DMEA Form 9
Rev. 6/57

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE — Idm-E NO. 3060 — DMEA NO. 638

Application
- [ ] Denied
- [ ] Withdrawn

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

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

Folder No. 1:

Left Side

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

Right Side

- [x] Project summary (final)
- [x] Work Completed analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [ ] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [x] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam Report (Tab)
- [x] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. 2 : Reports
- [x] Analysis of Semi-Annual Inspection Reports + F.T. Semi Annual Rept.
- [ ] Project Summary (Interim) by DMEA Engineers

Right Side

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

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

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty material

17963

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Washington office pertaining to Contract Idm-E638, Docket DMEA-3060 (uranium), dated November 13, 1953, with

Vance Elton Thornburg, d/b/a Thornburg Mining Company
140 West Main
Grand Junction, Colorado
and his assignee
Thornburg Uranium Mines, Inc.

for the purpose of determining the amount of royalty payable to the U. S. Government on sales of minerals from property referred to as the Shinarump Group of Claims located in Grand County, Utah, during the period October 18, 1960, through November 15, 1963.

A certification of discovery or development was issued on June 22, 1956, and, in accordance with Annex II and Amendment No. 3 of the contract, royalty is payable on all minerals produced from the land described in Article 2 of the contract for a period of 11 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review dated June 25, 1956, indicated accepted costs under the exploration contract amounting to $32,848.40 with the Government's contribution on a 90 percent basis being $29,563.56. 1967

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

This review found no sales subject to the Government's royalty subsequent to the period covered by a prior Report of Royalty Review which found the sales subject to the Government's royalty through October 17, 1960, to be $13,758.50. The royalty account as of October 17, 1960, was:

Total Royalty Payable	$674.32
Total Royalty Paid	687.93
Overpayment of Royalty	$ 13.61

As of November 15, 1963, the royalty account of this project was found to be:

Total Royalty Payable	$674.32
Total Royalty Paid	687.93
Overpayment of Royalty	$ 13.61

November 22, 1963

E. D. Talbert, OME Auditor

Idm-8638 Thornburg Uranium Mines, Inc., Assignee DMEA-3060

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

This contract provides that the Operator or his successor in interest shall pay to the Government a percentage royalty on all minerals produced from the land thereunder. The land consists of 6 unpatented claims (Shinarump Nos. 1, 1A, 3, and 4, Vance Thornburg, and Gara No. 1) in T. 24 S., R. 20 E., S.L.M., Seven Mile area of the Green River Mining District. At the time the contract was executed the Operator was the owner by location. The contract contains the so-called "abandonment" clause.

By mining deed dated September 14, 1954, the property was conveyed to Thornburg Uranium Mines, Inc., and on April 28, 1955, the Government consented to assignment of the exploration contract without releasing the Operator-Assignor, who was the Operator-Assignee's president, from any of the provisions thereof. Exploration work under the contract was discontinued during June 1955, the mine was shut down in August 1955, and a Termination Agreement effective March 13, 1956, was executed May 28, 1956.

Production during the exploration period consisted of 493.702 S.D.T. of ore averaging .2064% U_3O_8. Production thereafter consisted solely of a May 1957 shipment of 3.1 S.D.T. of 8.54% U_3O_8, a June 1958 shipment of 84.1955 S.D.T. of .13% U_3O_8, and a July 1958 shipment of 73.5265 S.D.T. of .18% U_3O_8. These shipments, on which proceeds aggregated $13,758.50, are covered by Reports of Royalty Review dated October 13, 1958, and October 26, 1960. An aggregate of $13.61 was overpaid in royalty due to computations on three liquidations (A.S. & R. Nos. 6064 and 7462 and Pitkin No. 4645) at a 5% royalty rate when lesser rates were applicable.

Examinations of the property, checks of A.E.C. production records, and inquiries by regional DMEA and OME representatives disclosed no unreported production through December 31, 1959. By April 24, 1962, and September 9, 1963, replies to MME Forms 63 inquiries the Operator-Assignee's bookkeeper and accountant, J. T. Tunnell, who was the Operator-Assignor's office manager, advised that neither production nor change in property status had occurred since January 1, 1960.

By letter dated November 15, 1963, the Operator-Assignor advised that: (1) the Operator-Assignee "is a dormant corporation and is inactive"; (2) the claims reverted back to the Operator-Assignor

in 1960; (3) the Operator-Assignor "has kept the claims in good standing by doing the assessment work since that time"; and (4) "there has been no ore production".

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

(1) The files indicate that no production from the property has occurred since 1958;

(2) All production from the date of the contract through 1958 has been reported; and

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

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OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Office of Minerals Exploration, Washington, D. C., pertaining to Contract No. Idm-E638, Docket No. DMEA-3060 (Uranium), dated November 13, 1955, with

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

for the purpose of determining the amount of royalty due the U. S. Government on sales of minerals from property referred to as Shinarump group of claims located in Grand County, Utah, during the period October 11, 1958, through October 17, 1960.

A certification of discovery or development was issued on June 22, 1956, and, in accordance with Annex II and Amendment No. 3 of the contract, royalty is payable on all minerals mined or produced from the land described in Article 2 of the contract for a period of 11 years from the date of the contract or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first. A Report of Review in lieu of final audit dated June 25, 1956, indicated accepted costs under the exploration contract amounting to $32,848.40 with the Government's contribution, on a 90 percent basis, being $29,563.56.

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

This review established the total sales of uranium ore for the period to be $1,254.46. Royalty due the Government at rates specified in the contract is $62.72.

A prior Report of Royalty Review found the sales subject to Government royalty through October 10, 1958, to be $12,504.04 which added to the sales for this subsequent period make a total of $13,758.50. The royalty account as of October 10, 1958, was:

Total Royalty Due	$611.60
Total Royalty Paid	602.02
Balance of Royalty Due	$ 9.58

At October 17, 1960, the royalty account of this project was found to be:

Total Royalty Due	$674.32
Total Royalty Paid	687.93
Overpayment of Royalty	$ 13.61

October 26, 1960

C. E. Fisher

C. E. Fisher, OME Auditor

STATUS OF PROJECT, SCOPE OF REVIEW
AND REASONS THEREFOR

There has been no production from this property since July 1958. The royalty received during the period covered by this review was applicable to Lucius Pitkin, Inc., liquidation No. 4712, settled July 11, 1958, plus an adjustment of royalty previously paid on liquidation No. 4645 from that company as set forth in the prior Report of Royalty Review. This adjustment was computed on basis of 5% royalty being due the Government whereas the correct royalty rate is 4%. Also, no adjustment was made in connection with overpayments of royalty on A.S.& R. Co. liquidations Nos. 6064 and 7462 set forth in the prior review.

A summary of production, sales and royalty due and paid, together with analysis of overpayments of royalty, is shown on the attached Exhibit "A".

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

(1) Inspection reports by field representatives of the Government and other documents in the Washington office files indicate that all production from the property since the date of the exploration contract has been accounted for and proper royalty has been paid, except as indicated on Exhibit "A"; and

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

Exhibit "A"

Idm-E638 | Thornburg Uranium Mines, Inc. | DMEA-3060

Summary of Production, Sales and Royalty

Purchaser	A.S.&R. Company	Union Carbide Nuclear Co.	Lucius Pitkin, Inc.	Total
Period	11/13/53 to 6/30/55	7/1/55 to 6/4/57	6/5/57 to 10/17/60	11/13/53 to 10/17/60
Production				
Ore - Short Wet Tons	512.85	3.14	163.18	679.15
Ore - Short Dry Tons	493.70	3.10	157.72	654.52
U_3O_8 - Pounds	2,058.30	529.34	483.61	3,051.25
" - " excess 4#/SDT	195.62	516.94	-	712.56
" - " " 10#/SDT	-	498.34	-	498.34
V_2O_5 - Pounds	-	18.60	-	18.60
Sales				
U_3O_8 - Base payments	$6,731.10	$1,852.69	$1,280.26	$9,864.05
" - Excess 4#/SDT	146.71	387.71	-	534.42
" - Excess 10#/SDT	-	124.59	-	124.59
V_2O_5	-	5.77	-	5.77
Development allowance	1,019.15	264.67	241.80	1,525.62
Haulage allowance	2,147.28	47.10	655.96	2,850.34
Time penalty	(1,146.29)	-	-	(1,146.29)
Total Receiving Stations	$8,897.95	$2,682.53	$2,178.02	$13,758.50
AEC production bonus		Not eligible		
Total value subject to royalty	$8,897.95	$2,682.53	$2,178.02	$13,758.50
Royalty Due	$ 440.55	$ 134.15	$ 99.66	$ 674.32
Royalty Paid	444.90	134.15	108.90	687.93
Overpayments	4.37	-	9.24	13.61

Computation of Overpayments

Liq.No.	Purchaser	SDT	Value	Per SDT	Royalty Due %	Royalty Due Amount	Royalty Paid %	Royalty Paid Amount
6064	A.S.&R.	19.44	$195.61	$10.06	3½	$ 6.85	5	$ 9.78
7462	A.S.&R.	25.68	288.84	11.25	4½	13.00	5	14.44
4645	Pitkin	84.20	923.56	10.97	4	36.94	5	46.18
			Totals			$56.79		$70.40
			Overpayment			13.61		
						$70.40		

MME Form 22
April 59

DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration

OFFICIAL FILE COPY
O. M. E.
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DATE | CODE

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name Thornburg Uranium Mines Inc.

Address 160 West Main Street

Grand Junction, Colorado

Exploration Contract No. E 638

Docket No. DMEA 3060

			Check One Yes	Check One No
1.	(a)	Does the Operator stockpile ore subject to royalty repayment?		X
	(b)	If so, is segregation and identification procedure adequate?		
2.	(a)	Does Operator commingle production subject to DMEA or OME royalties with exempt production?		X
	(b)	If so, do you consider the allocation of the commingled production equitable?		
3.	(a)	Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		X
	(b)	If so, are adequate records maintained on such material to protect the Government's interest?		
4.		Do you consider the assay controls in effect are adequate?	X	
5.		Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	X	
6.		Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA or OME royalties?	X	
7.		Does the Operator buy from or sell to other Operators?		X
8.		Comment on any item 2 (b) to 6 if answer is No.		

10-17-60
Date

TMR

Mining Engineer
for Hugh M. Connors

DMEA FORM 6 REFERENCE SLIP

REV. 12-56 DEFENSE MINERALS EXPLORATION ADMINISTRATION

TO:	INITIALS	DATE
1. Mr. Johnson	FLJ	10/24
2. Mr. Selfridge		
3. Mr. ~~Knouse~~ Chiang		
4.		
5.		
FROM: J. L. Chambers		10/24

FOR: Check items for action desired

____ Action ____ Reply for signature of _____

____ Approval ____ Investigate ____ Surname

____ Comment ____ Recommendations ____ Signature

____ Conference ____ Rewrite ____ File

____ Instructions ____ Your information

REMARKS:

OFFICE OF MINERALS EXPLORATION
CONTRACT ADMINISTRATION AND AUDIT DIVISION

REPORT OF ROYALTY REVIEW

I have reviewed the files of the Executive Officer, OME Field Team, Region III, Denver, Colorado, pertaining to Contract Idm-1638, Docket No. DMSA 3060 (Uranium) dated November 13, 1953, including Amendments Nos. 1 through 4, with

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

for the purpose of determining the amount of royalties due the United States Government on the sale of Uranium bearing ores produced from the Shinarump group of claims located in Grand County, Utah, during the period November 13, 1953 through October 10, 1958.

