex.

Enclosed are original and 7 copies of the section on Summary, Conclusions and Recommendations by M. J. Elsing, J. H. Soule' and B. C. Brown of the Bureau of Mines, and A. F. Shride and J. N. Faick of the Geological Survey; and the section on Engineering by Elsing, Soule' and Brown of the Bureau of Mines. A separate report on Geology will be submitted by the Geological Survey

This report has my approval.

Brochure will be sent in by U.S.G.S.

Walter N. Storms

CC P. T. Allsman (7)
C. A. Anderson
DMA-1357A
DF

WNStorms:frj

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

200 New Customhouse
Denver 2, Colorado

January 10, 1951

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 13873, Cunningham Hill Tungsten Area, Ortiz Mine Grant, Santa Fe County, New Mexico

Attached are the original and 7 copies of the above report by A. F. Shride of the U. S. Geological Survey covering subject docket.

Shride's geologic report and Elsing's engineering report differ (1) on the advisability of exploring the subject area, and (2) on an exploration program should this project be approved.

This is a very low-grade tungsten ore body and cannot be worked at present prices. Whether to explore it as a possible reserve in case of dire emergency should be decided by the commodity experts in Washington familiar with the over-all national picture.

If Washington decides in the affirmative, then I favor Shride's "short-hole" program as more realistic than the "long-hole" program of the applicant. This project undoubtedly would be an open-pit operation and 300 feet of depth is certainly great enough to sustain such an operation for a long time (if it can be sustained at all). It is better to know more of the horizontal distribution and the grade to that depth than distribution and grade below 300 feet which would not be reached for several years after the open-pit was in operation.

I recommend that the final decision, whether or not to approve this loan application, be left to Washington.

The brochure is enclosed.

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

Enclosures (8)
and brochure

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

November 23, 1951

Memorandum

To: Field Team, Region IV, Denver, Colorado
Through: Mr. A. E. Koechmann

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

Subject: Geologic Report, DMA 1387X, Cunningham Hill Tungsten Area, Ortiz Mine Grant, Santa Fe County, New Mexico

Enclosed are the original and 7 copies of the above report by A. F. Shride of the Geological Survey.

In general Mr. Elaing's engineering report and this report agree. However, because certain descriptive details differ, and our philosophies differ somewhat our recommendations on details of an exploration program and the desirability of an exploration program are not quite the same. Therefore it is hoped by the writer that the two reports will be compared. Some disagreement on a proposal of the subject type is probably healthy.

The brochure is enclosed.

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

Enclosures 9

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA-1457a, Cunningham Hill Tungsten Area, Ortiz Mine Grant

Santa Fe County, New Mexico

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October 1951

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

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The Coordinating Committee of the Defense Minerals Administration requested the Field Team, Region IV, to examine and report on the Ortiz Mine Grant, Santa Fe County, N. Mex. Such an examination was made by W. J. Olsing, John H. Soule', and B. C. Brown of the U. S. Bureau of Mines, and A. F. Shride and John Faick of the U. S. Geological Survey. The Docket is known as DMA-1387A - Tungsten.

Potter and Sims made application for an exploration loan for the purpose of diamond drilling a part of Cunningham Hill in order to determine the possibilities for the production of tungsten. They based their request upon the surface occurrence of scheelite over some 40 acres of Cunningham Hill and the results obtained from two churn drill holes which they drilled in the early part of 1951.

The examiners visited the property with the applicants' engineer, have studied various reports and other data, and have arrived at the following conclusions:

1. Cunningham Hill is a great mass of brecciated igneous and sedimentary rocks. The Hill is 3,000 feet long and 1,500 feet wide. The area of maximum brecciation covers some 30 acres.

2. The Hill is the source of some $2,000,000 in gold produced from placer deposits in nearby valleys intermittently worked for 100 years or more. For some 50 years various companies and individuals, including

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1/ Consulting Mining Engineer, U. S. Bureau of Mines
2/ Mining Engineer, U. S. Bureau of Mines
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Thomas A. Edison, have explored the hill with shallow tunnels, pits and trenches. The applicants' engineer believes that in one area, approximately 550 feet by 600 feet in size, there are 2,450,000 tons of gold ore that average $2.77 per ton.

3. In 1947 the applicants found that scheelite in small quantities occurred in many places scattered over an area of some 40 acres. In early 1951 the applicants put down a churn drill hole for water. The cuttings were observed under ultraviolet light and were found to contain scheelite. Hole No. 2 was drilled 150 feet from Hole No. 1 and also contained scheelite. Assays from Hole No. 1 from a depth of 375 feet to 440 feet showed 3.06 pounds of WO_3 per ton. Hole No. 2 from a depth of 375 feet to 450 feet showed 1.8 pounds of WO_3 per ton. The applicants believe that these holes indicate the possibility of a more or less horizontal bed of scheelite ore, 65 feet thick, which might cover 40 acres and contain 9,000,000 tons of ore. They propose to mine this ore by methods that are similar to those used at their successful lead-zinc operations in Missouri.

4. The examiners do not believe that it is likely that a flat bed of scheelite ore occurs in this igneous stock. They believe that there is sufficient evidence to warrant the belief that the whole mass of Cunningham Hill breccia may be found to contain scheelite and that in this mass there may be higher grade concentrations of various sizes and at various elevations. The conclusion drawn is that there is the possibility that the entire breccia may be ore which could be mined in an open pit.

5. With this in mind the examiners asked for and received assays covering the entire length of Holes No. 1 and No. 2. These assays show that 355 feet of hole No. 1 contains 1.26 pounds of WO_3 per ton and that 435 feet of Hole No. 2 contains 1.35 pounds of WO_3 per ton. WO_3 in a 60 percent concentrate is worth 3.25 per pound. The gross value of the material encountered in these holes is worth approximately $4.20 per ton. If 50 percent of the contained scheelite is recovered by concentration the value of the ore will be $2.10 per ton. If net recoverable values are $2.10 per ton a small profit may result from mining and milling 10,000 tons or more per day from an open pit.

6. On the basis of the wide spread surface occurrence of scheelite and the results of churn drilling, it is possible that perhaps 50,000,000 tons of scheelite ore could be indicated by additional drilling. Therefore, Cunningham Hill offers possibilities of a great reserve of scheelite ore. The grade cannot be predicted. It might be profitable at present prices of scheelite. It may be profitable at a price of $5 per pound of WO_3, or it may be so low-grade that production would be at a prohibitive cost. In any event the scheelite content of this deposit should be determined. In a national emergency it would make little difference if WO_3 cost even more than $5.00 per pound.

7. Concentration tests by American Cyanamid have not been discouraging. Preliminary tests indicate that in making a 20 percent WO_3 concentrate a recovery of 90 percent has been obtained. On the basis of data now available it is believed that given millions of tons of ore, satisfactory metallurgical results can be obtained.

8. It is believed that the expenditure of $80,000 should indicate the possibilities of this project. It is suggested that the work be divided into two stages. Stage No. 1 should include 7 diamond drill holes and extensive sampling of surface outcrops, dumps and the shallow surface workings. If results are satisfactory Stage No. 2 would include 7 more holes as requested by the applicants.

9. Potter and Sims are men with great mining experience. They are conducting successful lead-zinc operations in the Missouri lead-zinc district. Operations will be conducted by them with efficiency and economy, and with small overhead costs. Very little equipment need be purchased. Drilling will be done by a contractor.

For the above reasons it is recommended that an exploration project be set up for $80,000 of which the applicants will contribute $20,000 and the Government $60,000.

CUNNINGHAM HILL TUNGSTEN DEPOSIT
ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO
LMA 1387X

Geology

By A. F. Shride
Geologist, U. S. Geological Survey

CUNNINGHAM HILL TUNGSTEN DEPOSIT
ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO
NMA 1387X

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INTRODUCTION

To aid in appraising the geologic potentialities of the Cunningham Hill tungsten deposit, several private geologic reports furnished by the applicant have been reviewed. These reports were prepared because at various times since the 1890's interest has been high in Cunningham Hill as a potential large, low-grade gold prospect. Scheelite was discovered in 1947 after the latest of the private reports had been prepared, and little work has been done to determine the tungsten possibilities. Therefore little information is available on the distribution of tungsten in the mineralized area. The geologic setting for the scheelite is the same as that for the gold, therefore general data collected by previous examiners is valid.

A report prepared in 1938 by V. D. Perry and R. S. Moehlman for the Anaconda Copper Mining Company has been of particular use. The geology shown on figure 3 is modified from a geologic map prepared by these examiners. The known scheelite-bearing outcrops shown on figure 3 are plotted from data furnished by the applicant. From the writer's brief reconnaissance of the area it is obvious that a great many additional scheelite-bearing outcrops could be shown on this map.

The exploration work that has been done for scheelite in the Cunningham Hill area can be summarized as follows. A large part of the area has been inspected, both on the surface and underground, with a mineralight. Some of the scheelite-bearing outcrops have been noted on a map, but apparently no systematic attempt has been made to determine the distribution of the scheelite. Two trenches and the main underground workings have been partially sampled for tungsten content. Two dumps have been sampled. Two churn drill holes, one

440 feet deep and the other 400 feet deep, have been drilled in Las Norias Arroyo (see fig. 3) and part of the cuttings assayed. One 67 foot churn drill hole has been drilled near the Wagon tunnel and the cuttings have been assayed. For all practical purposes, no ore-testing work has been done. This exploration is far from adequate for use in appraising a tungsten deposit which apparently outcrops over an area of 30 acres. Therefore, the following appraisal can be considered only a preliminary attempt to evaluate the potentialities of the Cunningham Hill deposit.

GENERAL GEOLOGY

The Cunningham Hill scheelite deposit is on the east side of the Ortiz Mountains, which in general are composed of Cretaceous (?) sandstones and shales invaded by Tertiary intrusives in the forms of stocks, sills, and dikes. Cunningham Hill is an elongate, northeast-trending hill with a maximum relief of approximately 300 feet above the adjacent canyon bottoms. Over most of the hill Cretaceous (?) quartzites and sandstones crop out. On the south side of the hill volcanics made up of tuff, andesite, and agglomerate are said to crop out over a large area (see fig. 3). Monzonite porphyry, probably part of a stock, intrudes the sandstones and quartzites at the west end and on the northwest side of the Cunningham Hill.

In the vicinity of the scheelite deposit the monzonite porphyry is best termed a monzonite intrusion breccia. Blocks and fragments of monzonite porphyry and materials foreign to the stock are enclosed in a matrix of fine- to medium-grained monzonite porphyry. The foreign materials include angular to poorly rounded fragments of quartzite, shale, andesite (?), tuff (?), and diorite (?).

The monzonite inclusions are identical in hand specimens to the light gray monzonite porphyry matrix. Where observed by the writer, the monzonite porphyry everywhere was fragmental in texture. The matrix, however, has completely filled and "healed" all voids.

Apparently a large volume of the quartzites and sandstones that crop out along the crest and southwest slopes of Cunningham Hill were brecciated and "jumbled about" on intrusion of the monzonite stock. Blocks of quartzite as much as 8 feet in diameter lie adjacent to one another in a great diversity of attitudes. Over much of the area of quartzite and sandstone breccia outcrop, a hasty reconnaissance suggests that the matrix for the sandstone and quartzite is sandy material; to the southwest, toward the stock, the breccia matrix grades into monzonite. These matrices also completely fill all voids.