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

My review established the total sales of Uranium bearing ores for this period to be $12,504.04. (See Schedule No. 1 attached.) Royalty due the United States Government at the contract rates of 3.5 to 5 percent is $611.60. The royalty paid and the balance due are as follows:

Total Royalty Due	$611.60
Total Royalty Paid	602.02
Balance of Royalty Due (See Schedule No. 2)	$ 9.58

Donald T. Finch

Donald T. Finch, OME Auditor

October 13, 1958

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OCT 24 1958
O.M.E.

STATUS OF THE PROJECT, DESCRIPTION OF REVIEW
AND [illegible]

CONTRACT NO. Idm-2638 DOCKET NO. DMM 3060

The exploration work under the contract has been completed. A Certificate of Discovery or Development was issued on June 22, 1956, and in accordance with the contract, royalty is payable on the net smelter returns or other net proceeds realized from production as a result of such discovery or development during a maximum period of 11 years from the date of the contract. A Report of Review in lieu of final audit dated June 25, 1956, indicated accepted costs of $32,848.40, with Government's contribution on a 90 percent basis being $29,563.56. Production since June 30, 1955 has been intermittent. The A.E.C. production bonus tonnage had all been produced prior to the date of the Exploration Contract.

My review included a tabulation and recomputation of all ore settlement sheets in the files of the Executive Officer, GSS Field Team, Region III, for the period November 13, 1953 through October 10, 1958, and correspondence with the Chief of Accounting Branch, Finance Division, Field Operations Office, Atomic Energy Commission, Grand Junction, Colorado.

The producer's reported sales were reconciled with the production records maintained by A.E.C. Royalties paid were reconciled with the GSS Finance Office, Denver, Colorado.

The review was made in lieu of an on-site audit of the producer's accounts for the following reasons:

(a) All reported production was reconciled with records of the Atomic Energy Commission.

(b) The Examining Engineer is of the opinion all sales of production are accounted for.

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

Schedule No. 1

THORNBURG URANIUM MINES, INC.

CONTRACT I&m-E638

DOCKET NO. RMSA 3060

SUMMARY OF PRODUCTION, SALES AND ROYALTIES

Purchaser	A. S. & R. COMPANY	UNION CARBIDE NUCLEAR COMPANY	LUCIUS PITKIN, INC.	TOTAL
Period	11/13/53 to 6/30/55	7/1/55 to 6/4/57	6/5/57 to 10/10/58	11/13/53 to 10/10/58
Gross Weight, Pounds	1,025,650	6,280	176,320	1,208,250
Dry Weight, Pounds	987,404	6,198.36	168,391	1,161,993.36
Dry Weight, Tons	493.7020	3.1000	84.1955	580.9975
Assays: (Average)				
U_3O_8	.2064	8.5400	.1300	.2398
V_2O_5	.30	-	-	Trace
Pounds U_3O_8	2,038.30	529.34	218.91	2,786.55
Base Payment U_3O_8	$6,731.10	$1,852.69	$459.71	$9,043.50
Development Allowance	$1,019.15	$ 264.67	$109.45	$1,393.27
Premiums				
Excess of 4 lbs. U_3O_8 per Ton				
Excess Pounds	195.62	516.94	-	712.56
Amount @ 75¢ per lb.	$ 146.71	$ 387.71		$ 534.42
Excess of 10 lbs. U_3O_8 per Ton				
Excess Pounds	-	498.34	-	498.34
Amount @ 25¢ per lb.	-	$ 124.59	-	$ 124.59
Haulage Allowance				
Gross Weight, Tons	512.825	3.140	88.1600	604.125
Haulage Allowance per Ton	4.19	15.00	4.02	4.22
Amount of Haulage Allowance	$2,147.28	$ 47.10	$354.40	$2,548.78
Lime Penalty	$1,146.29			$1,146.29
Pounds V_2O_5	-	18.60	-	18.60
V_2O_5 Payment	-	$ 5.77	-	$ 5.77
Total Value Subject to Royalty (No AEC Production Bonus Available)	$8,897.95	$2,682.53	$923.56	$12,504.04
Average Value per Dry Ton	$ 18.02	$ 865.33	$ 10.97	$ 21.52
Average Royalty Percentage	4.92%	5%	4%	4.89%
Total Royalty Due	$ 440.53	$ 134.13	$ 36.94	$ 611.60
Total Royalty Received	444.90	134.13	22.99	602.02
Balance of Royalty Due (See Schedule No. 2)	$ 4.37	$ 0.00	$ 13.95	$ 9.58

The last liquidation settlement sheet in above is Lucius Pitkin, Inc. No. 4645 dated 6/16/58

The last Certificate of Deposit in above is No. 59-4 dated 7/9/58.

Schedule No. 2

THORNBURG URANIUM MINES, INC.

CONTRACT NO. Idm-E638 DOCKET NO. EMRA-3060

SCHEDULE OF BALANCE OF ROYALTY DUE

Date	Purchaser	Liquidation Settlement No.		
1954 9/9	A. S. & R. Company	6064	$ 2.93	
1955 4/20	A. S. & R. Company	7462	1.44	
1958 6/16	Lucius Pitkin, Inc.	4645	13.95	
	Total Balance of Royalty Due			$9.58

CHECK SHEET OF EXAMINING ENGINEER

Operator's Name Thornburg Uranium Mines, Inc.
Formerly Thornburg Mining Company

Address 160 West Main Street

Grand Junction, Colo.

Exploration Contract No. Idm-E 638

Docket No. DMEA 3060

	Check One	
	Yes	No
1. (a) Does the Operator stockpile ore subject to royalty repayment?		✓
(b) If so, is segregation and identification procedure adequate?	—	—
2. (a) Does Operator commingle production subject to DMEA royalties with exempt production?		✓
(b) If so, do you consider the allocation of the commingled production equitable?	—	—
3. (a) Does the Operator stockpile mine or mill rejects (low grade ore, tailing, middlings, etc.) that may have potential value within the royalty payment period?		✓
(b) If so, are adequate records maintained on such material to protect the Government's interest?	—	—
4. Do you consider the assay controls in effect are adequate?	✓	
5. Do you consider that the manner of disposing of production gives the Government its fair royalty returns?	✓	
6. Do your periodic examinations of operations indicate the Operator is properly reporting his production of ores subject to DMEA royalties?	✓	
7. Does the Operator buy from or sell to other Operators?		✓
8. Comment on any item 2(b) to 6, if answer is No.	—	—

Date 10/13/58

H. J. Robertson
Mining Engineer

Docket Copy

Ching
Lip
Gubin
Chamberlin
Appd. Sol. Off.
Paone
Crawford
Kielsgaard
Yopes
Martin
Johnson

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

To: Thornburg Uranium Mines, Inc.
160 West Main
Grand Junction, Colorado

Pursuant to the provisions of Exploration Project Contract No. Idm-2638, dated November 13, 1953, (Docket No. DMEA-3060), hereinafter called the "contract," between the Thornburg Uranium Mines, Inc., a corporation, and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien therefor and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

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

Drifting, crosscutting, and long-hole percussion drilling on the land described in Article 2 of the contract, encountered erratically-distributed uranium mineralization of ore grade in three or more lime pebble conglomerate beds in the lower 30 feet of the Triassic Chinle formation.

Dated: JUN 22 1956

THE UNITED STATES OF AMERICA

By C. Mittendorf
Administrator, Defense Minerals
Exploration Administration

MChing/gla/ism 6-15-56
cc to: Operator (original)
Contract Adm. & Audit Div.
DMEA Field Team, Region III (2)
Finance Office
Docket
Rare and Misc. Metals Div.
Admr.'s Reading File
Operating Committee
Robert W. Geehan, Rm. 3608
T. H. Kiilsgaard, Rm. 5224
F. E. Johnson
Mr. Murphy Ching

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Date	Surname.	Code
	[illegible]	120
3/30	Murphy	120 M
"	Johnson	110
	[illegible]	100
		220

MAR 3 1 1965

Thornburg Mining Company
P. O. Box 80
New Almaden, California 95042

Re: DMRA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-2638

Gentlemen:

Thank you for your check in the amount of $1,352.20.

By the terms of the subject Exploration Project Contract, as amended, and the certification of discovery or development dated June 22, 1956, all minerals mined or produced from November 13, 1953, to November 13, 1965, were subject to the Government's royalty as set forth in said contract.

As the period during which production was subject to royalty has now expired, the Government according to its present records retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

Sincerely yours,

George Fumich, Jr

Acting Director

MMerrithew/mm (3/30/65)
cc: Director's Reading File
Region III
CA&A Division
Docket
120M

23263

[redacted]

REPORT OF REVIEW

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I have reviewed the Monthly Reports of:

Young Thompson, d/b/a Thompson Mining Company
Assigned to
Thompson Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colo.

pertaining to Exploration Project Contract No. Ida-2658, Docket No. DMEA-3060, including Amendments Nos. 1 to 4, and Termination Agreement dated May 28, 1956, for the period from January, 1954 to June, 1955, covering a project for the exploration of Uranium on property known as Shimmeny Claim located in Grand County, Utah.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, consultation with the Executive Officer, DMEA Field Team, and a determination of the reasonableness and propriety of the costs.

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

> All of the costs incurred were under a contract provision for payment by the Government on the basis of agreed estimated costs of units of work actually performed.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor		$32,846.40
Exceptions:		
By DMEA Finance Officer	$0.00	
Herewith	0.00	0.00
Total Accepted Cost		$32,846.40

The contract calls for a 90 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of Twenty-nine thousand, five hundred sixty-three and 56/100ths Dollars

** $29,563.56 **

is considered valid and proper, provided that the Regional Executive Officer, The Administrator, or other competent official has accepted or will accept the the project as having otherwise met the terms of the contract.

June 28, 1956

T. H. Bradley, Auditor

Audit Report of Review

Docket copy

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MAY 1 1956

Martin
Chung
Selfridge
Chamberlin
Mattendorf

TERMINATION AGREEMENT

It is agreed this 28th day of May, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Thorenburg Uranium Mines, Inc., Assignee, hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-2618 (Docket No. DMEA-3040), dated November 13, 1955, hereinafter called the "Contract," that:

1. Effective April 13, 1956, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to June 30, 1955.

3. The Operator shall promptly perform all winding-up and settlement actions provided for in the Contract, including the rendering of the final report and final account, and shall keep and preserve records as required by the Contract.

4. All rights of the Government provided for in the Contract with respect to a certification of discovery or development and a percentage royalty and lien for its payment are preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

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

THE UNITED STATES OF AMERICA

By [signature]
Acting Executive Officer
DMEA Field Team, Region III

THORENBURG URANIUM MINES, INC., Assignee

By [signature]

Title Vice President

Docket copy

MAY 16 1955

ASSIGNMENT OF CONTRACT

WHEREAS, Vanee Elton Thornburg, d/b/a Thornburg Mining Company (hereinafter called the "Assignor"), entered into Exploration Project Contract Idm-8638 (Docket No. DMEA-3060), dated November 13, 1953, as amended (hereinafter called the "Contract"); and

WHEREAS, Thornburg Uranium Mines, Inc., a State of Delaware corporation (hereinafter called the "Assignee"), has acquired the Assignor's interest in the land which is the subject of the Contract and the Assignee desires to complete the work under the Contract;

NOW THEREFORE, the Assignor, in consideration of the sum of One Dollar ($1.00) and other good and valuable consideration received from the Assignee does hereby assign, transfer, and convey to the Assignee all of his right, title, and interest in the Contract: Provided, That the Government shall make payment to the Assignor for all work performed prior to June 1, 1955, and upon payment thereof the Government shall be and is hereby released by the Assignor from all claims under the Contract.

The Assignor consents to all future amendments and assignments of the Contract and waives notice thereof.

This Assignment is subject to the execution by the Assignee of the acceptance form set forth below and to the written consent of the Government.

Dated this 9th day of May, 1955.

THORNBURG MINING COMPANY

By Vance Thornburg (Seal)
(owner)

ASSIGNEE'S ACCEPTANCE

The Assignee, Thornburg Uranium Mines, Inc., hereby accepts the above Assignment and agrees to be

bound by the terms, provisions, and conditions of the Contract.

Dated this 9th day of May, 1955.

THORNBURG URANIUM MINES, INC.

By Vance Thornburg
(President)

I, J. T. Tunnell, J. T. Tunnell, certify that I am the Assistant secretary of the corporation named herein; that Vance Thornburg who signed this instrument on behalf of the corporation, was then President of said corporation; that said instrument 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.

GOVERNMENT'S CONSENT

The Government, this 28th day of April, 1955, hereby consents to the above assignment without releasing the Assignor, Vance Elton Thornburg, from any of the terms, provisions, and conditions of the Contract.

THE UNITED STATES OF AMERICA

By C. M. Mitchell
Administrator, Defense
Minerals Exploration
Administration

Author
Hoffmann
Abud. Sol. Off.
Strong
Ellis
Chambers
Selfridge
Fryklund

G.J.B. Gubin 10/14/5

No. 4

AMENDMENT TO CONTRACT: No. 16m-8658

Contract Docket No. DMA 3060, dated November 13, 1953, between the United States of America and Thornburg Uranium Mines, Inc., is hereby amended as follows, effective as of the date of the contract:

> Referring to "Article 3. Exploration project" of Exploration Project Contract Form MP-200(A) (February, 1952), following the words "and shall bring the project to completion within a period of" delete "twenty-two (22) months," as provided by Amendment No. 3, and in lieu thereof substitute "twenty-eight (28) months."

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 September 30, 1955

THORNBURG URANIUM MINES, INC.

By Vance Thornburg
Vance Thornburg, President

UNITED STATES OF AMERICA

By W. M. Jones
W. M. Jones, Executive Officer,
DMA Field Team, Region III

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No. 3

AMENDMENT OF CONTRACT: No. Idm-2658

Contract Docket No. DMEA 3060, dated November 13, 1953, between the United States of America and Vance Elton Thornburg, dba Thornburg Mining Company, is hereby amended as follows, effective as of the date of the contract:

> Referring to "Article 3, Exploration project" of Exploration Project Contract form MF-200(A) (February, 1952), following the words "and shall bring the project to completion within a period of" delete "sixteen (16) months", as provided by Amendment No. 2, and in lieu thereof substitute "twenty-two (22) months".
>
> Referring to Annex II which is in lieu of Article 6 of contract form MF-200(A) (February, 1952), item "b(2)", the words "for a period of ten years" is changed to read "for a period of eleven years".

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 APR 5 1955

THORNBURG MINING COMPANY

By Vance Elton Thornburg
Vance Elton Thornburg

UNITED STATES OF AMERICA

By W. M. Traver
W. M. Traver, Executive Officer, DMEA Field Team, Region III

February 23, 1955

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

Re: Docket DMEA 3060 (Uranium)
Contract I3m-E-638

Dear Mr. King:

Due to the fact that the extended time period under our Exploration Project Contract will expire on March 13, 1955, we believe it will be necessary to request an additional time period in order to complete the work as outlined in the above stated Docket-Contract.

We would like at this time to request an extended time period of six (6) months which we believe will give us ample time to finish Stage II of theproject.

Very truly yours,

J. T. Tunnell
Office Manager

JTT:bp

No. 2

Rutan 11/5/54

OCT 18 1954

AMENDMENT OF CONTRACT: No. Idm-E638

Contract Docket No. DMEA 3060, dated November 13, 1953, between the United States of America and Vance Elton Thornburg doing business as Thornburg Mining Company is hereby amended as follows, effective as of the date of the contract:

> Referring to "Article 3. Exploration project" of Exploration Project Contract Form MF 200 (A) (February 1952), following the words "and shall bring the project to completion within a period of" delete "10 months" and in lieu thereof substitute "sixteen (16) months."

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 OCT 12 1954

THORNBURG MINING COMPANY

By Vance Elton Thornburg
Vance Elton Thornburg

UNITED STATES OF AMERICA

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

RECEIVED
OCT 18 1954

October 1, 1954

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

RE: Docket DMEA 3060 (Uranium)
Contract IDM-E638

Dear Mr. King:

Due to the fact that our Exploration Project Contract Form MF-200(A) on which Contract IDM-E638 is prepared, expired under date of September 13, 1954, we hereby make a request for an extension of time in order to complete the project work.

The work involved in State I should be completed within the next few days and our report will be submitted as soon as possible.

Since the work involved in Stage II is dependent on results obtained in the first stage and is subject to prior Government approval, we are unable to determine an accurate estimate of the additional time required to complete the project. However, at this time, we would like to request an extended time period of six (6) months and will endeavor to complete the final stage as speedily as possible.

Very truly yours,

J. T. Tunnell
Office Manager

JTT:bp

Rutin 9/10/54

No. 1

AMENDMENT OF CONTRACT: No. IBM-E658

Contract Docket No. DMEA 3060, dated November 13, 1953, between the United States of America and Venes Elton Thornburg, doing business as Thornburg Mining Company, is hereby amended as follows, effective as of the date of the contract:

Referring to EXHIBIT "A" attached to Exploration Project Contract Form MF-200(A) (February 1952), heading "Description of the Work", subheading "Stage I", items (b) and (c), delete both items in their entirety and in lieu thereof substitute the following:

(b) Starting from a point in the short adit just north of the main south workings, drift approximately 90 feet in a southwesterly direction, then turn the drift and continue further in a westerly direction for an approximate distance of 200 feet to intersect the projection of drill hole D1-206. After the projected position of drill hole D1-206 is reached -- (1) drive a crosscut in a direction approximately N 10° W along the ore horizon for a maximum distance of 100 feet to explore the area cut by drill holes D1-204 and D1-207; (2) drive a crosscut in a direction of approximately due south along the ore horizon to explore the area cut by drill hole D1-205.

(c) After the drifting described under item (b) and the crosscuts described under item (b) (1) and (2) are completed, or concurrently therewith, drill 560 feet of vertical stoper and/or jackhammer holes to sample ore horizons above and below the drift and crosscuts. The drift in a westerly direction, the crosscuts, and the location of drill hole stations are shown on the map titled "Recommended crosscutting and Jackhammer Exploration, South Drift, Shinarump claims, Thornburg Mining Co., Grand County, Utah, DMEA 3060, Contract IBM-E658" which is attached hereto and made a part of this amendment.

The sample drilling is to be accomplished according to the following schedule:

Drill Station No.	Number of Holes and Direction	Length	Total Footage
1	1 - up	25 feet	25 feet
2	1 - up	25 "	25 "
3	1 - up	20 "	20 "
3	1 - down	5 "	5 "
4	1 - up	15 "	15 "
4	1 - down	10 "	10 "
5	1 - up	10 "	10 "
5	1 - down	15 "	15 "
6	1 - up	20 "	20 "
6	1 - down	15 "	15 "
7	1 - up	10 "	10 "
7	1 - down	15 "	15 "
8	1 - up	10 "	10 "
8	1 - down	25 "	25 "
9	1 - up	5 "	5 "
9	1 - down	25 "	25 "
10	1 - up	5 "	5 "
10	1 - down	25 "	25 "
11 to 18 incl.	8 - up	10 "	80 "
11 to 18 incl.	8 - down	25 "	200 "
		Total	560 feet

Each drill hole shall be logged radiometrically by use of a rubber hose to push the probe to the bottom of up holes. Cuttings from all sample holes drilled under this contract shall be saved for radiometric or chemical testing.

Further referring to first said EXHIBIT "A", same heading, subheading Stage II, first paragraph, third line from the end, delete the words "from the raise" and in lieu thereof substitute "or raising".

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".

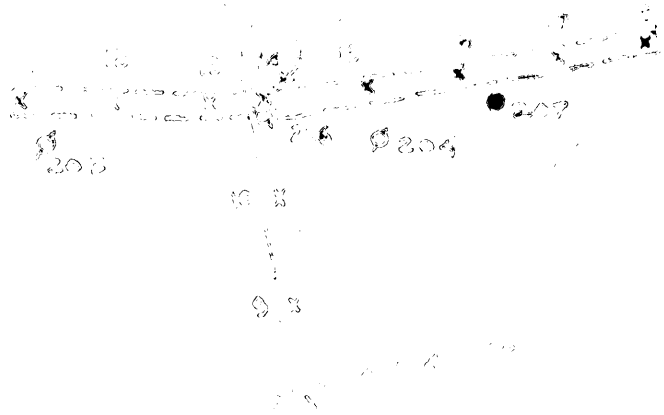
Dated JUL 12 1954

THORNBURG MINING COMPANY

By Vance Elton Thornburg
Vance Elton Thornburg

UNITED STATES OF AMERICA

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


208
209
206
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MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3[illegible]

COMMODITY Uranium

Department of the Interior
Defense Minerals Administration
RECEIVED
[illegible] 4 1954

Docket Copy
IDM-E 638

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 13th day of November, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] [illegible]
U. S. [illegible]
Grand Junction, Colorado

hereinafter called the "Operator," as follows: and as set forth in Exhibits I and II attached hereto and made a part hereof

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Utah, seven mile area, County of Grand, described as follows:[3] set forth in Exhibit [illegible],

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached: None

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

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

ARTICLE 3. *Exploration project.*—The Operator, within 90 days from the date of this contract shall commence work on a project of exploration for[5] Uranium

in or upon the described land; and shall bring the project to completion within a period of 30 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $37,720.00 which is 90 percent of $41,910.00 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 check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

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

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

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

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

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

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

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

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

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

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

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

Los Angeles II, substituted for Article 6.

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

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

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

THORNBURG MINING COMPANY
(Operator)

By Vance Thornburg

By O. Meitendorf
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]

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

RECEIVED

EXPLORATION PROJECT CONTRACT
THORNBURG MINING COMPANY
DOCKET NO. DMEA-3060

ANNEX I

The land referred to in Article 2 of the contract form consists of six (6) unpatented mining claims which are recorded in the office of the County Recorder, Grand County, Utah:

Claim		Book No.	Page No.
Shinarump No. 1	(Amended Location)	9J	140
Shinarump No. 1 A	" "	9J	140
Shinarump No. 3	" "	9J	235
Shinarump No. 4	" "	9J	310
Vance Thornburg	" "	9K	171
Gara No. 1 (Gara Kristen)	" "	9K	272

The above claims are shown on the map entitled "Claim Map Showing Proposed Exploration X-Cuts, Seven Mile Area Claims, Thornburg Mining Co.," which is attached hereto and made a part hereof.