Both the monzonite porphyry breccia and the breccia described in the above paragraph are here termed "intrusion breccia", as contrasted with the "clastic breccia" or "secondary breccia" to be described later. All of the monzonite porphyry shown on figure 3 is an intrusion breccia. However, the zone of sediments brecciated by intrusion is not separately indicated on figure 3 because the intrusion breccia probably has no relation to the distribution of tungsten. The healing of voids in the intrusion breccia (both brecciated monzonite porphyry and brecciated sediments) is significant because some examiners have suggested that gold and scheelite fill voids in the intrusive breccia.

Where observed by the present writer and as mapped by previous examiners the volcanics and sediments on the north, east, and south

sides of Cunningham Hill strike northeast and dip 14° to 35° northerly (see fig. 3). These rocks include some minor sheared zones due to faulting, but do not show brecciation due to intrusion as do the rocks of Cunningham Hill.

Brecciation due to fault movements has been superimposed on the intrusion breccia and, in the vicinity of and east of the Wagon adits, on sediments that were not brecciated or only slightly brecciated due to intrusion. Cursory examination would suggest that the strikes of the prevailing faults that exist in the clastic breccia zone range from east to northeast. Too little geologic work has been done to substantiate this opinion. No faults are plotted on figure 3, because such data would be misleading unless collected in detail. The clastic breccia zone as a whole is probably best visualized as a zone of fracturing in which the rocks are "crackled" rather than sheared or sheeted along a prevailing trend. This statement does not mean to imply that shearing does not exist; shearing is evident over much of the area. Future geologic study may reveal a prevailing direction of faulting; however, such was not obvious from the writer's brief examination.

The outcrop of the zone of "clastic" brecciation is outlined on figure 3. The eastern portion of this area and a small area southwest of the Dolores adit are more intensely fractured than the general zone of clastic brecciation. These areas of intense clastic brecciation are separately indicated on figure 3. To avoid confusion, throughout the remainder of this report the term "breccia" will refer to "clastic breccia" unless "intrusion breccia" is specifically stated.

Only in the vicinity of the Dolores and Wagon adits (fig. 3) are the attitudes of the clastic breccia zone boundaries well known. In the vicinity of these adits these boundaries dip 80-85 degrees to the north. Elsewhere the attitude of the contact between brecciated and unbrecciated material is not known, but the relation of the breccia border to topography suggests that the contact is everywhere steep and that the zone of clastic brecciation is essentially a steep-sided, pipe-like zone. Data from the 2 churn drill holes in Las Norias Arroyo suggest that the breccia zone extends to a depth of at least 500 feet below stream level.

Some outcrops within the clastic breccia zone are little brecciated. Reconnaissance suggests that the unbrecciated blocks make up but a small percentage of the total volume of rock. The unbrecciated outcrops mapped by Perry and Moehlman are shown on figure 3. Short dikes or "prongs" of monzonite porphyry are shown on Perry and Moehlman's map to crop out through the quartzite near the east end of the breccia zone. These outcrops were not observed during this examination.

CUNNINGHAM HILL TUNGSTEN DEPOSIT

Tungsten and gold mineralization is confined to the zone of clastic brecciation. The intrusion breccia apparently does not contain pyrite, gold, and scheelite unless that breccia was faulted prior to or concurrent with mineralization. Pyrite, calcite, and very small amounts of scheelite, gold, chalcopyrite, magnetite, and hematite fill small fractures and are disseminated through the quartzite, sandstone, and monzonite porphyry. The molybdenum content of scheelite specimens tested for the examining team is essentially nil. There is a suggestion that carbonates in the ore may cause some difficulty in extraction. Oxidized portions of the clastic breccia are heavily impregnated with limonite. The scheelite content of the potential orebody is obviously greatest in the areas of greatest pyrite concentration. Therefore, strong gossans suggest areas of maximum brecciation and a study of gossans can aid in planning an exploration program.

The scheelite exists in veinlets a fraction of an inch wide and a few inches long and as disseminated crystals through the rock in zones several inches wide adjacent to these veinlets. Rarely are the disseminated scheelite grains more than 1/16 of an inch in diameter. Two types of potential scheelite ore exist - a hard and a soft or pulverant ore. The hard ore represents material in which the host rock has been crackled and scheelite and pyrite introduced. The soft ore exists along zones in which the host has been thoroughly sheared and altered. In the soft ore pyrite is abundant, and the scheelite content also is apparently higher than elsewhere. The hard ore should core very well on diamond drilling. As the soft ore is fairly compact

there should be little difficulty with water loss on diamond drilling below the zone of oxidation, but core recovery might be difficult in the most pulverant portion of the sheared and altered rock. In the upper part of the zone of oxidation it may be necessary to case the holes because there is considerable void space due to leaching of pyrite and calcite.

Pyrite, scheelite, and gold are existent only in the area of secondary brecciation. The southern boundary of the breccia zone and the northern boundary east of the Dolores adit are fairly well defined. The west and northwest portion of the breccia zone, in the vicinity of proposed drill holes Nos. 5, 6, and 16, 15, and 11 is poorly exposed. The most northwesterly boundary, in the vicinity of proposed holes 10, 13, and 14, is merely sketched on figure 3, but can probably be accurately delineated. It is not clear to the writer, without further field study, whether or not the area in the vicinity of the Dolores dump and proposed hole No. 15 should be included in the breccia zone. The breccia zone boundary in this vicinity as shown on the map seems the most probable from present information. Scheelite, associated with pyrite, exists sporadically along fault zones outside of the general area of brecciation. An example can be seen readily in the crosscut of the South Tunnel (fig. 3). Such sporadic occurrences cannot be considered as worthwhile for exploration. Only that area within the breccia zone boundaries as shown on figure 3 is known at this time to be extensively mineralized. Therefore, pending more detailed and accurate mapping, exploration activities should be presumed to be worthwhile only within this target.

G. R. Grimwald, agent and engineer for the applicant, has been unduly impressed by the fact that between the intervals 375 to 450 feet below stream level in the two churn drill holes in Las Norias Arroyo the tungsten content of the rock was higher than for the upper parts of these holes. Grimwald therefore postulated that a horizontal "bed" 65 to 70 feet thick containing 0.1 - 0.15 percent WO_3 might underlie Cunningham Hill. This was the basis for the application. There is absolutely no known geologic basis for postulating such a horizontal "bed." More likely the greatest concentrations of scheelite will exist in irregular shaped pods where "clastic" brecciation was most intense prior to mineralization. The tungsten-bearing zone preferably should be considered analogous to a porphyry copper orebody.

ORE RESERVES

No tungsten or gold reserves can be said to exist at the present state of development of the Cunningham Hill deposit. Due to the obviously low tungsten content of the so-called "ore zone," potential reserves only will be known to exist when sufficient data is collected to suggest the existence of a very large volume of material of sufficient tungsten content to be amenable to large scale mining and metallurgical operations. Enough data now exists to suggest the grade and tonnage of the tungsten-bearing target that can be "shot for" in a preliminary exploration program.

The mineralized breccia zone, as shown on fig. 3, crops out over an area of approximately 30 acres. The zone is probably a "pipe-like, steep-sided zone that extends to several hundred feet in depth. The two churn drill holes in upper Las Norias Arroyo show definitely, for at least one area, that tungsten-bearing breccia exists to a depth of 500 feet below stream level (to an altitude of 6,550 feet above sea-level). Above the 7,000-foot contour (i.e. above the average level of Las Norias Arroyo in the vicinity of the deposit) the writer estimates, in rounded figures, that potentially 15,000,000 tons of tungsten-bearing breccia may exist. For each 100 feet in depth below the 7,000-feet contour approximately 10,000,000 tons of mineralized material might be expected. No overburden exists except in the bottom 25-30 feet of the arroyos. The portion of the breccia zone that might be waste in the form of unbrecciated and therefore unmineralized horses is not known; the writer can guess that such waste might be on the order of 5-10 percent of the mineralized zone.

Sampling to date is so inadequate that the tungsten content of the above potential tonnage can only be a matter of speculation. Assays are available for 355 feet and 340 feet of churn drill holes No. 1 and No. 2 respectively. In both of these holes the weighted assay is slightly more than the 0.06 percent WO_3. One interval of 65 feet in churn drill No. 1 averages 0.15 percent WO_3; one interval of 85 feet in churn drill hole No. 2 averages 0.09 percent WO_3. The bottom 42 feet of the 67-foot churn drill hole near the Wagon tunnel averages 0.02 percent WO_3.

The following tabulation represents all other samples that have been assayed:

Location of Sample	Percent WO_3
Crosscut 50 feet from face of Dolores adit	0.17
" " " " " " " "	0.18
West drift from face of Dolores adit	0.076
" " " " " " "	0.068
East drift from face of Dolores adit	0.15
Dolores adit dump	0.09
" " "	0.10
Trench A-Channel sample from one of best mineralized portions	0.04
" " " " " " " " "	0.052
Trench B- " " " " " " "	0.016
" " " " " " " " "	0.061
" " " " " " " " "	0.03
Lower Wagon tunnel dump	0.016
Crosscut - South tunnel	0.20
" " "	0.32

The last two samples are selected samples along a narrow fracture zone and are not representative. The above tabulated samples, with the possible exceptions of the samples from the dumps, are not representative because they were obviously collected from the best showings of scheelite in any particular area. Nor are the samples so distributed that average grade of the ore zone can be approximated. The samples from the churn drill holes in Las Norias Arroyo, if those holes are representative of the deposit, furnish the most valid data for approximating the possible grade of the Cunningham Hill deposit. Check assays by 3 different reputable, commercial assayers of some of the samples have agreed within 1/100 of one percent in WO_3 content in every case. Whether or not these assay results are adequate is beyond the competence of the writer to appraise.

It would seem from all available data that the target to be hoped for might include 50,000,000 tons of material that might average 1 to 1½ pounds WO_3 per ton. The applicant's hope of 3 pounds of WO_3 per ton seems very optimistic.

There has been some suggestion that the gold content of the material will "sweeten" the value of the ore appreciably. This is very unlikely. Appreciable gold values are found only in the oxide zone. Several oxide areas have been shown to average $2 to $4 in gold (gold at $35 an ounce). However, below the oxide zone individual assays are on the order of 30 to 90 cents per ton. From the sulfide zone as penetrated by churn drill holes No. 1 and No. 2 gold assays ranged in general from a trace to 0.005 of an ounce of gold. A few exceptional samples from these holes assayed as much as 0.02 of an ounce. The average depth of oxidation and therefore gold enrichment has not been

adequately determined. Average depth of gold enrichment is probably on the order of 30 feet, but in places the breccia zone has been oxidized and enriched to a depth of more than 100 feet. Any plan for sampling drill holes should include assays for gold down to the zone of primary ore.

The applicant has claimed 2,450,000 tons of ore averaging $2.77 a ton in gold from the vicinity of the Wagon tunnel. The outline of the applicant's ore block is shown on figure 3. From the data readily available it is difficult to check this gold value estimate but the tonnage figure seems very optimistic. A portion of the applicant's outlined block is south of the mineralized breccia zone and is not appreciably mineralized. The applicant has probably overestimated the depth of the oxide zone to which his assay averages would be applicable. A reserve estimate on the order of 700,000 tons seems more reasonable.