EXPLORATION PROJECT CONTRACT
THORNBURG MINING COMPANY
DOCKET NO. DMEA-3060

Department of the Interior,
Defense Minerals Administration
RECEIVED
JAN 4 1954

ANNEX II

The following provisions are in lieu of Article 6 :

Repayment by Operator.--a. Certification.--If at any time the Government considers that a discovery or development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the final report and final account, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

b. Percentage royalty.--The Operator, or his successor in interest, shall pay to the Government a royalty on all minerals mined or produced from the land described in Article 2,--(1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification of discovery or development, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first, unless the Government waives its right to a royalty; or (2) if the Government makes a certification of discovery or development, for a period of ten years (or other period fixed by this contract) from the date of the contract, or until the total net amount contributed by the Government, without interest, is fully repaid, whichever occurs first. Said royalty shall be a percentage of the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production (including any bonuses), in whatever form disposed of, including ore, concentrates, or metal, as follows:

(a) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(b) One and one-half ($1\frac{1}{2}$) per cent of any such net amounts, plus one-half ($\frac{1}{2}$) per cent 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) per cent 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 ($1\frac{1}{2}$) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) per cent.)

c. Definitions.--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.

d. Lien for Payment.--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.

e. Notice to Purchasers.--The Operator shall notify any purchaser of the production of the Government's royalty interest, and shall authorize and direct the purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets; but failure or refusal by the purchaser to comply shall not relieve the Operator of liability to pay any royalty falling due.

f. No Obligation to Produce.--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.

Defense Minerals Administration

EXPLORATION PROJECT CONTRACT
THORNBURG MINING COMPANY
DOCKET NO. DMEA-3060

EXHIBIT "A"

Description of the Work

The object of this project is the discovery of uranium ore on two horizons in the Chinle member of the Morrison formation.

The work shall be performed in two stages, the second, dependent on results obtained in the first stage, shall be subject to prior Government approval. The work to be done during each stage is indicated on the attached plan map, "Figure 2" and described as follows:

Stage I

(a) From a given point in the present north mine workings, drift 275 feet southward to the vicinity of drill hole DI 221 and then continue 100 feet in a southeasterly direction to the vicinity of drill holes DI 220 and DI 222. Along the 375 feet of drift at intervals of 25 feet, sample holes 15 feet in length shall be drilled downward. These holes shall be probed with radiometric sampling equipment. Logs shall be kept noting each hole location, the thickness of pertinent strata, color of cuttings, and amount of radioactivity of the various strata encountered.

(b) Starting from a point in the short adit just north of the main south mine workings, drift approximately 90 feet in a southwesterly direction, then turn the drift and continue for a further 260 feet to intersect the projection of drill hole DI 200. On completion of this driftwork, a total of approximately 400 feet of sample drilling shall be done. The holes shall be spaced at 25-foot intervals along the drift and driven upward either vertical or inclined and to such a depth that they will prospect strata for 25 feet vertically above the back of the drift.

Each hole shall be logged radiometrically by use of a rubber hose to push the probe up the hole. Cuttings from all sample holes drilled during Stages I and II shall be saved for radiometric or chemical testing.

(c) At the point where drift, referred to in paragraph (b) above, intersects the projection of drill hole DI 200, a vertical or slightly inclined raise shall be driven a distance of approximately 25 feet. From this raise, crosscuts shall be driven approximately a combined total of 120 feet, northward to intersect drill holes DI 204 and DI 207, and southward to drill hole DI 203.

Stage II

This stage shall consist of extending drift, referred to in paragraph (a) of Stage I, a further 225 feet in a southerly direction, and drift, referred to in paragraph (b) of Stage I, a further 250 feet in a westerly direction. In the event that either the south or west drift work, or both, as outlined for this stage is not approved, then with Government approval 100 feet of drifting in a westerly direction from Prospect No. 4 (shown on maps) and/or further crosscutting or drifting, from the raise, may be done in lieu of this work. In Stage II, sample drill holes from the extended drifts shall be drilled and logged in the same manner as outlined in Stage I.

All drifts and crosscuts mentioned in this contract shall be 5 feet by 7 feet in cross section, in clear of timber, and the raise a minimum of 3 feet by 6 feet in cross section clear of timber.

To direct the work outlined under this contract, there shall be employed one full-time Superintendent and a Consulting Engineer who shall devote a minimum of four (4) days per month to this project.

The Superintendent, the Consulting Engineer, the extent and method of sampling, the radiometric testing, the laboratory making the assays, and the starting point and the direction of drifts, crosscuts, and raises, are all subject to prior Government approval.

Estimated Cost of Project

1345 feet of drifting, crosscutting, and raising @ $29.00/ft. 1/	$39,810.00	
1500 feet of jackhammer or stoper test holes @ $1.00/ft. 2/	1,500.00	
120 Uranium chemical assays @ $5.00/ea. 3/	600.00	
Total Cost of Project		$41,910.00
Government Participation at 90% (rounded to)		$37,720.00

1/ Includes cost of sampling and roof bolting or timbering where necessary.

2/ Includes cost of radiometric probing, collecting samples, and logging holes.

3/ Includes cost of transportation to and from laboratory. Claim for reimbursement to be supported by a copy of the assay return.

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

224 New Customhouse
Denver 2, Colorado

May 29, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region IV

Subject: (Uranium), Application of Thornburg Mining Company, Grand County, Utah

Enclosed are three copies of the subject application. One copy of the application is being retained in this office.

The applicant estimates his proposed work will cost a total of $37,210.00.

John F. Shaw, for
W. H. King

A. H. Koschmann

Enclosure

DMEA - 3060

APPLICATION FOR A

DEFENSE MINERALS EXPLORATION LOAN

REQUESTED BY

VANCE THORNBURG, dba

THORNBURG MINING COMPANY

GRAND JUNCTION, COLORADO

March 23, 1953

- Answers to Questions - Form MF-103 -

Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado
Phone 261

(1).

a). Vance Elton Thornburg, dba
Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado

b). Sole ownership.

c). Not applicable.

d). Not applicable.

(3).

a). The proposed exploration will be within the boundaries of the Shinarump No. 3, Shinarump No. 4 and Shinarump No. 1A claims. However, in addition to these claims the following claims are included since they may be benefitted by the proposed exploration: Shinarump No. 1 Fraction, Vance Thornburg and Gara No. 1 Reference is made to the attached map marked Exhibit "A"., which shows the group of claims and the proposed X-cuts.

The legal description of the claims involved in the exploration project is:

Shinarump No. 1A:

Beginning at discovery stake, thence N 70 35E - 75 ft. to the East end center stake; thence S19-25E - 300 ft. to the SE Cor. #1; thence S70-35W - 1500 ft. to the SW Cor. #2; thence N19-25W-300 ft. to the West end center stake; thence N19-25W - 300 ft. to the NW Cor. #3; thence N70-35E - 1500 ft. to the NE Cor. #4; thence S19-25E - 300 ft. to the East end center stake or the point of beginning.

Shinarump No. 1 Fraction:

The Northerly one hundred fifty feet (150) of Shinarump No. 1, as determined by a line one hundred fifty (150) feet South of and parallel with the Northerly boundary thereof.

Shinarump No. 1: Beginning at Discovery stake; thence S19-25E - 300 ft. to the SE Cor. #1; thence S70-35W - 1500 ft. to the SW Cor. #2; thence N19-25W - 300 ft. to the West end center stake; thence N19-25W - 300 ft. to the NW Cor. #3; thence N70-35E - 1500 ft. to the NE Cor. #4; thence S19-25E - 300 ft. back to the point of beginning.

Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado
Phone 261

Shinarump No. 3: (Amended Location)

Beginning at the Discovery Stake at which this notice is posted: thence N45-30E - 180 ft. to the East end center stake; thence S44-30E-300 ft. to the SE Cor. No. 1; thence S45-30W -1500 ft. to the SW Cor. No. 2; thence N44-30W - 300 ft. to the West end and center stake; thence N44-30W - 300 ft. to the NW Cor. #3; thence N45-30W - 1500 ft. to the NE Cor. #4; thence S44-30E - 300 back to the East end center stake.

Shinarump #4:

Beginning at the Discovery stake at which this notice posted; thence N70-35E - 115 ft. to the East end center stake; thence S19-25E - 300 ft. to the SE Cor. #1; thence S70-35W - 1500 ft. to the SW Cor. #2; thence N19-25W - 300 ft. to the West end center stake; thence N19-25W - 300 ft. to the NW Cor.#3; thence N70-35E - 1500 ft. to the NE Cor. #4; thence S19-25E - 300 ft. back to East end center stake.

Vance Thornburg:

Beginning from this location or discovery stake and running W64E-270 ft. to East end center stake; thence running S44-30E-300 ft. to the SW Cor. #1; thence S64W - 1500 ft. to SW Cor. #2; thence N44-30W - 300 ft. to West end center stake; thence N44-30W - 300 ft. to NW Cor. #3; thence N64E - 1500 ft. to the NE Cor. #4; thence S44-30E - 300 ft. to the East end center stake or point of beginning.

Gara No. 1 Book Page

b). The claims were only recently worked and are not known by any particular mine name.

c). Owner

d).

e). None

f). Shinarump No. 1A, being entry No. 208598, recorded in Book 9K, at page 289, in the office of the County Recorder, of Grand County, Utah.

Shinarump No. 1, the Northerly 150 feet of this claim as determined by a line one hundred fifty (150) feet South of and parallel with the northerly boundary thereof; said Shinarump No. 1 being entry No. 208597 recorded in Book 9K, at page 288 in the office of the County Recorder of Grand County, Utah.

Shinarump No. 3, the notice of location of said claim being recorded as entry No. 204988 in book 9J of the mining records page 235, in the office of the County Recorder of Grand County, Utah, and on which said mining claim, amended location notice has been filed of record in said office of the County Recorder in book 9K of mining records, at page 168, to which notice and amended location notice, reference is hereby made.

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U. S. Bank Building
Grand Junction, Colorado
Phone 261

It is the opinion of Leo J. Coady, Consulting Mining Engineer of Grand Junction, Colorado, who prepared this application, that conditions found here are geologically and structurally similar to the Cooper-Bronson mine in White Canyon.

The Chinlee formation as exposed on the claims consists of intermittent layers of sandstones and clays. At several points and for some distance along the rim, the clays are exceptionally thick. Areas of excessive bleaching of both the clays and sandstone were noted. Trees and trash carbon are quite common in the mineralized bed in both the South Workings and the North Workings.

A study of the section shown on attached map marked Exhibit "A" shows the vertical cliffs of the Wingate and the steeply dipping slopes of the Chinlee formations. The depth of core drill holes required and the rugged terrain prohibits a core drilling program. It is the writer's opinion that a core drilling program is not feasible.

Therefore, in lieu of a core drilling program, Applicant is requesting a loan to drive two X-cuts as shown on the attached map marked Exhibit "A" well within the thick cover of the Wingate formation. The exploration X-cuts should show primary mineralization at vertical depths 700 feet below the surface.

This property is truly in the exploration stage and no geologic reports are available.

d). The East boundary of the claims is only one quarter of a mile off highway No. 160 at a point twelve miles North of Moab and is easily accessible. The claims are 62 miles from the Government processing plant at Monticello over an excellent black top highway. Supplies are accessible in both Moab and Monticello, Utah.

e). An ample supply of manpower is available including Indians from the Navajo Reservation.

(5).

a). Uranium and Vanadium Minerals (Pitchblende).

b). Reference is made to the attached map marked Exhibit "A" showing in plan the proposed exploration X-cuts. Also shown in a longitudinal section along the South X-cut. Also shown on the map in plan is the relation of the proposed X-cuts to the rim outcrop and the North and South underground workings. As noted above, it is proposed to drive the X-cuts in the mineralized bed with the floor of the X-cuts on the red beds. The grade of the X-cuts may vary depending entirely on the unknown dips of the red clay beds.

c). The work will start within 30 days and be completed within six (6) months from the date of an exploration project contract.

d). Vance Thornburg, owner and operator, will direct the operation. Mr. Leo Coady or Mr. James Mallory will act as consultant.

Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado
Phone 261

Mr. L. Filener will probably act as Superintendent and Engineer. He lives at Moab, Utah. At present he is foreman in charge of the underground mining operations. His background of mining experience was gained over a period of years working as a minor, mucker and at various jobs around the uranium mines. He is an expert with a Geiger counter in determining the uranium content of underground ore faces. This is important since visually it is impossible to distinguish ore from waste underground.