CRITICISM OF PROPOSED EXPLORATION PROGRAM

The applicant's proposed exploration proposal is not to be considered a program to block out ore, but as a preliminary sampling program to determine whether or not a more comprehensive exploration program is warranted. All proposed drill holes are to be vertical. As well as is known at the present time the breccia mass is pipe-like in vertical dimension and the boundaries between brecciated and unbrecciated material are nearly vertical. Vertical holes started within the breccia zone have the advantage of testing potential ore their entire length. Inclined holes, particularly if started on the north side of Cunningham Hill and directed southward, would have the disadvantage of being partly in probable barren ground. The program as presently outlined is dominately for the purpose of determining whether or not a potential orebody

exists. Delineation of the potential orebody is of secondary importance in this preliminary program.

The applicant prefers to drill 14 vertical holes as shown on figure 3 to a depth of 6550 feet above sea-level; thus the holes will range from 400 to 770 feet in depth. The writer firmly believes that 14 shorter holes, perhaps not to exceed 300 feet in depth, would accomplish about the same purpose as the proposed preliminary drilling program. Such holes would not test the mineralized zone down to a uniform elevation of 6550 feet, but they would accomplish the avowed purpose of determining whether or not additional systematic exploration is warranted. Furthermore, if a greater number of short holes (rather than comparatively few long holes) were used these holes would sample the deposit in a more representative fashion. As both the applicant and the writer's Bureau of Mines colleague both prefer the "long hole" exploration plan, and because if properly executed that plan can accomplish the desired results the writer is willing to defer to their opinions. The writer wishes, however, to put the "short hole" program before the Defense Minerals Administration as a possible alternative.

The proposed drill holes should be located to sample representative portions of the entire zone of fault breccia. For example, if a large percentage of the total number of holes were concentrated in the vicinity of churn drill holes Nos. 1 and 2, and only a few holes sample the remainder of the deposit, erroneous interpretations could result from the drilling. Sufficient holes must be drilled to fairly represent the deposit. If, for example, only 3 holes were drilled along the crest of Cunningham Hill and no supplementary holes were

drilled, these 3 holes by coincidence might all be in comparatively well mineralized material or conversely in poorly mineralized material. Therefore the writer believes that, if started, the entire drilling program should be carried out, and that the program should not be made so flexible as to allow a concentration of drill holes around one particularly good showing. The Cunningham Hill mineralized zone has potential as an orebody only if it can be proven that a large tonnage can exist; to concentrate drilling in a small area would defeat the purpose of the preliminary exploration program.

If deep drilling is to be done the locations of the drill holes as specified by the applicant is in general satisfactory; however, some drill sites are probably poorly located. Unless Holes 11 and 12 can be shown to be in an area of brecciation that can be made a part of an exploitation program the holes should not be drilled. A review of figure 3 by the reader will show that as known now the area in which holes 11 and 12 are proposed is not brecciated, and if brecciated is in an area not likely to be mined with the main breccia mass. Proposed holes 10 and 13 are within a few feet of the contact between brecciated and completely unbrecciated monzonite porphyry. The attitude of the contact between brecciated and unbrecciated monzonite in the vicinity of these holes is not known; therefore, the holes should be moved southward from the present location to insure that only brecciated material will be tested. As known now the brecciated zone in the vicinity of hole 10 is narrow; therefore this hole might be of little value in a preliminary drilling program. Holes 5 and 6 also possibly are positioned near the edge of the breccia zone and should be relocated to insure that only breccia is sampled. The boundary of the breccia zone in the

vicinity of holes 5 and 6 is not well known. However, these holes may be fairly well located. Hole 4 is definitely outside the zone of brecciation and should be relocated. The contact between the breccia and unbrecciated rocks in the vicinity of hole 4 dips steeply to the north; therefore, as located on figure 3, the hole is not likely to encounter breccia at depth. Holes 8 and 9 also are spotted near the edge of the breccia mass. However, the contact along this portion of the breccia mass dips steeply northward, therefore the holes are probably well planned. As well as is known at the present time hole 15 is outside of the breccia zone. The contact between breccia and unbrecciated material is poorly known in the vicinity of this hole. If it can be shown by careful studies of the outcrops that this contact is east of the proposed hole 15, this location will be satisfactory.

The shortcomings, as outlined above, of the proposed diamond drill hole locations have been discussed in a general way with G. P. Griswold, engineer and agent for the applicant. Mr. Griswold is appreciative of these shortcomings and proposes to relocate the position of the diamond drill hole locations to insure, where necessary, that the holes will be in mineralized breccia. The general plan will remain as shown on figure 3. Holes 11 and 12 may not be drilled, but the equivalent footage may be used elsewhere. The plan of drilling should be left flexible enough so that the planning of hole location can depend to a certain extent on the modification of geologic knowledge as acquired during the exploration program. However, the holes should not be bunched in a particularly favorable small area. In the writer's opinion Mr. Griswold can be depended on to conduct the drilling program in a logical manner.

Assuming that the principle of drilling for a large, very low grade scheelite deposit meets the approval of the DMA, and the proposed program is put into effect, sufficient drilling should be done to determine whether or not this mineralized breccia is a potential source of tungsten. If early drilling results are discouraging, the program should not be stopped. At least 8 holes should be drilled. These 8 holes should be chosen from the proposed locations noted on figure 3 as holes numbered 3, 4, 5, 6, 7, 8, 9, 14, and 16. A hole approximately halfway between proposed holes 5 and 16 also would probably be worthwhile. It should be noted that this proposed program does not agree exactly with that proposed in the engineering report.

CONCLUSIONS

In view of the lack of data available for appraisal of the Cunningham Hill tungsten deposit, there is an element of risk in recommending either for or against an exploration program. Especially lacking is data on possible recovery of tungsten from the Cunningham Hill type of potential ore. If the reviewers of this report (1) have knowledge that an economic method of beneficiation probably can be worked out for a large low grade scheelite deposit, and (2) if it is believed - for an open pit operation - a possible 50,000,000 tons of material, which can be hoped to average 1-1½ pounds of WO_3 per ton, is a potential source of tungsten, an exploration loan should be recommended. If either of the above points is unfavorable, the loan should be denied.

If favorable consideration of an exploration program is entertained, the problem of accurate assaying of low grade tungsten-bearing material should be appraised by someone more experienced in

that field. The writer does not believe that the examining team has data available to appraise the assaying problem adequately.

ADDED NOTE ON ORE-TESTING

It is not in the province of the geologist to make comments on ore-testing data, therefore the following remarks are presented with apologies. Nevertheless, the writer believes that the data that does exist on ore-testing should be explained. Preliminary flotation tests (referred to in the engineering report) by American Cyanamid were made on comminuted material baled from one of the churn drill holes and heated, with probable deleterious results, to dryness. Also the samples were contaminated by foreign materials which apparently gave considerable trouble in the flotation tests. Certainly this material cannot be considered typical of the ore. American Cyanamid's work is essentially useless for our purposes. Their results are neither favorable or unfavorable to the proposal. American Cyanamid determined that the ore contains appreciable amounts of an unidentified iron-bearing carbonate that is difficult to depress and that has a tendency to float as slime. This is the only information of possible value that the writer could abstract from American Cyanamid's reports.

One bulk sample of oxide ore and two bulk samples of sulfide ore were furnished by the applicant for metallurgical testing by the Bureau of Mines in Tucson. Since the engineering report was prepared it has been determined that these samples contained too little tungsten to be representative. Therefore flotation tests on these samples were not warranted.

DMA-1387A, CUNNINGHAM HILL TUNGSTEN AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

Engineering Report

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U. S. Bureau of Mines

October 1951

DNA-1387X, CUNNINGHAM HILL TUNGSTEN AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

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INTRODUCTION

The Coordinating Committee of the Defense Minerals Administration requested the Field Team, Region IV, to examine and report on the Ortiz Mine Grant, Santa Fe County, N. Mex. The applicants, Potter and Sims, had requested a loan in order to explore by diamond drilling a large brecciated area on Cunningham Hill for the possible production of tungsten in the form of scheelite.

Such an examination was made by M. J. Elsing, John H. Soulé and H. C. Brown of the U. S. Bureau of Mines, and A. F. Shride and John Faick of the U. S. Geological Survey.

The Docket is known as DMA-1387X - tungsten.

ACKNOWLEDGMENTS

Acknowledgment herewith is made to G. N. Griswold, mining engineer and agent for Potter and Sims, lessees of the Ortiz Mine Grant. Griswold accompanied the examiners to the property and provided numerous reports and other information which was of great help. Among the reports, mention should be made of a report by Guy W. Crane, and a report by V. H. Perry and H. S. McMillan, geologists for the Anaconda Copper Mining Co. While these reports considered only the possibilities of production of gold they contributed much regarding the geology of the deposit. Maps accompanying the reports were particularly helpful.

Acknowledgment is also made to A. F. Shride and J. H. Faick of the Geological Survey who assisted the writers in their examination of the property.

LOCATION, TOPOGRAPHY AND PHYSICAL FEATURES

The Ortiz Mine Grant covers nearly all of unsurveyed T. 13 N., R. 8 E., the southern part of T. 14 N., R. 8 E., the southern half of T. 13 N., R. 7 E., and the northern halves of T. 12 N., R. 7 E., and T. 12 N., R. 8 E. The tungsten deposits are located near the center of the original grant in the Cunningham Hill area.

Cunningham Hill is reached by leaving the town of Cerrillos and traveling southerly towards Madrid for nearly one-half mile to the schoolhouse road, turning left or east on this road for about one-tenth mile, thence sharply south, or right. This unimproved road is followed southerly for nearly 9 miles to the Cunningham Hill area where the deposits are located (see Fig. 1).

The topography is steep and rugged in places with a mean altitude of nearly 7,200 feet above sea level. Vegetation consists of mountain cedar, juniper, Ponderosa pine, and various native shrubs and grasses.

The average annual precipitation ranges from 20 to 25 inches. Winter snows and summer thunder showers may be heavy but should not seriously hamper mining operations. Temperatures range from 95 degrees to below zero, but the sub-zero weather usually is not prolonged.

HISTORY AND PRODUCTION

Gold has been produced from the Ortiz Grant since before 1850. It is reported that approximately $2,000,000 has been produced from placer and lode deposits. Most of this has come from early day placer

operations. Lode gold is found over a large area on Cunningham Hill. The highest grade values are usually confined to the most intensely brecciated areas. Cunningham Hill has been intriguing and for 50 years one individual or corporation after another has examined the property with a view to determining the possibility of developing a large low-grade open-pit operation for the production of gold.

Thomas A. Edison became interested in the property in 1897. During 3 years S. O. Burns, a mining engineer for Edison, drove 1,050 feet of tunnels and shafts, cut 3,700 feet of trenches, and took nearly 1,000 samples. In 1927 the property was examined for the United Verde Copper Co., and in 1927 Perry and Meehlman examined the property for the Anaconda Copper Mining Co. In 1945 Mrs. George W. Potter, wife of George W. Potter of Potter and Sons, successful operators in the Missouri lead-zinc district, purchased the Ortiz Grant. In 1947 the occurrence of scheelite was noted at numerous places on the property.

In the early part of 1951 two churn drill holes were drilled to a depth of 500 feet. Both holes encountered low-grade scheelite values throughout a considerable part of their total depth.

OWNERSHIP AND EXTENT

The mineral rights of the Ortiz Mine Grant are owned by Mrs. George W. (May F.) Potter of Joplin, Missouri. These rights cover an area of nearly 90 square miles. On May 26, 1951, George W. Potter acquired a lease on the property from Mrs. George W. Potter. Two days

later Potter assigned his lease to George W. Potter and Dewey Sims, a co-partnership doing business as Potter and Sims. Royalty amounts to 10 percent of the net returns.

DESCRIPTION OF DEPOSIT

All reports on the geology of Cunningham Hill of the Ortiz Mine Grant are in agreement that mineralization occurs in a more or less vertical igneous stock with vertical or almost vertical boundaries. All reports agree that certain sections of this stock are more intensely brecciated than others. S. O. Burns, representing Edison, made a map of Cunningham Hill showing a large number of sizeable waste horses surrounded by ore areas which he sampled. Perry and Moehlman state "the Cunningham breccia cannot be recommended for a large-scale, low-cost operation because of the considerable portions of rock assaying 0.01 ounce gold".

Perry and Moehlman make one important observation. Ore in the Upper Wagon tunnel assayed 0.07 and 0.08 ounce gold in the oxidized zone. Samples of the primary sulphides in the Lower Wagon tunnel, below the ore mentioned, averaged less than 0.02 ounce gold per ton. The report states "this leads to the dismal conclusion that there probably has been some enrichment of gold in the oxidized zone".

The Upper Wagon tunnel was driven in one of the two most brecciated areas on the property where comparatively high gold values were obtained. If the primary sulphides below the best ore showed

less than 0.02 ounce gold per ton it is a logical deduction that the average gold content for the less brecciated area in depth will be exceedingly low. The assay reports of the churn drill holes show a very low gold content. Most of the assays show from a trace to 0.005 ounce per ton. A few assays show 0.01 to 0.02 ounce.

Gold, as a by-product in the production of scheelite, will not be important except in a comparatively small area where the applicant estimates 2,450,000 tons of ore averaging $2.77 per ton.

MINEABLE ORE RESERVES

The Cunningham Hill area has no reserves of scheelite ore. The applicants' maps show a small area in which they believe there are 2,450,000 tons of gold ore averaging $2.77 per ton. Scheelite occurs in this ore but, since no assays for WO_3 were made, the amount is unknown.

In April and May 1951 the applicants sank two 500-foot churn drill holes in the Dolores area. In Hole No. 1 the average value of 13 5-foot samples at a depth from 375 to 440 feet showed 3.06 pounds of WO_3 per ton. Hole No. 2 showed 1.8 pounds of WO_3 per ton for 85 feet at a depth from 375 to 460 feet.

On the basis of this drilling the applicants believe that there is a flat bed of ore approximately 85 feet thick which may cover approximately 40 acres. They estimate a possible 9,000,000 tons of ore with an average grade of 3 pounds of WO_3 per ton.

PRESENT STATUS

Dolores Churn Drilling

Panned samples from the sludge of each 5 feet of churn drilling were observed under ultraviolet light by the applicants' engineers. Samples were graded as follows:

NG = No good
P = Poor
F = Fair
G = Good
VG = Very good

This grading does not check closely with the assay results. Reference to samples Nos. 270, 271, 272 and 273 in hole No. 2 is enlightening. Each of samples 270, 271 and 273 has the same grading for 25 feet, namely 4 Poors and 1 Fair. The WO_3 content is 0.8, 0.6 and 1.6 pounds WO_3 per ton. Sample 273 has 4 Poors and 1 No Good, and assays 2.0 pounds per ton. In hole No. 1 a Very Good sample ran only 1.2 pounds and a Good one ran 3.6 pounds. The point to be made from these observations is that material showing little or nothing may contain appreciable amounts of scheelite, and samples that are classified as Good or Very Good may not be as high grade as anticipated.

A list of the rating under ultra violet light of each 5 feet of hole is given in the appendix. A list of the assay results is given as follows:

Dolores Churn Drill Hole No. 1

Depth, Feet	Feet sampled	WO_3 lbs./ton	Total ft. x lbs.
85 - 130	45	1.0	45.0
130 - 140	10	0.6	6.0
140 - 195	55	0.6	33.0
195 - 210	15	0.6	9.0
210 - 265	55	0.8	44.0
265 - 375	110	1.0	110.0
85 - 375	290	0.85	247.0
375 - 400	25	3.2	80.0
400 - 405	5	3.6	18.0
405 - 410	5	2.6	13.0
410 - 415	5	3.2	16.0
415 - 420	5	2.4	12.0
420 - 425	5	2.6	13.0
425 - 430	5	1.8	9.0
430 - 435	5	2.2	11.0
435 - 440	5	5.4	27.0
375 - 440	65	3.06	199.0
85 - 440	355	1.26	446.0

Dolores Churn Drill Hole No. 2

20 - 50	30	1.8	54.0
50 - 75	25	1.6	40.0
75 - 100	25	1.6	40.0
100 - 120	20	0.8	16.0
120 - 135	15	1.2	18.0
135 - 160	25	1.0	25.0
160 - 185	25	1.2	30.0
185 - 205	20	1.0	20.0
205 - 215	10	1.4	14.0
215 - 270	55	1.4	77.0
270 - 300	30	1.6	48.0
300 - 325	25	1.2	30.0
325 - 350	25	0.8	20.0
350 - 375	25	0.6	15.0
20 - 375	355	1.26	447.0
375 - 400	25	1.6	40.0
400 - 425	25	2.0	50.0
425 - 450	25	1.8	45.0
375 - 450	75	1.8	135.0
20 - 450	430	1.35	582.0

	Lbs. WO_3 per ton
Hole No. 1	
85 - 375 feet or 290 feet	0.85
375 - 440 feet or 65 feet	3.06
85 - 440 feet or 355 feet	1.26
Hole No. 2	
20 - 375 feet or 355 feet	1.26
375 - 450 feet or 75 feet	1.80
20 - 450 feet or 430 feet	1.35

If the entire length of mineralization of both holes is averaged, the WO_3 content is 1.3 pounds per ton for 390 feet. If the higher grade sections are averaged, the WO_3 content is 2.39 pounds per ton for 70 feet.

Surface Samples

A number of samples from surface outcrops, dumps and shallow surface workings have been taken by company engineers. These are listed as follows:

Location	Sample No.	WO_3 Lbs./ton	Remarks
Dolores Tunnel	P-1	3.4	
	P-2	3.6	
East drift	P-3	3.0	
West drift	D-23	1.5	
West drift	D-24	1.4	
Dump	P-4	1.8	
Dump	P-5	2.0	
Trench A	D-79	0.8	
	D-83	1.0	
Trench B	D-92	0.3	
	D-93	1.2	
	D-94	0.6	
South tunnel	No. 1	4.0	Pyrite vein
	No. 2	6.4	Pyrite vein
Old churn drill hole	No. 1	0.4	25-67.5 ft.
Lower wagon tunnel		0.3	Dump, sulphide

Assaying

Recognizing the fact that assaying for small amounts of WO_3 is difficult, the matter of check assaying was discussed with Griswold, the applicants' engineer and agent. He advised that Hawley and Hawley of Douglas, Ariz., Crismon and Nickles of Salt Lake City, and Albuquerque assayers had done the assaying. Check samples were run by these assayers. A sample run by American Cyanamid gave almost identical results to the original assay.

From the evidence submitted the conclusion was drawn that the results of check sampling were sufficiently close to warrant the belief that assaying is substantially correct.

PROJECT PROPOSAL AND COSTS

Exploration

The applicants' plan is to drill 14 diamond drill holes (see fig. 2). The cost of this work they estimated as follows.

Diamond drilling, 7,882 ft. @ $4.00	$31,528
Road construction	6,000
Sampling material (core boxes) etc.	700
Assaying, estimated $1.00 per foot	7,882
Bookkeeping services	1,000
1 sampler (laborer)	1,600
1 Manager	4,000
1 Field supervisor	2,800
Rental on transportation equipment and facilities	2,400
	$58,910

On September 5, 1951, these costs were discussed with the applicants' engineer and a new cost estimate was outlined. Since that conference, information has been obtained which further alters the

cost estimate. The plan outlined on September 5 provided for 2 drillers to operate 2 shifts per day. A very competent diamond driller, who has ample drilling equipment, has advised that two drills can be run one shift only as drillers are not available for a 2-shift operation. This driller has worked for the Bureau and he has proven to be a very reliable person. He stated that every other drill contractor was faced with a labor shortage and that under those conditions, day shift drilling on two drills was all that could be expected.

It is estimated that 2 drills would average 20 feet each per 8-hour shift, or 40 feet per day when drilling one shift. Whenever possible, diamond drill contractors prefer to work a 10- or 12-hour shift. This is particularly true when drilling from the surface. On this basis the footage drilled would be considerably more than 40 feet per day. It is believed that the proposed drilling could be done in less than 5 months.

The applicants' estimate of $4.00 per foot for diamond drilling is much too low. Recent drilling quotations from contractors indicate a cost of $7.00 per foot with the contractor supplying everything, including water. This price is for BX core, which is recommended. If an AX core will give satisfactory results, the hole will be reduced to that size. A reduction of 25 cents per foot would result if the AX core were satisfactory. In using a cost of $7.00 per foot, allowance has been made for some cementing of holes if that becomes necessary.

It is proposed that all cores be split, and that one half be used for assaying, and the other half be preserved as a record for examination and study. The cost estimate provides for a core splitter and core boxes. The preservation of one half the core is of the greatest importance. Should a contract be granted it should provide that drill cores be property split and one half placed in core boxes, that records be kept of the location of each 5-foot section of hole, and that core recovery be recorded accurately. All core should be boxed with care and housed until 6 months after the completion of the project.

Estimated Cost of Project (Revised)

1 Supervisor, 6 months at $500		$3,000
2 Samplers:		
Lead man	$350 per month	
Laborer	200 " "	
Per month	$550 6 months	3,300
Drilling 7,882 feet at $7.00		55,174
Core boxes and core splitter		800
Assaying, including transportation:		
1,576 SOJ samples at $4.25	$6,698	
100 Gold samples at 1.00	100	
Check SOJ assaying, Ledoux & Co.	1,675	
Total		8,473
Road construction, 3,100 feet and 6 turnouts for drill locations		4,000
Rentals per month:		
Office at Cerrillos	$ 50	
1 4-wheel drive truck	100	
1 Plymouth car, 5¢ per mile	100	
Traveling expense	50	
Per month	$300	
6 months		1,800
Sampling and assaying dumps, tunnels, pits, trenches		3,300
Total		$80,047
Total in round numbers		$80,000

The foregoing cost estimate is made on the assumption that the work will be completed in 6 months, during which time 7,883 feet of diamond drilling will be done at $7.00 per foot. It is estimated that $8,463 will be spent for assaying. Each 5 feet of hole is to be assayed for WO_3. Occasional gold samples will be advisable, particularly when drilling in the gold area. An allowance has been made for check assaying for WO_3. The applicants' agent has agreed to the elimination of a bookkeeper as he believes he can handle this work. He also agreed to very reasonable rentals and overhead expense, the total amounting to $300 per month.

The last item of $3,500 was not included in the applicants' request. The reason for this is the fact that he considered only the possibility of mining a deep bed, and assaying of lower grade material on the surface had no bearing on his problem. An inspection of many of the underground workings showed small amounts of scheelite. These have not been sampled. It is proposed that large samples be taken of all dumps, tunnels, trenches, pits, and other surface workings.