(6).

a), b), c), d), e), f), g), and h):

Proposed North and South X-cuts:

Costs based on: Total footage 1200' (2-X-cuts @ 600' each.) Size 6' x 7'. Time required six months.

Direct Labor Costs:

	Per month	Six months
8 4 - Miners @ 16.25 per day	1690.00	10,140.00
4 2 - Engineers (pulling cars up incline) @ 13.00 per day	702.00	4,212.00
1 - Truck Driver @ 12.00 per day	312.00	~~1,872.00~~ 137

Indirect Labor costs:

1 - Supt. and Engineer (combined) @ 600.00 per month	600.00	3,600.00
1 - Consulting Engineer (6-reports)	200.00	1,200.00
Accounting Expenses (part time)	100.00	600.00
Assaying Expenses	100.00	600.00
Payroll Taxes, etc. (10%)	340.00	2,040.00

Equipment rental and cost of supplies:

1 - 500 ft. compressor - cost 12,000 rental @ 300.00 per month	300.00	~~1,800.00~~
Operating expenses (gas, oil, repairs) @ 6.00 per day	156.00	~~936.00~~
2 - Eimco Mucking Machines cost $6400, rental $112.50 per month	225.00	~~1,350.00~~
2 - Single drum Hoists cost $2400.00 rental $50 per month	100.00	~~600.00~~
Drill steel, Bits, Repairs, Services	100.00	600.00
2 - Blowers (ventilation) Rental $37.50	75.00	450.00
4 - 18 cu. ft. Mine cars Rental 5.00	20.00	120.00
5 Tons 12 lb. Mine Rails, Bolts, Fish plates, and track spikes.		600.00
2600 ft. 2" Black Iron Pipe		1,950.00
2600 ft. 1" Black Iron Pipe		1,560.00
1 - Pickup Truck, Water, supplies	50.00	300.00
Operating expenses	75.00	450.00
Carbide, Powder, Caps, fuse	300.00	1,800.00
20 - 16 ft. Mine Stulls		80.00
2000 - Board feet of 2" Mine Plank (random lengths)		200.00
300 - 4" x 6" Tract Ties		150.00
		37,210.00

1 - Tool shed and storage building will be required. Applicant will furnish this building at no cost to the project.

Thornburg Mining Company
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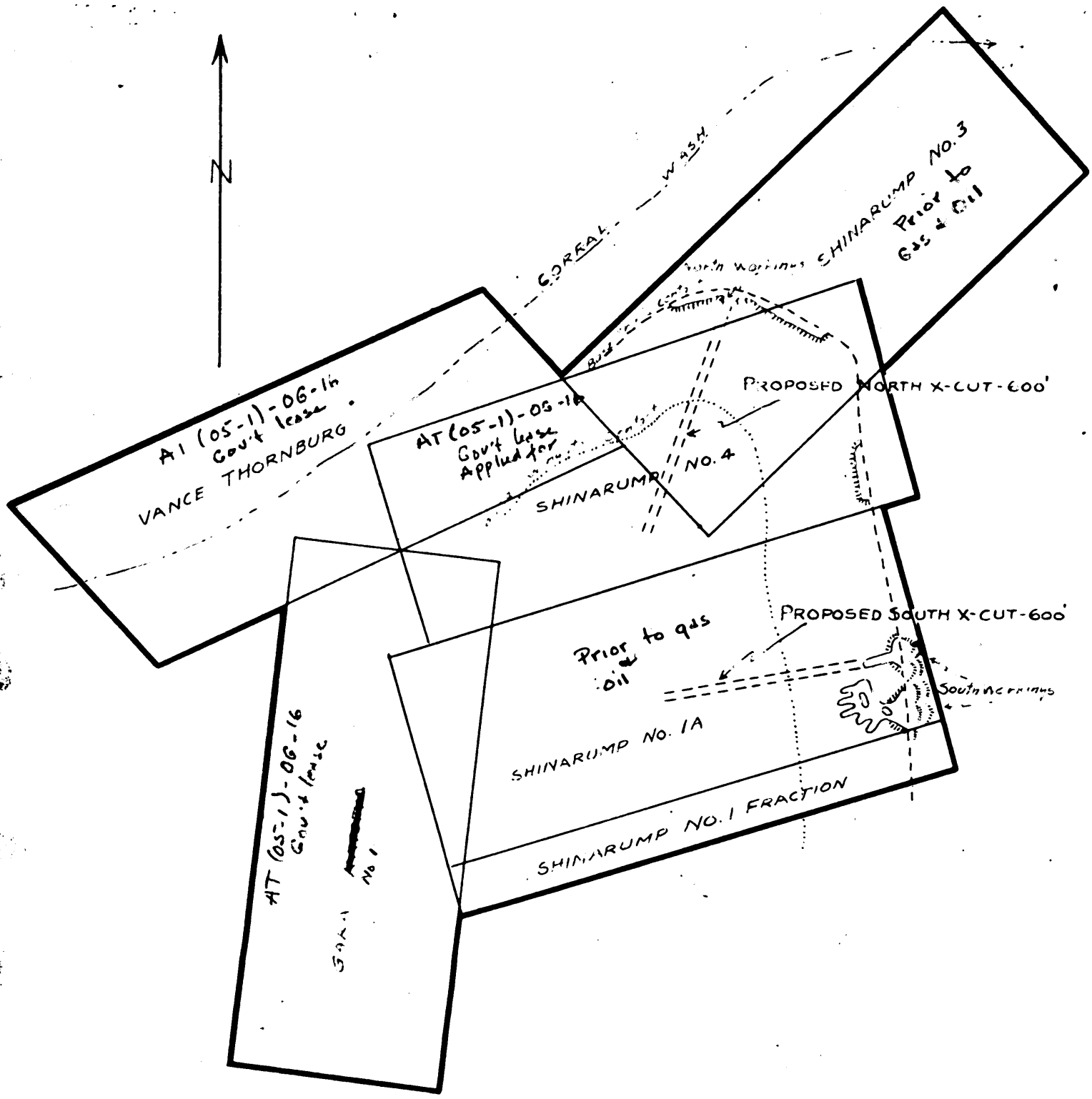
Grand Junction, Colorado
Phone 261

(7).

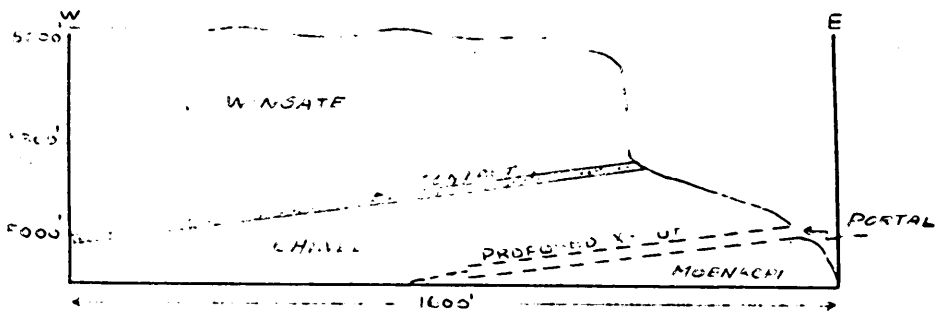
a). Applicant is prepared to furnish his share of the cost of the project. As calculated above, this amounts to $3711.00.

b). Applicant is prepared and if so requested, will deposit his share ($3711.00) of the project in any bank designated by Defense Minerals Exploration Administration.

EXHIBIT "A"



SECTION ALONG SOUTH PROPOSED X-CUT



CLAIM MAP

SHOWING

PROPOSED EXPLORATION X-CUTS

SEVEN MILE AREA CLAIMS

~~EXCALIBUR URANIUM CORPORATION~~

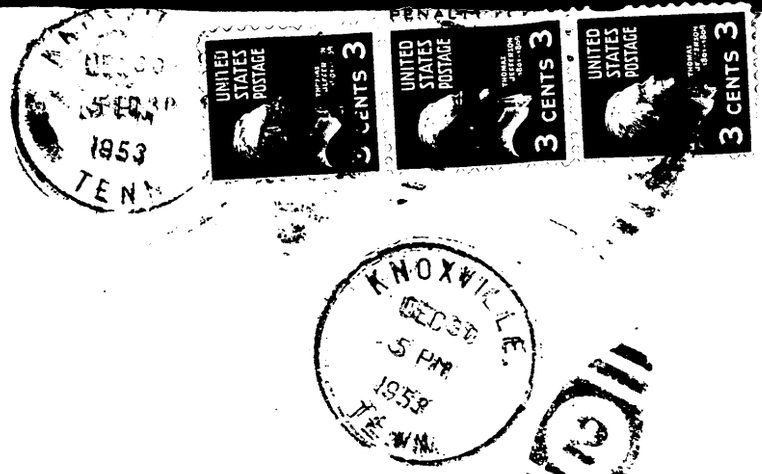
Thornburg Mining Co.

SCALE 1" = 400' 5-17-52 L. J. COADY

DMEA

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

OFFICIAL BUSINESS



Postage due 2 cents

George C. Selfridge, Chairman
DMEA Operating Committee
Dept. of the Interior
Washington 25, D.C.

DMEA
3060

Docket

Ching
Ellis

Project Summary Report

By: Michael Ching Date: August 21, 1957

1. Docket No. DMEA-3060 (Uranium)
   Contract No. Idm-E638

   Operator - Thornburg Uranium Mines, Inc.
   a Delaware corporation, Assignee
   160 West Main
   Grand Junction, Colorado

   Property - Six unpatented lode mining claims, Shinarump Nos. 1, 1A, 3 and 4, Vance Thornburg, Gara No. 1 (Gara Kristen), located in Seven Mile area T. 24 S., R. 20 E. S.L.M.&B., Grand County, Utah.

   Operator's Property Rights - Owner. No liens.

2. Contract (Short Form), dated November 13, 1953

   Final starting date - 90 days from Nov. 13, 1953
   Actual starting date - January, 1954
   Contract completion date - 28 months from Nov. 13, 1953
   Termination Agreement - dated May 28, 1956, effective 3-13-56

   Work Authorized (As Amended):

   Explore lower horizons of the Triassic Chinle formation by drifting, crosscutting, and percussion drilling in two stages, starting from existing, separate, north and south mine workings.

   Estimated Costs:

1,345 ft. drifting & crosscutting @ $29.60/ft.	$39,810.00
1,500 ft. sample drill holes @ $1/ft.	1,500.00
120 chemical assays @ $5/each	600.00
Estimated Total Cost of Project	$41,910.00
Government Participation @ 90%	$37,720.00

   Amendments:

   No. 1 - dated July 12, 1954. In Stage I, South workings, substitutes approximately 290 for 350 feet of drifting, 160 feet of crosscutting for 120 feet of crosscutting and 25 feet of raising, and 560 feet for 400 feet of percussion drilling. In Stage II, first paragraph, substitutes the words "or raising" for the words "from the raise."

No. 2 - dated October 12, 1954. Increases completion period from 10 to 16 months.

No. 3 - dated April 5, 1955. Increases completion period from 16 to 22 months and increases royalty repayment period from 10 to 11 years.

No. 4 - dated September 30, 1955. Increases completion period from 22 to 28 months.