Some sampling also should be done of the placer tailings, as well as the placer deposits near bed rock, to determine the presence of scheelite.

The present estimate of $80,000 for this project is approximately $21,000 higher than the applicant's original request. Some items in the original application have been reduced. The increase from $4.00

per foot to $7.00 per foot increases the cost of diamond drilling by $23,646.

The applicant has not indicated the proposed sequence of drilling. It is believed that Holes Nos. 13, 14, 15 and 16 should be the first holes to be drilled. The reason for this is to expand a possible ore area around holes Nos. 1 and 2 already drilled. If these holes are equal in grade to the churn drill holes Nos. 1 and 2, the project would be encouraging. Holes Nos. 3, 7 and 8 also should be drilled. These 7 holes could be considered as Stage No. 1 in the drilling program and the rest of the holes could be considered as Stage No. 2.

The Holes as proposed by the applicants and their depths are listed herewith. the Division into stages and the approximate sequence is suggested by the examiners:

Stage No. 1		Depth feet
Hole No. 1		
13		508
14		564
15		545
16		560
3		553
7		570
8		786
	Total	4,085
Stage No. 2		
9		772
10		535
11		442
12		408
4		545
5		587
6		588
		3,877
	Total	7,882

Three conditions might result from the drilling of the holes in Stage No. 1:

1. Ore might be of commercial grade in which case the applicant and the Government would want to continue drilling the holes in Stage No. 2;

2. If no appreciable values are encountered the applicant and the Government would not wish to continue drilling the remaining holes;

3. If the ore encountered was submarginal at present prices of WO_3 but drilling indicated the possibility of blocking out a very large tonnage, the Government might wish to continue drilling and the applicant might wish to discontinue.

Of the three possibilities the third is the most likely. It is probable that no contract could be drawn at this time to cover the third condition. It is mentioned only to draw attention to the fact that the Government might want to drill the holes in Stage No. 2 and perhaps, many additional holes. It is presumed that Potter and Sims would wish to have drilling continued even though they could see no immediate profit to themselves but they would probably not be willing to contribute their share of the cost if the ore encountered were submarginal. In considering this project it would be well to consider that a much larger exploration of the possibilities of Cunningham Hill might eventually be required.

It is expected that the depths of hole would depend upon the character of the material encountered. The position of each hole might vary somewhat because of topographic features and also because of the necessity of spotting the holes within the area of maximum brecciation.

It is expected that ample water can be obtained from churn drill holes No. 1 and No. 2.

In the event that a contract is granted the applicant, attention is called to changes recommended by the examiners as follows:

1. That the cost of diamond drilling be changed from $4.00 per foot to $7.00 per foot for BX core;

2. That $3,500 be allowed for sampling and assaying of surface outcrops, dumps and the shallow surface workings;

3. That the drilling of the proposed 14 holes be divided into two stages, and that the sequence of drilling be agreed upon;

4. That some check assaying be done by nationally known assayers, preferably Ledoux and Co.

PRODUCTION PLAN

If exploration, as proposed by the applicants, indicates several million tons of ore, the applicants propose to develop, equip and operate the property by methods similar to those used in their lead-zinc operations in Missouri. They propose to use the room-and-pillar method of mining. Diesel shovels would be used and Diesel trucks would transport ore to an inclined belt conveyor for delivery to the mill. The applicants expect that the cost of mining would be less than $2.00 per ton.

Preliminary milling tests have been made by the American Cyanamid Co. Thus far a 20 percent WO_3 concentrate has been produced with a recovery of 90 percent. WO_3 in a 60 percent concentrate is worth $3.25 per pound. American Cyanamid is conducting additional tests with a view to increasing the grade of the concentrate.

A spectrographic analysis was made by the applicants and a similar analysis was made by the Bureau of Mines. Both of these analyses showed no penalty elements were present in the tungsten-bearing material.

Milling will be by flotation. The applicants' engineer believes that the first step in milling after crushing should be an abrasive grind. He anticipates that such grinding will free the breccia filling, which contains the scheelite, from the breccia fragments. By this grind he expects to obtain one ton of material which will contain 100 percent of the scheelite from 4 tons of crushed ore. On the basis of this method he anticipates treating by flotation one-fourth of the crude ore with a total milling cost of $0.50 per ton.

The examiners do not agree with the methods and costs of mining and milling.

In the first place it is not believed that the higher grade scheelite ore occurs as a flat bed of ore some 65 feet in thickness. Higher grade concentrations of scheelite are very much more likely to occur as "plums in a pudding" and will not be confined to any

particular horizon. Therefore, Missouri methods of mining flat deposits cannot be applied. Until more is known about the size, shape, number, and location of the higher grade ore sheets, no cost of underground mining can be estimated. It is safe to assume that the cost will be considerably more than $2.00 per ton.

A number of screen tests have been made on the gold ore and it has been found that the gold values in the finer material are much higher than in the coarser material. It is logical to assume that similar results would apply to scheelite. Some of the scheelite occurs as a dissemination in the breccia fragments and no method of abrasive grinding would free it. The proposed scheme of concentrating 4 tons of crude ore into one ton with 100 percent recovery cannot be given serious consideration. A milling cost of $0.50 per ton cannot be accepted. It is believed that all of the crude ore must be treated by flotation with a cost of not less than $1.25 per ton in a milling operation of 1,000 to 2,000 tons per day.

In brief, it is believed that the operation of this property on the basis as outlined in the applications is neither practical nor profitable.

A total of 16 samples from surface outcrops, dumps and shallow workings on Cunningham Hill averages 2.0 pounds WO_3 per ton. Omitting 2 high-grade samples, 14 samples averaged 1.5 pounds WO_3 per ton. There are scores of places, not sampled, where scheelite has been found in various parts of the brecciated areas of the hill. This

fact, when considered with the results of churn drilling, indicate the possible existence of a very large tonnage of scheelite-bearing material. Churn drilling indicates the possibility that the total thickness of the deposit will be more than 400 feet. The deposit is subject to mining from an open pit. Very little overburden will have to be removed. The material is not hard, and open pit mining costs should be low.

An estimate of the possible costs of production is impossible because of the uncertainties of the grade and the metallurgical recoveries. The facts presently known show that there is a possibility of opening a deposit with a gross value of $4.30 per ton which can be mined from an open pit. Additional drilling is the first requisite in determining whether Cunningham Hill can be made a substantial producer of tungsten.

PROPOSED FINANCING

The applicants have outlined a project to cost $58,910. In their costs they have figured 7,882 feet of diamond drilling at $4.00 per foot. Current contract rates of diamond drilling under similar conditions vary from $6.75 to $7.50. A cost of $7.00 per foot has been used. Certain of the applicants' costs have been reduced or eliminated, bringing the total expenditures to $50,047, or in round numbers, $50,000.

The applicants' share of the cost is 25 percent and it is presumed that they would be willing to contribute $20,000 as their part, instead of $14,727 as provided for in the original application. If not, drilling could be reduced to 12 holes instead of the original 14 as proposed.

CONCLUSIONS

The conclusions are as follows:

1. There is no evidence from churn drill holes Nos. 1 and 2 that warrants the belief that a flat bed of scheelite ore could be mined at a profit by underground methods.

2. There is much evidence to believe that a very large tonnage of submarginal ore may be found by additional drilling. This ore might extend over some 30 acres and would be subject to mining by open pit methods.

3. It is believed that Cunningham Hill might produce 50,000,000 tons or more. No estimate of grade can be made. It is most likely that it will be submarginal but how submarginal cannot be estimated.

4. The metallurgy has not been solved. The preliminary tests have not been discouraging. Testing is being continued. Given millions of tons of ore, a satisfactory method of recovery will be found.

5. The applicants, Potter and Sims, are a very responsible firm. They are experienced mining men and are conducting substantially large successful lead-zinc mining operations in Missouri. The project will be managed efficiently with little or no overhead expense.

RECOMMENDATIONS

Because there is the possibility of discovering many millions of tons of scheelite ore in Cunningham Hill, which can be mined by open pit methods, and in spite of the fact that the ore probably will be submarginal, the expenditure of $80,000 is recommended for preliminary exploration.

The project has possibilities of providing a great potential reserve of tungsten, which, if not now, may some day be of inestimable value to our National Security.

On the slight chance that WO_3 can be produced at a cost a little above the present market price, it is recommended that the project be approved promptly so that drilling can be started without delay.

DMA-1387X, CUNNINGHAM HILL TUNGSTEN AREA, ORTIZ MINE GRANT
SANTA FE COUNTY, NEW MEXICO

APPENDIX

October 1951

APPENDIX

Dolores Churn Drill Hole No. 1

January 1951

Sample No.	Depth, ft.	Length, ft.	Gold, Oz.	Copper, percent	WO_3, Lbs./ton	Ultra violet reading of panned conc.
223	6 - 8	2	0.015	0.0	0.0	P
224	8 - 11	3	0.020	Tr	.0	P
225	11 - 15	4	.000	0.0	.0	P
226	15 - 20	5	.000	1.05	.0	NG
227	20 - 25	5	.005	1.15	.0	NG
	25 - 30					NG
	30 - 35					NG
	35 - 40					NG
	40 - 45					NG
	45 - 50					NG
228	50 - 55	60	.002		No assay	
	55 - 60					NG
	60 - 65					NG
	65 - 70					F
	70 - 75					F
	75 - 80					F
	80 - 85					F
	85 - 90					F
	90 - 95					G
	95 - 100					F
	100 - 105					G
322	105 - 110	45			1.0	G
	110 - 115					G
	115 - 120					G
	120 - 125					F
	125 - 130					F
323	130 - 135	10			0.6	F
	135 - 140					F
	140 - 145					F
	145 - 150					F
	150 - 155					G
	155 - 160					F
	160 - 165					F
324	165 - 170	55			0.6	F
	170 - 175					F
	175 - 180					F
	180 - 185					G
	185 - 190					F
	190 - 195					F

Sample No.	Depth, Ft.	Length, Ft.	Gold, Oz.	Copper, percent	WO_3 Lbs./ton	Ultra violet reading of panned conc.
	195-200					P
325	200-205	15			0.6	P
	205-210					P
	210-215					NG
	215-220					G
	220-225					F
	225-230					F
	230-235					VG
326	235-240	55			0.8	F
	240-245					VG
	245-250					VG
	250-255					G
	255-260					F
	260-265					VG
	265-270					P
	270-275					F
	275-280					NG
	280-285					P
	285-290					NG
	290-295					F
	295-300					P
	300-305					NG
	305-310					NG
	310-315					NG
	315-320					NG
	320-325					NG
	325-330					NG
	330-335					NG
	335-340					NG
327	340-345	110			1.0	NG
	345-350					NG
	350-355					NG
	355-360					NG
	360-365					P
	365-370					P
	370-375					P
	375-380				2.0	VG
	380-385				1.2	VG
	385-390				2.2	VG
	390-395				2.0	VG
235	395-400	5	0.02		10.0 - 7.8	VG