Work Completed:

Stage I - North Workings:

364.5 ft. drifting @ $29.60/ft.	$10,789.20
210 ft. (14 holes) percussion drilling @ $1/ft.	210.00

Stage I - South Workings:

470 ft. drifting & crosscutting @ $29.60/ft.	$13,912.00
560 ft. (34 holes) percussion drilling @ $1/ft.	560.00
57 chemical analyses @ $5/each	285.00

Stage II - South Workings:

232 ft. drifting @ $29.60/ft.	$6,867.20
225 ft. (9 holes) percussion drilling @ $1/ft.	225.00

Total Cost of the Project $32,848.40
Government Participation @ 90% $29,563.56

Final Report Received:

Operator - Undated - Received Oct. 25, 1956
Field Team - Dated July, 1957. Received July 29, 1957

3. Auditor's Report of Review - dated June 25, 1956

Total Cost as billed by Operator	$32,848.40
Exceptions	None
Total Accepted Cost	$32,848.40
Government Participation @ 90%	$29,563.56

4. Certification of Discovery - dated June 22, 1956

5. Results and Comments:

Uranium deposits are found in the basal 30 feet of the Triassic Chinle formation on the subject property. Mineralization is erratically distributed as blebs and seams in at least three lime pebble conglomerate beds which range from 1 to 5 feet and average about 2 feet in thickness. The beds dip about 8 degrees to the southwest.

The north drift was driven S. 10° E., on the third or uppermost conglomerate bed or its equivalent in that area. This bed ranged from 1 to 2 feet thick and was only sporadically and weakly mineralized. Eight channel samples taken from 100 to 190 feet in from the starting point of the drift, ranged from 0.03 to 0.60% U_3O_8 and averaged 0.22%. Shipments from this portion of the drift averaged 0.23% U_3O_8. Further in, 19 tons of ore from the drift contained only 0.12% U_3O_8. Possibly 100 tons of ore containing 0.20% U_3O_8 might be inferred in the walls of the north drift.

The south drift was started in the first or lowest conglomerate bed and was to be driven westerly and down dip, following the bed. However, it was driven nearly horizontal for 309 feet, and penetrated all three conglomerate beds. It was then inclined downward about 8 degrees to stay in the third or top conglomerate bed for about 250 feet. 8 samples taken from 30 to 90 feet in from the start of the south drift ~~one~~ are partly representative of the lowest conglomerate bed and averaged 0.22% U_3O_8 over an average thickness of 3.1 feet. The second conglomerate bed was penetrated about 110 to 150 feet from the start of the drift. No samples were taken in this section by the examiners but samples taken across thicknesses of 1.5 and 0.7 feet, respectively, by the Operator, assayed 0.60 and 0.66% U_3O_8. Observations by the examiners indicate that these samples were not representative of this bed which was generally below ore grade. The third or uppermost conglomerate bed was penetrated from 210 to 290 feet from the start of the drift. This conglomerate was of ore grade and most of the 197 tons of ore shipped from the south workings during 1955 came from this area. The grade averaged 0.18% U_3O_8. The last 250 feet of the south drift remained in the upper bed but the conglomerate averaged only about 1 foot thick over that distance and was, at best, only erratically mineralized, with large portions barren. Samples taken showed the tendency of the ore to occur in small high-grade masses localized by carbon. Ore reserves remaining in the south workings may amount to 200 tons of 0.17% U_3O_8 material. Further mining would create caving of the mudstone-siltstone back.

The long-hole percussion drilling from the drifts penetrated largely barren or weakly mineralized rock. Spotty mineralized material was found both above and below the workings. Two down holes near the face of the south drift penetrated 2 and 2½ feet of material containing 0.27 and 0.35% eU_3O_8, respectively, in what is probably the middle conglomerate bed. Possibly 100 tons of ore might be inferred in this bed on the basis of these holes.

The deposits found on the subject property are largely marginal and cannot be mined profitably at the present time. Data were insufficient for the calculation of an ore reserve.

The project was frequently delayed and progress was slow due to inadequacy and breakdown of mining equipment. Operator's failure to drive the south drift down dip as planned was due to inadequate supervision. Costs were high and contract prices did not cover the Operator's costs.

A discovery was certified to protect the Government's interests, but prospects for future production are poor. About 1,200 tons of ore have been shipped from the property in all, but much of this tonnage was shipped prior to the DMEA project. Further work by the DMEA is not warranted.

Michael Ching

Michael Ching

[x] Audited

[x] Certified

WORK ANALYSIS SHEET - DMEA PROJECT

Analysis as of Aug. 20 1957
Incl. Voucher for June, 1955

[ ] Actual Cost

[X] Agreed Unit Costs

Name **Thornburg Uranium Mines, Inc.**

Docket No. **DMEA-3060**

State **Utah**

Commodity **Uranium**

Idm-E No. 638

OPERATION	AUTHORIZED Units	AUTHORIZED Cost	COMPLETED Units	COMPLETED Cost	NET COST
Drifting & Crosscutting	1,345	$ 39,810.00	1,066.5	$ 31,568.40	$ 31,568.40
Raising					
Shafts					
Winzes					
Drilling (Specify) Percussion	1,500	1,500.00	995	995.00	995.00
Surface Excavation					
Underground Excavation					
Roads and Trails					
Operating Equipment Purchased					
Surface Rehabilitation & Repairs					
Underground Rehabilitation					
New Building, Improvements, etc.					
Other (Specify) Chem. Analyses		600.00		285.00	285.00
Totals		$ 41,910.00		$ 32,848.40	$ 32,848.40

Prepared by Michael Ching

71626

THORNBURG
MINING
COMPANY

P. O. Box 80

New Almaden, California 95042

3060

March 23, 1965

To: United States Dept. Of the Interior
Office Of Minerals Exploration
Bldg. 20, Denver Federal Center
Denver, Colorado

OME
DEPARTMENT OF THE INTERIOR
MAR 2 1 1965
REGION III
DENVER, COLORADO

Re: Your Letter Dated March 8, 1965

Attn: Mr. Hugh M. Connors

E638
Thornburg Mining Co.

Gentlemen:

As per your above referenced letter we are enclosing our check No. 6615 in the amount of 1,352.20.

As you probably know, Mr. Tunnell who has always handled this Contract was hospitalized during the first half of 1964, and I kept records for Mr. Thornburg, in spare time hours. Since he was out of the state all year, some of these very important items were missed because I was not familiar with them.

Please accept our apology for not taking care of this sooner, and for not replying to your latest letter of March 8, promptly, however we have created some further confusion by a recent move to California. Your letter did not reach us untill just now.

We thank you for your cooperation and we assure you that it was not our intention to be negligent in handling this matter.

Sincerely

Thornburg Mining Co.

Lawrence Filener

Lawrence Filener

LFF
cc: Mr. Vance Thornburg

Copies
G.C. Selfridge
Royalty Corres E 638
Settlement Sheets E 638
~~Bredtown check~~

3-8-65

THORNBURG
MINING
COMPANY

P. O. Box 80

New Almaden, California 95042

3060

March 23, 1965

To: United States Dept. Of the Interior
Office Of Minerals Exploration
Bldg. 20, Denver Federal Center
Denver, Colorado

OME
DEPARTMENT OF THE INTERIOR
MAR 2 1 1965
REGION III
DENVER, COLORADO

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 26 1965

INITIALS	CODE
ame	800
	120
	120

Re: Your Letter Dated March 8, 1965

Attn: Mr. Hugh M. Connors

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Thornburg Mining Co.

Lawrence Filener

Lawrence Filener

LFF
cc: Mr. Vance Thornburg

Copies
G.C. Selfridge
Royalty Corres E 638
Settlement Sheets E 638

Thank God for AEC records

Bldg. 20, Denver Federal Center
Denver, Colo. 80225

March 8, 1965

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 10 1965

INITIALS	CODE
ama	800
[illegible]	120
	120

Mr. Vance Elton Thornburg
Thornburg Mining Company
140 West Main
Grand Junction, Colorado

Re: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Chinaroump Claims
Grand County, Utah
Contract Idm-E638

Dear Mr. Thornburg:

Mr. Fumich's letter of February 4, 1964 advised you that the royalty repayment period would expire on November 13, 1964 on the captioned contract.

We are advised that during 1964 prior to the date of expiration you shipped ore from this property which had a value of $26,519.39 on which you owe $1,352.20 royalty to the Government.

By return mail please forward this office your check for $1,352.20.

Yours very truly,

Hugh M. Connors
Acting Field Officer, OME
Region III

H. M. Connors (3-8-65)
cc: G. C. Selfridge with [illegible] sheets
E638
Chron

Production of Uranium - Vanadium
Thornburg Mining Company E.638

Date	Lot No.	Dry Tons		Net Value	Value Per Ton	% Roy	Royalty Due	Royalty Paid	Remarks
5-5-64	221	95.1995		2237.66	23.505	5%	111.88		
6-2-64	301	88.9030		1,718.05	19.325	5"	85.90		
6-2-64	305	194.8285		4,875.58	25.025	5"	243.78		
7-6-64	349	196.3055		4,166.54	21.225	5"	208.33		
7-6-64	361	32.4710		704.62	21.70	5"	35.23		
8-4-64	412	234.3035		2,283.05	9.744	3"	68.49		
8-5-64	402	123.9535		3,054.83	24.645	5"	152.74		
9-3-64	477	148.2665		1,713.96	11.56	5"	85.70		
9-3-64	479	64.3535		244.54	3.80	1.5"	3.67		
10-7-64	550	80.7445		651.77	8.072	2"	13.04	? 1/2 9.78	ama
10-7-64	557	175.5885		2,201.88	12.54	5"	110.09		
11-10-64	625	119.2815		2,135.14	17.90	5"	106.76		
11-10-64	626	178.9995		2,531.77	14.144	5"	126.59		
12-23-64	701	141.7095	28,519.39	1,582.04	11.164	4.5"	~~71.19~~	1,352.20	
12-23-64	706	36.2410		968.90	26.735	5"	~~4.84~~		
1-7-65	733	144.6725		593.16	4.10	1.5"	~~8.90~~		
1-7-65	734	58.6305		1,233.29	21.035	5"	~~61.66~~		~~4,445.29 Royalty due May 67 Jan 65~~

Atlas Minerals
Division of Atlas Corporation
P. O. Box 488
Moab, Utah

February 25, 1965

Mr. Hugh M. Connors
Acting Field Officer, O.M.E.
Region III
U. S. Department of the Interior
Office of Minerals Exploration
Building 20 - Denver Federal Center
Denver, Colorado 80025

Dear Mr. Connors:

In accordance with the instructions in your letter dated February 19, 1965, we are enclosing copies of settlement sheets, in duplicate, covering shipments from the Shinarump Group of Claims controlled by Thornburg Mining Company.

We cannot reconcile the pounds shown in your letter with our records but the enclosed copies of ore settlements are U308 pounds that we have processed from April 1, 1964, through December 31, 1964.

Very truly yours,

Jay Sorensen
Office Manager

Enclosures

ORE SETTLEMENT

MOAB, UTAH

Shipper Thornburg Mining Company

140 West Main Street

Grand Junction, Colorado

Date May 5, 1964

Claim Shinarump #1 & #3

Mining District Green River

Date Received March 30 to April 15, 1964

Lot No. 221, 224 (Monthly Average Settlement, April, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
196,320	2.02	192,399	.2750	529.10

95.1995 Dry Tons @ $ 23.505 $ 2,237.66

Loans Advance $1,080.00

PREMIUM

Due $1,186.69

Other Haulage $8.50 (SPECIFY) 10.03

TOTAL AMOUNT DUE $ 2,186.69

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

Buyer's assays govern if Seller fails to submit his assays prior to acceptance of payment.