Sample No.	Depth, Ft.	Length, Ft.	Gold, Oz.	Copper, percent	WO_3 lbs./ton	Ultra violet reading of panned conc.
	400 - 405				3.6	G
	405 - 410				2.6	F
	410 - 415				3.2	VG
	415 - 420				2.4	VG
	420 - 425				2.6	VG
	425 - 430				1.8	G
	430 - 435				2.2	F
	435 - 440				5.4	F
	440 - 445				Tr	F
	445 - 450				0.8	F
	450 - 455					F
	455 - 460					F
	460 - 465					F
	465 - 470					F
	470 - 475					F
	475 - 480					F
	480 - 485					F
	485 - 490					F
	490 - 495					NG
	495 - 500					NG

Dolores Churn Drill Hole No. 2

January 1951

	12 - 17	5				NG
	17 - 20	3				NG
	20 - 25					F
	25 - 30					G
	30 - 35					NG
258	35 - 40	30	0.005		1.8	F
	40 - 45					F
	45 - 50					F
	50 - 55					F
	55 - 60					F
259	60 - 65	25	0.005		1.6	F
	65 - 70					G
	70 - 75					F

Sample No.	Depth, Ft.	Length, Ft.	Gold, Oz.	Copper, percent	WO_3 Lbs./ton	Ultra violet reading of panned conc.
	75 - 80					G
	80 - 85					P
260	85 - 90	25	0.005		1.6	P
	90 - 95					F
	95 - 100					F
	100 - 105					F
	105 - 110					P
261	110 - 115	20	0.005		0.8	F
	115 -120					P
	120 - 125					NG
262	125 - 130	15	0.01		1.2	NG
	130 - 135					NG
	135 - 140					G
	140 - 145					P
263	145 - 150	25	0.005		1.0	P
	150 - 155					NG
	155 - 160					G
	160 - 165					P
	165 - 170					P
264	170 - 175	25	trace		1.2	P
	175 - 180					F
	180 - 185					P
	185 - 190					P
	190 - 195					P
265	195 - 200	20	trace		1.0	NG
	200 - 205					F
	205 - 210					F
266	210 - 215	10	0.005		1.4	F
	215 - 220					NG
	220 - 225					NG
	225 - 230					NG
	230 - 235					NG
	235 - 240					NG
267.	240 - 245	55	trace		1.4	NG
	245 - 250					NG
	250 - 255					NG
	255 - 260					NG
	260 - 265					NG
	265 - 270					NG

Sample No.	Depth, Ft.	Length, Ft.	Gold, Oz.	Copper, percent	WO_3 Lbs./ton	Ultra violet reading of panned conc.
	270 - 275					P
	275 - 280					P
	280 - 285					P
268	285 - 290	30	0.01		1.6	P
	290 - 295					NG
	295 - 300					P
	300 -305					P
	305 - 310					P
269	310 - 315	25	0.005		1.2	P
	315 - 320					P
	320 - 325					P
	325 - 330					P
	330 - 335					P
270	335 - 340	25	trace		0.8	P
	340 - 345					P
	345 - 350					P
	350 - 355					P
	355 - 360					P
271	360 - 365	25	0.005		0.6	P
	365 - 370					P
	370 - 375					P
	375 - 380					P
	380 - 385					P
272	385 - 390	25	trace		1.6	P
	390 - 395					P
	395 - 400					P
	400 - 405					P
	405 - 410					NG
273	410 - 415	25	trace		2.0	P
	415 - 420					P
	420 - 425					P
	425 - 430					P
	430 - 435					P
274	435 - 440	25	trace		1.8	P
	440 - 445					P
	445 - 450					P
	450 - 455					P
	455 - 460					P

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

224 New Customhouse
Denver 2, Colorado

February 14, 1952

Memorandum

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

From: Executive Officer, Field Team, Region IV

Subject: DMA 1387X, Potter and Sims, Cunningham Hill Tungsten Deposit, Ortiz Mine Grant, Santa Fe County, New Mexico

We are forwarding you today the final report on the Potter and Sims tungsten application, Docket 1387X.

We are attaching a Metallurgical Report on this property which was given to me by G. R. Griswold. This may be of interest to you when reviewing the report.

J. H. East, Jr.

J. H. East, Jr.

Attachment

FEB 1 0 1952

Reviewed by
DMEA OPERATING COMMITTEE

2-20-52
(date) (HB)

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

REGIONAL DIRECTOR'S OFFICE REGION IV
JAN 31 1952
BUREAU OF MINES DENVER, COLORADO

January 21, 1952

Defense Minerals Administration
RECEIVED
FEB 1 0 1952

Mr. J. H. East Jr., Regional Director
United States Bureau of Mines
224 New Customs House
Denver 2, Colorado

Re: DMA Docket 1387X

Dear Mr. East:

Since the filing of our original application on May 29, 1951 for an exploration loan to search for tungsten on the Ortiz Mine Grant, Santa Fe County, New Mexico we have received some reports on metallurgical testing work from the American Cyanamid Company. I am enclosing photostatic copies of some of these reports and screen analysis data which we compiled here in New Mexico

If we are able to prove sufficient tonnage from our drilling program we believe the project is economically sound, The following analysis is submitted for your consideration:

METHOD OF MINING

At the present time we do not have sufficient information on the potential ore-body to determine if the deposit can be worked as an open pit or whether an underground operation will be required. If we assume that the deposit will be mined as an underground operation then we propose to drive a 10% incline to the ore body and haul the ore by truck from the mine to the mill.

Based on the past experiences of Potter and Sims we have taken a mining cost figure of $2.00 per ton for mining 1,000 tons per day using the room and pillar method.

ORE DRESSING

The test work completed to date by the American Cyanamid Company shows that we can expect a 90% recovery with a 20% WO_3 concentrate. (See Encl. #1) These tests were made on a sample taken from Upper Dolores Drill Hole #1 at a depth of 375 to 440 feet and contained 0.177% WO_3 calculated heads. Due to the

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO

PHONE: 3-0243

ORE DRESSING cont'd.

occurrence of the scheelite in the cementing material of the breccia we think that additional crushing, abrasive grinding and screening tests will develop a procedure whereby we can discard some 50 to 75% of the mine run ore before flotation treatment. This slough should upgrade the WO_3 content of the ore considerably above the present 0.15% WO_3 with a resultant decrease in tonnage to be treated by flotation. (See Encls: #2 and #3).

We estimate a milling cost of $0.50 per ton of ore mined.

CHEMICAL TREATMENT OF CONCENTRATES

At this time no chemical treatment tests have been completed. The cost of treating a ton of 20% WO_3 concentrates to increase the WO_3 content to 60% is assumed to be $30 per ton of concentrates. If sufficient tonnage is developed it is believed that a "digester". could be built at the property.

CALCULATED RETURNS

1# of WO_3 is worth $3.25 in the form of 60% concentrates.

1,000 tons of crude ore containing 0.15% WO_3 to be mined per day.

90% recovery of 3# (2,000# x 0.15%) gives 2.7# WO_3 recovered per ton

2.7# x 1,000 tons per day = 2,700# WO_3 per day

2,700# WO_3 x $3.25 per pound = $8775 Gross Value per day

20% conc. : 2,700# = 100 : X X = 13,500# of concentrates per day or approximately 7 tons

7 tons of concentrates at 20% WO_3 to be chemically treated to produce 60% WO_3 concentrates at an assumed cost for treatment of $30/ton gives a chemical cost of $210.

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

CALCULATED RETURNS cont'd.

Gross Value of Ore per day		$8,775.
Mining Costs (1,000 tons @ $2.00/ton)	$2,000.	
Milling Costs (1,000 tons @ $0.50/ton)	500	
Chemical Treatment Costs (7 tons @ $30/ton)	210	
TOTAL OPERATING COST PER DAY	$2,710.	

With a Gross Value of $8,775. per day and Operating Costs of $2,710. per day there is a balance of $6065. per day indicated profit to be applied against the initial capital investment.

Very truly yours,

POTTER AND SIMS

G. R. Griswold

G. R. Griswold, Agent

Encls: 3
#1 Am. Cyanamid ltr. 7/18/51
#2 Am. Cyanamid ltr. 12/6/51
#3 Screen Analysis 9/29/51

AMERICAN Cyanamid COMPANY

1937 WEST MAIN ST.
STAMFORD, CONN.

TELEPHONE
STAMFORD 4-6141

July 18, 1951

Potter & Sims
P. O. Box 229
Joplin, Missouri

Attention: Mr. G. R. Griswold

Gentlemen:

THIS LETTER IS BASED ON METALLURGICAL RESULTS OBTAINED IN THE MINERAL DRESSING LABORATORY OF AMERICAN CYANAMID COMPANY ON A SAMPLE OF MATERIAL SUBMITTED BY THE SUBJECT COMPANY. AND ALL RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN APPLY ONLY TO THE TREATMENT OF MATERIAL CONFORMING TO THE SAMPLE SUBMITTED.
NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO CONSTITUTE A PERMISSION OR RECOMMENDATION TO PRACTICE ANY INVENTION COVERED BY ANY PATENT OWNED BY AMERICAN CYANAMID COMPANY OR BY OTHERS. WITHOUT A LICENSE FROM THE OWNER OF THE PATENT. OR OTHER PARTY ENTITLED TO GRANT SUCH LICENSE.

Preliminary flotation tests, on your scheelite ore sample, produced a 20-percent WO_3 concentrate. As was explained in our letter of July 12th, the diluent is chiefly iron-carbonate slime.

The results of the best test, to date, are as follows:

Product	% Wt.	% WO_3	% Distribution
Calc. Head	100.00	0.177	100.00
Pyrite Conc.	4.26	0.033	0.8
WO_3 Conc.	0.79	20.32	90.5
Cleaner Tail	1.47	0.03	0.2
Rougher Tail	93.48	0.016	8.5

A further attempt will be made to produce a higher grade of concentrate, however, we cannot predict the amount of work which might be involved. In the meantime we would appreciate your comments on our letter of July 12th.

Yours very truly,

AMERICAN CYANAMID COMPANY

V F Daughney

V. F. Daughney
Mineral Dressing Laboratory

VFD:rb

Encl: #1

AMERICAN Cyanamid COMPANY

1937 WEST MAIN ST.
STAMFORD, CONN.

TELEPHONE
STAMFORD 4-6141

December 6, 1951

Potter and Sims
P. O. Box 229
Joplin, Missouri

ATT: Mr. G. W. Potter

Gentlemen:

THIS LETTER IS BASED ON METALLURGICAL RESULTS OBTAINED IN THE MINERAL DRESSING LABORATORY OF AMERICAN CYANAMID COMPANY ON A SAMPLE OF MATERIAL SUBMITTED BY THE SUBJECT COMPANY, AND ALL RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN APPLY ONLY TO THE TREATMENT OF MATERIAL CONFORMING TO THE SAMPLE SUBMITTED.
NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO CONSTITUTE A PERMISSION OR RECOMMENDATION TO PRACTICE ANY INVENTION COVERED BY ANY PATENT OWNED BY AMERICAN CYANAMID COMPANY OR BY OTHERS, WITHOUT A LICENSE FROM THE OWNER OF THE PATENT, OR OTHER PARTY ENTITLED TO GRANT SUCH LICENSE.

Mr. Lowe expects to be absent from his office for several days and he has therefore asked us to write directly to you regarding the results of the abrasive grinding tests on your sample of scheelite ore.

Enclosed are the test results and a description of the testing procedures followed, as well as comments on the test products.

It is interesting that the greatest concentration of scheelite, into the minus 10 mesh fraction, resulted from crushing the ore to minus 1 inch; however, you may find that this concentration already existed in the sample which you submitted. We have crushed all of the sample to minus 1 inch and therefore are unable to clarify this point.

Since our abrasive grinding tests resulted in too much breakage and therefore less concentration, it is quite possible that only a slight improvement in the dry crushing may give the degree of concentration which you desire.

With the equipment available here we can extend our investigation slightly, and will run the following tests on the minus 1 inch ore:

(a) Crush the ore to minus 1/2 inch in the jaw crusher and screen on 10 and 14 mesh screens, assaying the products for WO_3 and Au.

(b) Try abrasive grinding using smaller balls of about 1/2 inch diameter. We will also try grinding with no lifter bars in the mill.

Encl. #2

We will repeat the screen test on a sample of minus 1 inch ore as a check on the results already obtained. If the results are substantiated, showing a marked concentration of scheelite in the minus 10 mesh screen fraction, you may wish to compare the breaking characteristics of this ore in various types of crushers. Since a Dodge Jaw crusher is the only type that we have for this work, it is possible that Allis Chalmers, or some other manufacturer of crushing machinery, may be able to do this testing for you.

We would be pleased to have your comments on our test results and any suggestions which you may have for additional tests. We would particularly be interested in your comments regarding the possibility of a concentration of scheelite in the finer sizes of the coarse ore such as you submitted for testing.

Very truly yours,

AMERICAN CYANAMID COMPANY

V F Daughney

V. F. Daughney
Mineral Dressing Laboratory

VFD:KD
Enc.

POTTER AND SIMS, SCHEELITE ORE

ABRASIVE GRINDING TESTS, B1 to B5

PROBLEM 58 - 3151 - 11-15-51

Crushing and abrasive grinding tests on a scheelite ore, submitted by Potter and Sims, were requested by Mr. G. R. Griswold, in his letter dated September 25, 1951. In a letter dated October 19, 1951, Mr. R. H. Lowe made suggestions for conducting the desired tests.

Mr. Lowe requested the abrasive grinding tests to determine the possibility of scuffing the scheelite from the vein or cementing material in the ore and thus concentrating the scheelite in the minus 10 mesh screen fraction.

A 110-pound sample of approximately 3" x 0" ore arrived at the laboratory on October 4, 1951. The entire sample was crushed to minus 1 inch in a laboratory jaw crusher. The ore was thoroughly mixed and riffled into 2000-gram test charges.

One of the 2000-gram samples was taken as a head sample. It was washed on a 10 mesh screen and the plus and minus 10 mesh screen fractions were assayed for comparison with the results obtained by abrasive grinding.

Five grinding tests were run. In each test, excepting Test B1, 2000 grams of minus 1 inch ore were ground at 50 % solids in a laboratory mill. The mill has inside dimensions of 8" diameter by 10" length. The mill was rotated at 43 RPM and 68 RPM in different tests. Three variations in grinding medium were tried. The ball charge consisted of sixteen 1" balls and nineteen 1-3/16" balls, total weight 3350 grams. One rod charge consisted of one 2" rod, weight 3575 grams. Another rod charge was four 1" rods, weight 3600 grams.

The attached table gives the grinding details, the screen results and the assay of the screen products.

The best concentration of scheelite into the minus 10 mesh size seemed to have resulted from crushing the ore, to minus 1", however, it is quite possible that this concentration may have existed in the original sample as a result of blasting or original crushing. We are unable to check this point. In any event the minus 10 mesh fraction represented 30.1 % of the total weight of sample. It assayed 0.65 % WO_3 and contained 75.7 % of the WO_3.

Abrasive grinding with steel balls in Test B1, 2, and 3, resulted in a recovery of 83.3 to 95.8 % of the WO_3 in the minus 10 mesh fractions; however, there was a considerable reduction in the WO_3 assay of the minus 10 mesh fraction, as compared to that of the head sample. In Test B2, the minus 10 mesh size represented 53.3 % of the weight and assayed 0.35 % WO_3 and contained 83.3 % of the WO_3.

Grinding with rods in Tests B4 and 5, resulted in greater breakage and less abrasion, consequently more scheelite remained in the plus 10 mesh size.

In all tests, examination of the plus 10 mesh fraction, under ultra-violet light, revealed scheelite, as coarse crystals, or crystal aggregates, imbedded in the black iron-vein material. Generally, the ore broke along the iron veins but this material resisted abrasion and protected the associated scheelite. The assays revealed that the amount of scheelite in the plus 10 mesh was not as great as was anticipated from inspection under untra-violet light.

V F Daughney

SUMMARY OF RESULTS

ABRASIVE GRINDING TESTS

B1 to B5 Problem 58-3151

Test No.	Grinding Conditions Time	Medium	Wt.	R.P.M.	Mesh	% Wt.	Assay % WO_3	% Distribution WO_3
Feed	Nil				+10	69.9	0.09	24.3
					-10	30.1	0.65	75.7
					Head	100.0	0.259	100.0
1.*	20	Balls 16 1" 19 1-3/16"	3350 grams	43	+10	24.8	0.05	4.2
					-10	75.2	0.38	95.8
					Head	100.0	0.298	100.0
2.	30	as above	as above	68	+10	46.7	0.08	16.7
					-10	53.3	0.35	83.3
					Head	100.0	0.224	100.0
3.	60	as above	as above	68	+10	19.1	0.09	6.6
					-10	80.9	0.30	93.4
					Head	100.0	0.26	100.0
4	30	Rod 1-2"	3575	43	+10	52.3	0.10	35.4
					-10	47.7	0.20	64.6
					Head	100.0	0.148	100.0
5.	30	Rods 4-1"	3600	43	+10	34.0	0.11	14.6
					-10	66.0	0.33	85.4
					Head	100.0	0.218	100.0

* 1600 grams of ore was used in this test (B1)

170

POTTER AND SIMS
1500 LAS LOMAS ROAD
ALBUQUERQUE, NEW MEXICO
PHONE: 3-0243

September 29, 1951

The following are results of crushing and screening tests, run by the undersigned, on a sample of scheelite ore taken from the short drift just north of Upper Dolores Drill Hole #2. The purpose of these tests was to determine if by crushing and screening, a slough could be made.

By crushing to minus ¼" the tests indicate that some 51% can be discarded before the ore is milled. It is believed that abrasive grinding can further increase the percentage of mine-run ore which can be discarded.

TEST # 1 The jaw crusher was set at ½" discharge

SCREEN	% WEIGHT	% WO_3 ASSAY
Plus ¼"	40.0	0.29
Plus 14 mesh	37.7	0.32
Plus 28 mesh	8.9	0.34
Plus 48 mesh	5.8	0.38
Plus 100 mesh	3.8	0.43
Minus 100 mesh	3.8	0.45
	100.0	

TEST # 2 The jaw crusher was set at ¼" discharge

SCREEN	% WEIGHT	% WO_3 ASSAY
Plus 14 mesh	51.0	0.06
Plus 28 mesh	15.5	0.21
Plus 48 mesh	11.5	0.43
Plus 100 mesh	7.7	0.78
Minus 100 mesh	14.3	1.03
	100.0	

The assay work on these samples was performed by Martin & Carlisle Chemical Laboratory Inc., Albuquerque, New Mexico.

G. R. Griswold
G. R. Griswold

Encl. #3

OFFICE OF THE ADMINISTRATOR

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

224 New Customhouse
Denver 2, Colorado

Air Mail

January 16, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, DMEA

From: Executive Officer, DMEA, Region IV

Subject: DMA Docket 1387X, Oritz Mine Grant, Potter and Sims, Santa Fe County, New Mexico

The deposit is of a marginal grade and presents a metallurgical problem. It may be considered advisable to resolve this problem before we submit the final report, hence the delay.

W. H. King

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 18 1952

1-1027
(April 1946)

UNITED STATES
DEPARTMENT OF THE INTERIOR

AGENCY .....

TELETYPE

Originator:
Ext.: ..... Room: .....

Appro.:
Date: 12/28/51
Time:
No.:
To: C. O. MITTENDORF WASH; D.C.

Rotherford, Ellis, Turner

Subject: FINAL REPORT 1387X DELAYED PENDING RECEIPT OF MAPS. REPORT WILL SHOW LARGE LOW GRADE DEPOSIT DEFINITELY SUBMARGINAL. PRESENT METALLURGICAL METHODS WILL NOT MAKE OPERATION ECONOMICAL. FIELD TEAM WILL RECOMMEND THAT APPLICANT BE REQUIRED TO HAVE SUITABLE METALLURGICAL TESTS MADE BY REPUTABLE COMPANY TO DEMONSTRATE RECOVERY TO BE EXPECTED BEFORE LOAN IS APPROVED.

J. H. East Jr.

J. H. EAST, JR.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 2 - 1952

Authorized:

Sign original message and transmit to Room ..... in duplicate

U. S. GOVERNMENT PRINTING OFFICE 16—50915-1

FILE COPY
SURNAME:

Mittendorf (mch)

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

not stripped in R. R.

DEFENSE MINERALS EXPLORATION ADMINISTRATION

5372 4640

December 27, 1951

Mr. J. H. Kast, Jr., Executive Officer, Region IV, 224 New Customhouse Building, Denver, Colorado.
DMA-13871 - Porter and Sims

OUR FILES INDICATE FIELD EXAMINATION THIS CASE REQUESTED JULY 5. NO RECORD INDICATING YOUR REPORT HAS BEEN RECEIVED. ADVISE IMMEDIATELY STATUS FIELD EXAMINATION REPORT.

C. O. Mittendorf (mch)

C. O. MITTENDORF
ACTING ADMINISTRATOR

QLBrewer/
COMittendorf/lm/fw

cc: Admr. Reading File
Mails & Files
COMittendorf
HWGeehan, USBM
D.Lemmon, USGS
G.C.Selfridge
Q.L.Brewer
Docket

SENT
DEC 28 1951
Clerical Service Section

FILE COPY
SURNAME:

Holden

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

Mailed

Mr. J. [illegible], Jr.
Executive Officer, [illegible] Field Office, Section
[illegible] New Customhouse
Denver, Colorado

JUL 5 [illegible]

Subject: [illegible]-1997-[illegible] Tungsten

Dear Mr. [illegible]:

It is requested that you make a field examination of the [illegible] Colorado area, Pitkin Mine Prospect, Santa Fe County, New Mexico and that you analyze the exploration proposal of other [illegible].

The applicants plan to drill [illegible] diamond or churn drill holes totalling 7,[illegible] feet in length, at a cost of $[illegible],000. The block of ground to be explored is [illegible] by 1500 feet. Two churn drill holes were completed; one showed 65 feet of ore between 375 and [illegible] feet which averaged [illegible] percent of [illegible], and the other showed 35 feet of ore between 375 and 460 feet which averaged 0.07 percent. The mineralization is scheelite in [illegible] breccia.

We do not believe it feasible to mine ore of this grade in a fissure at a depth of 375 feet, even at $[illegible] per unit of [illegible]. However, we might consider exploration for this grade of ore to be in the national interest for security, provided the proposal makes good economic sense.

The sampling and assaying of small quantities of tungsten is difficult, and requires special precautions. If you recommend approval of the project, please include recommendations for a suitable sampling. Sampling would then be done where the assays cited by [illegible] and [illegible] were made.