SELLER OR AGENT

FILE COPY

Original

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date June 2, 1954

Claim Shinarump #3

Mining District Green River

Date Received May 1 - 20, 1954

Lot No. 301

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
180,000	1.3	177,606	.235	417.4

88.9000 Dry Tons @ $ 19.325 $ 1,718.05

PREMIUM

Other Haulage $0.50 (SPECIFY) 45.02

TOTAL AMOUNT DUE $ 1,763.07

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

FORM NO. 178 REV. 2-62

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper [illegible]
[illegible] South Vallier
Moab, Utah

Date June 2, 1964
Claim Shinarump #1
Mining District Green River

Date Received April 27 - May 20, 1964

Lot No. [illegible]

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
[illegible]	2.3	[illegible]	.[illegible]	[illegible]

[illegible] Dry Tons @ $ [illegible] $ [illegible]

Lump Allowance [illegible]

PREMIUM

Balance Due [illegible] Other Haulage [illegible] (SPECIFY) [illegible]

TOTAL AMOUNT DUE $ [illegible]

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

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SELLER OR AGENT

FILE COPY

[illegible]

FORM NO. 175 REV. 2-62

~~URANIUM REDUCTION COMPANY~~

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date July 6, 1964

Claim Shinarump # 1

Mining District Green River

Date Received June 1 - 19, 1964

Lot No. 300

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
482,900	2.6	392,607	0.255	1,001.15

196.3035 Dry Tons @ $21.225 $4,166.54

Less: $.50 per Lb. U_3O_8 to apply credit against drilling program agreement. PREMIUM

$4,267.27 Other Haulage $.50 100.73
(SPECIFY)

Less: ~~300.58~~
Amount Due: ~~$3,966.69~~

TOTAL AMOUNT DUE $4,267.27

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

[illegible]

FORM NO. 175 REV. 2-62

~~URANIUM REDUCTION COMPANY~~

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornburg Mining Company
311 South Walker
Moab, Utah

Date July 6, 1964
Claim Shinarump # 3
Mining District Green River

Date Received June 18, 1964

Lot No. 361

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
65,880	1.3	64,942	0.260	168.85

32.4710 Dry Tons @ $22.70 $764.62

Less: $.30 per Lb. U_3O_8 to apply credit against drilling program agreement.

PREMIUM

Other Haulage $.50 (SPECIFY) 16.45

$721.07
Loan: 84.43
Amount due: $636.64

TOTAL AMOUNT DUE $721.07

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

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SELLER OR AGENT

FILE COPY

Orange

FORM 175P REV. 2-62

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thornburg Mining Company
311 South Walker
Moab, Utah

Date: August 5, 1964
Claim: Shinarump # 3
Mining District: Green River

Date Received: July 15 - 20, 1964

Lot No. 482 (July, 1964 Settlement)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
251,300	1.4	247,987	0.291	721.41

123.9535 Dry Tons @ $ 24.645 $ 3,054.83

Less: $.50 per lb. U_3O_8 to apply credit against Drilling Program Agreement
Total $3,117.68
Less: 360.71
AMOUNT DUE: $2,756.97

PREMIUM

Other Haulage $.50 (SPECIFY) 62.85

TOTAL AMOUNT DUE $ 3,117.68

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

Buyer's assays govern if Seller fails to submit his assays prior to acceptance of payment.

SELLER OR AGENT

FILE COPY

271068

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornberg Mining Company

311 South Walker

Moab, Utah

Date August 4, 1964

Claim Shinarump # 1

Mining District Green River

Date Received July 2 - 20, 1964

Lot No. 412 (July, 1964 Settlement)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
478,360	2.8	468,687	0.156	731.03

234.3435 Dry Tons @ $ 9.744 $ 2,283.05

Less: $.50 per lb. U_3O_8 to apply credit against Drilling Program Agreement PREMIUM

Total $2,402.64 Other Haulage $.50 119.59
(SPECIFY)

Less: 365.52

ACCOUNT DUE $2,037.12 TOTAL AMOUNT DUE $ 2,402.64

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

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SELLER OR AGENT

FILE COPY

FORM NO. 178 REV. 2-62

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thornburg Mining Company
311 South Walker
Moab, Utah

Date: September 3, 1966
Claim: Shinarump #1
Mining District: Green River

Date Received: August 3 - 30, 1966

Lot No.: 477 (August, 1966 Settlement)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
306,500	2.6	298,530	0.170	506.11

148.2665 Dry Tons @ $ 11.56 $ 1,713.96

Less: $.30 per lb. U_3O_8 to apply credit against Drilling Program Agreement PREMIUM

Total 1,798.11
Less : 232.46
Amount Due 1,556.65

Other Haulage $.30 (SPECIFY) 76.15

TOTAL AMOUNT DUE $ 1,798.11

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

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SELLER OR AGENT

FILE COPY

REVISED

FORM NO. 178 REV. 2-62

[redacted]

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thornburg Mining Company
311 South Walker
Moab, Utah

Date: September 3, 1964
Claim: Shinarump 63
Mining District: Green River

Date Received: 8 - 19 - 20, 1964

Lot No.: 479 (August, 1964 Settlement)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
131,500	2.1	128,707	0.108	139.00

64.3535 Dry Tons @ $ 3.80 $ 244.54

Less: $.25 per lb. U_3O_8 to apply credit against Drilling Program Agreement. PREMIUM

Total 277.42
Less : 34.75
Amount Due 242.67

Other Haulage $.50 (SPECIFY) 32.88

TOTAL AMOUNT DUE $ 277.42

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

[redacted]

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date October 7 1964

Claim Shinarump #1

Mining District Green River

Date Received September 14-17. 1964

Lot No. 350 (Lot by Lot Settlement - September, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
168,920	4.4	161,489	0.142	229.31

80.7445 Dry Tons @ $ 8.072 $651.77

Less: Balance of Drilling Program Agreement

Total: $694.00

Less: 42.07

Amount due $651.93

PREMIUM

Other Haulage $.50 (SPECIFY) 42.23

TOTAL AMOUNT DUE $694.00

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

Original

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thoraburg Mining Company

Date: October 7, 1964

311 South Walker

Claim: Shinarump #3

Moab, Utah

Mining District: Green River

Date Received: September 15-18, 1964

Lot No. 357 (Lot by Lot Settlement September, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
350,760	2.4	351,177	0.177	621.58

175.5885 Dry Tons @ $ 12.54 $ 2,201.88

PREMIUM

Other Haulage $.30 (SPECIFY) 89.94

TOTAL AMOUNT DUE $ 2,291.82

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

Gavass

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date November 18, 1964

Claim Rhinocerus #3

Mining District Green River

Date Received October 2 - 20, 1964

Lot No. 625 (Lot by Lot Settlement - October, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
243,200	2.0	238,368	0.289	688.84

119.2815 Dry Tons @ $ 17.99 $ 2,146.14

Total $2,146.14
Less Advanced 1,450.18
Amount due $ 695.96

PREMIUM

Other Haulage $.50 (SPECIFY) 49.82

TOTAL AMOUNT DUE $ 2,195.96

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

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SELLER OR AGENT

FILE COPY

Original

FORM NO. 175 REV. 2-62

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date November 10, 1964

Claim Shinarump #1

Mining District Green River

Date Received September 22 - October 20, 1964

Lot No. 636 (Lot by Lot Settlement - October, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
368,500	2.8	357,999	0.188	673.04

178.9995 Dry Tons @ $ 14.144 $ 2,531.77

Total $2,623.90
Less Advance 900.00
Less balance of advance against Gurral Group 151.48
Amount due $1,572.41

PREMIUM

Other Haulage $.50 (SPECIFY) 92.13

TOTAL AMOUNT DUE $ 2,623.90

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

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FILE COPY

SELLER OR AGENT _____

Orange

ORE SETTLEMENT

MOAB, UTAH

Shipper Thornburg Mining Company

311 South Walker

Moab, Utah

Date December 23, 1964

Claim Shinarump # 1

Mining District Green River

Date Received November 13-27, 1964

Lot No. 701 - Lot by Lot Settlement - December, 1964

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
293,720	3.5	283,419	0.167	473.31

141.7095 Dry Tons @ $ 11.164 $ 1,582.84

PREMIUM

Other Haulage $.50 (SPECIFY) 73.43

TOTAL AMOUNT DUE $ 1,655.47

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT

FILE COPY

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper Thorburg Mining Company
311 South Walker
Moab, Utah

Date December 23, 1964
Claim Shinarump # 3
Mining District Green River

Date Received November 20, 1964

Lot No. 706 - Lot by Lot Settlement - December, 1964

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
74,220	2.3	72,482	0.313	226.87

36.2410 Dry Tons @ $ 26.735 $ 968.98

PREMIUM

Other Haulage $.50 (SPECIFY) 18.56

TOTAL AMOUNT DUE $ 987.46

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

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SELLER OR AGENT _____

FILE COPY

URANIUM REDUCTION COMPANY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thornburg Mining Company
311 South Walker
Moab, Utah

Date: January 7, 1965
Claim: Shinarump # 1
Mining District: Green River

Date Received: December 7 - 24, 1964

Lot No. 733 (Lot by Lot Settlement - December, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
298,300	3.0	289,345	0.111	321.17

144.6725 Dry Tons @ $ 4.10 $ 593.16

PREMIUM

Other Haulage 0.50 (SPECIFY) 74.59

TOTAL AMOUNT DUE $ 667.75

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

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SELLER OR AGENT

SALT LAKE CITY OFFICE

DEPARTMENT OF THE ARMY

ATLAS MINERALS
ORE SETTLEMENT

P. O. BOX 488
MOAB, UTAH

DIVISION OF ATLAS CORPORATION

Shipper: Thornberg Mining Company
311 South Walker
Moab, Utah

Date: January 7, 1965
Claim: Shinarump # 3
Mining District: Green River

Date Received: December 11 - 18, 1964

Lot No. 734 (Lot by Lot Settlement - December, 1964)

WET POUNDS	% H_2O	DRY POUNDS	% U_3O_8	POUNDS U_3O_8
120,640	2.8	117,261	0.253	296.67

58.6305	Dry Tons @ $ 21.035	$ 1,233.39	
	PREMIUM		
	Other Haulage $.50 (SPECIFY)	30.16	
	TOTAL AMOUNT DUE $	1,263.45	

I certify that I am the lawful owner or authorized Representative of the Lawful Owner of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Uranium Reduction Company.

I hereby transfer to the Uranium Reduction Company, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

The amount set opposite "Total Amount Due" shown above constitutes the entire amount payable to me in respect of ore deliveries described herein and is accepted by me in full payment thereof.

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SELLER OR AGENT _____

SALT LAKE CITY OFFICE

[illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Bldg. 20 - Denver Federal Center
Denver, Colo. 80025

February 19, 1965

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 1 1965

INITIALS	CO. E
ama	800
[illegible]	120
	120
	52

Office Manager
Atlas Minerals
P.O. Box 488
Moab, Utah

Re: DMEA 3060
Contract Idm-E638
Thornburg Mining Co.
Grand County, Utah

Dear Sir:

It has come to our attention that the captioned Operator has shipped ore to your mill at Moab and one lot to your mill at Mexican Hat.

The Government has royalty rights on production from Shinarump No. 1, 1A, 3, 4, Vance Thornburg, Gara No. 1, and Gara Kristen by virtue of the captioned contract.

If the following shipments of ore containing the amounts of uranium as shown were received by your mills from any of the claims listed above, will you please forward this office two copies of each settlement sheet.