The [illegible] Geological Survey should be asked whether churn or core drilling should be done.

[illegible] a copy of the [illegible] report.

Very truly yours,

[illegible] Lyon,
[illegible]
[illegible], Coordination Committee

Enclosure

CC: Adm. Sending File
Field Team
Mr. Strobel
Mr. Holderer (2)
Mr. Lemmon

Howell B. Moore

DWLemmon/jam

Coor. Committee Files

McKnight
Geological Survey

Bureau of Mines

FILE COPY
SURNAME:

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

JUL 3 1951

G, E. C. Holden Lemmon McKnight Troom Rowe

[illegible]atter and [illegible]ing
P. O. Box [illegible]
Joplin, Missouri

In reply please refer to
[illegible]-130-[illegible] Surveys

Gentlemen:

not stripped in R.R.

We have considered your request for a exploration project to cost $8,[illegible]10 on the Curtis [illegible] Grant, Santa Fe County, New Mexico. In our judgment, it is very doubtful if ore contains only 0.1 to 0.15 percent of [illegible] could be mined successfully at a depth of 600 feet, even at $65 per unit of [illegible], a price which very likely will not prevail after 5 years. However, information about subterranean mineralization is of interest to the Government, and we are prepared to consider your application after receiving a report from the field team.

We have requested Mr. [illegible] [illegible], Jr., Executive Officer, [illegible] Field Team, Region IV, [illegible] Customhouse, Denver, Colorado to arrange for a field examination. We have also asked him to advise about the relative merits of churn and core drilling, and about sampling and assaying procedures.

Very truly yours,
Tom Lyon

Tom Lyon
Director, [illegible] Division

DMLemmon/jum

CC: Adm. Pending File
Field Team, Region IV (2)
Mr. Strobel
Mr. Holderer (2)
Mr. Lemmon
Files

July 3, 1951

Index of File Sent to Field Team
Region IV

DMA-1387-X
Tungsten
Potter & Sims
P. O. Box 229
Joplin, Missouri

2 Copies Form MF-100
2 Copies Form MF-103
2 Copies Key Map-Exhibit "A"
2 Copies Lease and Assignment-Exhibit "B"
2 Copies Financial Statement-Exhibition "C"
2 Copies Base Map, Scale 1"=100'

FILE COPY
SURNAME:

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

June 14, 1951

Mr. George W. Potter
Potter & Sims
P. O. Box 229
Joplin, Missouri

Subject: DMA-1387X
Re: Exploration loan
Ortiz Mine

My dear Mr. Potter:

Receipt is acknowledged of your application and attachments of May 31, 1951 for an exploration loan under the Defense Production Act of 1950.

The application was assigned Docket Number DMA-1387X and was referred to Mr. F. R. Bradley, Chief, Tungsten Branch on June 1, 1951.

In any future correspondence relating to your application, kindly refer to DMA-1387X.

Sincerely yours,

LANDON F. STROBEL

Landon F. Strobel
Executive Secretary

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Joplin, Mo.

May 29, 1951

Mr. George W. Potter,
Potter and Sims,
P. O. Box 229,
Joplin, Mo.

Dear Mr. Potter:

This is to acknowledge receipt of your exploration application on the Ortiz Mine Grant in New Mexico, which I am forwarding today to Washington. I have examined the application with your agent, Mr. Gilbert R. Griswold, and find it in excellent order.

Very truly yours,

M. Howard Berliner
For David Gallagher

cc: Defense Minerals Administration,
Washington 25, D. C.

POTTER AND SIMS

GEO. W. POTTER

P. O. BOX 229

DEWEY SIMS

JOPLIN, MISSOURI

May 29, 1951

DM 4
1387X

Defense Minerals Administration
United States Department of the Interior
Joplin, Missouri

Gentlemen:

Submitted herewith is an Application for Aid for an Exploration Project pursuant to Mineral Order 5, under Defense Production Act of 1950.

This tungsten project is located on the Ortiz Mine Grant, Santa Fe County, New Mexico.

Very truly yours,

POTTER AND SIMS

George W. Potter

George W. Potter

Enclosures in Quadruplicate
- Form MF-100
- Form MF-103
- Key Map - Exhibit "A"
- Lease and Assignment - Exhibit "B"
- Financial Statement - Exhibit "C"
- Base Map, Scale: 1" = 100'

Save for
400- File

MEMORANDUM

To. W.S.Martin, Chief, Iron and Ferro-Alloys Division, DMEA

From. T.L.Chapman,. Mining Engineer, Iron and Ferro-Alloys Division, DMEA

Subject Docket No.DMA 1387. Tungsten. Contract No. Idm-E-310
Potter and Sims, Cunningham Hill Area, Ortiz Mine Grant
Santa Fe County, New Mexico.

Summary of possible ore tonnage and values.

Accompanying sketch shows possible area of mineralization and depth of same.

Assumed area amounts to 660,000 square feet and with a vertical range of 250 feet would give a total of 165,000,000 cubic feet. Allowing 12 cubic feet to the ton the possible mineralized area would amount to 13,750,000 tons.

The average values for the 5 diamond drill holes in this area are 0.046 percent WO_3 and 0.019 ounces in gold. It is possible this area would show some small values in copper and molybdenum that would have a bi-producr value.

0.046 percent WO_3 or 0.92 pounds at $3.25 per pound.	$2.99
0.019 ounces gold at $35.00 per ounce.	.66
Gross value	$3.65

This area could be mined by open pit with a ratio of 1 ton of ore to 2 tons of waste. The cost of mining should not exceed $0.75 per ton. Milling and other costs would amount to about $1.25 per ton or a total of $2.00 per ton.

A value of $3.65 per ton with an 80 percent saving leaves $2.92 per ton. This would leave a possible profit of $0.92 per ton before taxes and amortization.

Thos.L.Chapman

Potter and Sims. Docket No. DMA 1387. Contract Ldm-E310
Santa Fe County, New Mexico

Diamond Drill Holes				Assays			
Hole No.	From	To.	Feet	Au.ozs.	Cu. %	WO_3 %	Lbs.WO_3
1	4'	150'	146)	0.021		Tr.	
			46		0.73		
			50		0.06		
	299'	309'	10'			0.06	1.20
	499	508	9'			0.03	0 .6
2	25'	293'	268	Tr.	Tr	0.036	0.72
3	49'	151'	102	Tr.		0.026	0.52
	202'	309'	107	Tr.		0.052	1.04
4	9'	262'	253'	0.013		0.059	1.18
5	27'	188'	161	0.0736		0.0751	1.502
	188'	338'	150	0.022		0.046	0.92
	27'	338'	311	0.0486		0.0611	1.222
6	1'	96'	95	0.0476		0.0466	0.932
	96'	188'	92'	~~0.0137~~ 0.0137		0.0272	0.544

6550'

7 holes AX

72
65-50
65'0

72 65
65-50
715

1100
71-00
65-50
55-0

No-1 (14) 564
2 (16) 560 (300)
3 (7) 570
4 (7) 650 (300)
5 ( ) 650
6 ( ) 675 (300)
7 (715

7) 4384 3401
626 0

4384
3401

7,882
3401
4481

Your comments on the contract, herewith included in rough draft form, are solicited.

Potter & Sims DMA-1387 X

R & P method underground 2.00/ton,
0.177% WO_3 cal. head. 90% recovery?, 200% income, by Lynnwood.

Milling 0.50/ton? $30/ton for upgrade 20 to 60
Concentration by panning. Concentration on bottom of shown small holes. Bulk sample to Tucson for low DMEA Field Assn. $2.00 low. 2 shown holes to 65' of 3.06 lb. WO_3 & 95' of 1.8 lb. Ground mineralized on bottom - 85 and - 20 ft. Both holes 1.3 lb/ton $0.50 M low $FeCO_3$ 9,000,000 tons under 40 acres, 65' high.
50,000,000 tons with 1.0-1.5 lb/ton 14 yrs at 10,000/day or 3,500,000/yr. 30 acres.
F.T. report. How much WO_3 in area of 700,000 F.T. of 2,450,000 T of 2.77 Au.
Entire breccia WO_3 bearing possibility. $4.20/ton. 50% recovery would not be economic.
Recommend $80,000 project.
Geological section of report.
breccia with fragments of many kinds, intrusion volcanics & sediments NE dip NW.
clastic breccia pipe-like. Some agmatite at each end of breccia? values confined to zone of clastic breccia. Carbonate W concentrated with FeS_2 gossans. No reserves
No overburden except in arroyos, 25-30'. waste 5-10% of mineralized zone. Appreciable Au values found only in oxidized zone.
Approach holes 400-770' deep. F.T. + 300'
Dont concentrate holes F.T. ~~[illegible]~~ drill 10+12 move 10+13 to south. OK

Potter & Sons DMA-1387X

Move 5 & 6? Move 4, 8 & 9 on edge, Don't drill 15.
Maximum of 5 holes before stoping
Where did samples sent to Tucson come from.

Section by Bureau.

Former examiners show areas of waste rock. Re-
lationship between FeS_2 & Au? Au ~~and~~ com-
~~pared~~ in O-zones. Probably Au would be concentrated
except one area ← No WO_3 assays in this area. Why?
Hole 1. 355' of 1.26 lbs WO_3/ton.
2 430' " 1.35 " WO_3/ton
Recommend 13, 14, 15, & 16 first, sample dumps etc. No
2 stages of drilling.
No penalty elements assays show appear.
See conclusions.
No mention made of setting in holes.
Drill holes are caving here.

DMA 1387 Idm-E 310 WO3

Dated May 6, 1952 (12 Mo.) Expires ~~May~~ 6, 1953
Start 30 days Started June 1, 1952
Run 12 Mos.
Loan $77,520.00 — 75% - $58,140.00
Cunningham Hill Mang. Dep.
Orty Mine Grant
Santa Fe County, N. Mex.

Amendments

#1, 6/23/52, effec 6/6/52 - permitted rental of tractor with bulldozer blade @ $8/hr.

#2, 7/29/52, effec. 6/16/52 - changes exhibit A - operating equip to be furnished by operator

DMA-1387, E 310, Amend. #1, #2.

PROJECT No. DMA 1387 TUNGSTEN, POTTER & SIMS. SANTA FE COUNTY NEW MEXICO.

CONTRACT. 1DM-E310. $77,520.00 GOV'T. PARTICIPATION 75%. $58,140.00 STAGE I D.D. CONTRACTS $28,000.00 } ROADS $4,000.00
STAGE II D.D CONTRACTS 28,000.00

RESUME OF PERFORMANCE

MONTH	WORK	FEET ADVANCE MONTH	FEET ADVANCE TO DATE	COST MONTH	COST TO DATE	WAGES	EQUIPMENT	SUPPLIES	OTHER	CONTRACT	MONTH	TO DATE
JUNE 1952	ROADS & TRAILS			201246	201246	91441	75607	21816	12822			
JULY 1952	" "			25000	226246	24468			532			
JUNE 1952	DIAMOND DRILLING			12374	12374		12374					
JULY 1952	" "	954	954	692900	705274	70924	3500	28332	13934	577010	7.26	7.26
AUG. 1952	" "	991	1945	736197	1441471	88799	3500	5611	28447	673640	7.43	7.41
SEPT. 1952	" "	940	2885	849212	2290683	93457	3500	6234	56946	689075	9.03	7.94