March 1964	to Moab	0.22	U	358.99	lbs
		0.30	U	7,568.66	lbs
April 1964	to Moab	0.35	U	450.04	lbs
May 1964	to Moab	0.28	U	1,289.48	lbs
June 1964	to Moab	0.26	U	1,170.00	lbs
	to Mexican Hat	1.61	U	895.96	lbs
	to Moab	0.22	U	5,989.57	lbs
July 1964	to Moab	0.20	U	1,452.44	lbs
August 1964	to Moab	0.15	U	643.11	lbs
September 1964	to Moab	0.16	U	963.56	lbs
	to Moab	0.22	U	4,950.56	lbs
October 1964	to Moab	0.21	U	1,085.21	lbs
November 1964	to Moab	0.19	U	692.29	lbs

I realize that this entails a great deal of work for you and I appreciate your efforts very much.

Very truly yours,

Hugh M. Connors
Acting Field Officer, OME
Region III

cc: G. C. Selfridge
E638
Chron

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

November 13, 1964

Re: DRA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-2638

Thornburg Mining Company
140 West Main
Grand Junction, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely yours,

George C. Selfridge

George C. Selfridge, Chief
Division of Exploration Operations

MME Form 63
Revised 3-62

DMEA-3060
Idm-E630

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

From November 1963 to November 13, 1964

1. [redacted] , has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☐

From November 1963 to November 13, 1964

2. [redacted] , has there been any production from the land subject to the contract? Yes ☐ No ☐

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
_____		
_____	_____	_____

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity		Estimated Grade	Location
Ore	_____	Tons	_____	_____
Concentrates	_____	Tons	_____	_____
Other	_____	Tons	_____	_____

3. Since , has any production been transported through workings (see of contract)? Yes ☐ No ☐

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
_____	_____	_____

Submitted by:

Name _____ Title _____

Address _____ Date _____

THORNBURG

MINING
COMPANY

~~140 WEST~~ MAIN
1921 Main

GRAND JUNCTION, COLO.

November 27,1964

Mr. GC Selfridge
Dept. Of Interior
Washington 25, DC

Dear Sir,

Regarding your questionaire: DMEA-3060 (Uranium),contract Idm-E638, on this companies Shinarump claims,Grand County Utah.

Mr. Thornburg has been away from this office two weeks and will not return for approximately 60 days. Your document has been placed uppermost in his work file and will be acted upon immediately upon his return.

Sincerely yours,

R. J. Kinsley

OFFICIAL FILE COPY
O. M. E.
RECEIVED DEC 8 1964

DATE	INITIALS	CODE
12/8	GEE	800
		100
12/9		140
12/10		120
		120
		220

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/31	Murphy	500
2/3	Talbert	800
	Selfridge	120
2/3	Johnson	40
	Fumich	100
		220

FEB 4 1964

Mr. Vance Elton Thornburg
Thornburg Mining Company
140 West Main
Grand Junction, Colorado

Re: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-E638

Dear Mr. Thornburg:

Due to an oversight, the last paragraph of your letter of November 15, 1963, relating to the subject contract was not answered.

The contract is dated November 13, 1953. Amendment No. 3, dated April 5, 1955, increased the royalty repayment period from ten (10) years to eleven (11) years. Therefore, the expiration date of the contract is November 13, 1964.

Sincerely yours,

George Fumich, Jr.

Acting Director

FMMurphy/mm (1/31/64)
cc: Director's Reading File
Region III w/cy of ltr 11/15/63
Docket
Code 500

23263

Re: DMEE-3060

Mr. Thomburg, d/b/a Thomburg Mining Company, was Operator-Assignor and was not relieved from contract obligations by the assignment. Covered in Oct 22/63 letter

He should be so told and, also that expiration date is Nov. 13, 1964.

Talbert
11/18/63

UNITED

DEPARTMENT O

DEFENSE MINERALS EXPL

WASHINGT

THORNBURG
MINING
COMPANY

140 WEST MAIN GRAND JUNCTION, COLO.

November 15th, 1963

United States
Department of the Interior
Office of Mineral Exploration
Washington 25, D. C.

Re: DMEA-3060
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-E638

Attention: Director

Gentlemen:

I am replying to your letter of October 22, 1963, relative to the above caption.

Thornburg Uranium Mines, Inc. is a dormant corporation and is inactive.

The subject claims listed in Annex 1 of the subject contract reverted back to Thornburg Mining Company in the year of 1960. There has been no ore production but Thornburg Mining Company has kept the claims in good standing by doing the assessment work since that time.

It is our understanding that the subject contract expired under date of November 14th, 1963. ?

" 13, 1964

Very truly yours,

Vance Thornburg

Vance Thornburg

OFFICIAL FILE COPY
O. M. E
RECEIVED NOV 18 1963

DATE	INITIALS	CODE
11/18	VT JC	800
		~~620~~
	Murphy	900

OFFICIAL FILE COPY
O. M. E
RECEIVED DEC 9 1963

DATE	INITIALS	CODE
12/10	Murphy	500
		320

Building 20 - Federal Center
Denver, Colorado 80225

December 4, 1963

Memorandum

To: Fiscal Section, Division of Management Operations
Office of the Secretary, U. S. Department of the Interior
Washington, D. C. 20240

From: Acting Field Officer, OME, Region III

Subject: DMEA-3060 (Uranium)
Contract Idm-E638
Thornburg Uranium Mines, Inc., Assignee
(Shinarump Group of Claims)
Grand County, Utah

Attached is the original Report of Royalty Review dated November 22, 1963, on the subject property covering the period October 18, 1960, through November 15, 1963.

Original signed by

Hugh M. Connors

Attachment

cc: Chief, Division of Field Operations, OME
E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Royalty Corres. Idm-E638
Chron

HMC/lm

MME Form 7
(10-58)

NOV 2 9 1963

OFFICIAL FILE COPY

Date	Surname	Code
11/29	GKB	220

Memorandum

To: Acting Field Officer, Region III

From: E. D. Talbert, Chief (Signed) E. D. Talbert
Contract Administration and Audit Division

Subject: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc., Assignee
Shinarump Group of Claims
Grand County, Utah
Contract Idm-E638

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

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

(b) One copy for your files.

This Report of Royalty Review is made for record purposes only; therefore, no copy for the Operator is provided.

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

Enclosures

EDTalbert/ama 11-27-63

cc:
Docket
Director's Reading File
CA & A Division
Fiscal Section

43683

MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
10/21	Murphy	500
10/21	on leave	500
10/22	Talbot	800
	Selfridge	120
10/22	Johnson	110
	[illegible]	100
		220

OCT 22 1963

Mr. Vance Elton Thornburg
d/b/a Thornburg Mining Company
140 West Main
Grand Junction, Colorado

Re: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-E638

Dear Mr. Thornburg:

In response to our request for information regarding any change in the status of the subject claims and production therefrom, we were advised by Mr. J. T. Tunnell, Office Manager, that Thornburg Uranium Mines, Inc. has been inactive for several years and to the best of his knowledge there is no one employed by said company.

We wish to advise you that the Government's consent to the assignment of the contract to Thornburg Uranium Mines, Inc. on April 28, 1955, did not release you as an individual from liability under the terms of the subject contract and the certification of discovery or development issued June 22, 1956.

In view of Mr. Tunnell's information, will you kindly advise the present status of the corporation and ownership of the six claims listed in Annex 1 of the subject contract.

Sincerely yours,

George Fumich, Jr.

Director

FMMurphy/mm
10/21/63
cc: Director's Reading File
Region III
Docket
Code 500

43683

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

October 16, 1963

RECEIVED		
DATE		
10/18	Cwy	800
		120
10/21	Murphy	500 ✓

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-3060 (Uranium)
Contract Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump Claims)
Grand County, Utah

I contacted Bud Franz, State Mine Inspector, who informed me that Garth Thornburg was killed in a hunting accident. Vance Elton Thornburg, a brother of Garth Thornburg, is believed to be in Colorado but I have been unable to find a present address.

I am sorry that my memorandum of April 19, 1963 was ambiguous. The thought I wished to convey was there are actually two Shinarump 1-A claims in Grand County, Utah. One of these claims is owned by Nicholas Murphy and the other claim is owned by the Thornburg Mining Company.

The reason I became involved in these two claims was that the AEC records showed production from the Shinarump 1-A claim. A search of the court house records showed the existence of the two Shinarump 1-A claims with different ownerships. The Shinarump 1-A claim subordinated under the subject contract has never produced any uranium ore.

Hugh M. Connors

Hugh M. Connors

orm 7
58)

OFFICIAL FILE COPY

Date	Surname	Code
10/8	Murphy	500
10/8	[illegible]	500
10/8	Tallent	800
	GCS	130
10/8	[illegible]	110
	[illegible]	100
		220

OCT 8 1963

Memorandum

To: Acting Field Officer, Region III

From: Chief, Division of Field Operations

Subject: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-E638

Enclosed is a copy of MME Form 63 and a copy of the forwarding letter from J. T. Tunnell, Office Manager, which are self-explanatory.

We had planned to write Vance Elton Thornburg d/b/a as Thornburg Mining Company that he was not relieved of the contract terms when the contract was assigned to Thornburg Uranium Mines, Inc. However, one of the mining magazines some time ago mentioned that a Thornburg had been killed in an auto accident. Will you kindly endeavor to find out if this was Vance E. and if so, who is handling his estate.

With reference to your memorandum of April 19, 1963, will you clarify the statement made in the third paragraph, since the claim Shinarump 1-A is listed in the subject contract.

Upon receipt of these data, we will then write the letter mentioned above.

Enclosures

George C. Selfridge

FMMurphy/mm
10/8/63
cc: Director's Reading File
Review Committee
Docket
Code 500

43683

Re: DM[illegible] - 3060

Vance Thomburg, d/b/a as Thomburg Mining Company, was not relieved of the contract terms when Govt. approved assignment to Thomburg Uranium Mines, Inc., of which he was majority stockholder.

J. T. Turnell was not just "a part time bookkeeper", he was accountant, office manager, assistant secretary, etc, of both the corporation and the sole proprietorship. All DM&A matters were conducted through him.

I suggest a letter to Thomburg advising of his liability, asking status of corporation, and requesting info. as to ownership of six claims

Also, I suggest memo to Connors requesting clarification of his 4/19/63 memo in which he states Shinarump 1-A Claim (on which production has occurred)

(over)

adjoins Thornburg property. This claim name is one of six under contract.

wasn't one of the Thornburgs claims

Talbot
9/13/63

Also, Connor's 4/19/63 memo states Tunnel filed proof of labor on 8/2/62.

THORNBURG

MINING
COMPANY

140 WEST MAIN GRAND JUNCTION, COLO.

September 9th, 1963

OFFICIAL FILE COPY
O. M. E
RECEIVE SEP 12 1963

DATE		CODE
9/13	EW	800
		~~120~~
		500

United States
Department of the Interior
Office of Minerals Exploration
Washington 25, D. C.

Gentlemen:

The enclosed forms were delivered to my office by mail this date.

Thornburg Uranium Mines, Inc. has been inactive for several years and to my knowledge there is no one employed by said company. ?

A few years ago I was a part time bookkeeper for Thornburg Uranium Mines, Inc. and since I know of no one available in Grand Junction to refer said forms; I have answered the questions to the best of my knowledge. ?

To the best of my knowledge there has been no changes and the operations have been dormant.

Very truly yours,

J. T. Tunnell, Office Mgr.

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

September 4, 1963

Re: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah
Contract Idm-E638

Thornburg Uranium Mines, Inc.
140 West Main Street
Grand Junction, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely yours,

F M Murphy

F. M. Murphy, Acting Chief
Division of Minerals

MME Form 63
Revised 3-62

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since April 24, 1962, has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☒

2. Since April 24, 1962, has there been any production from the land subject to the contract? Yes ☐ No ☒

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
None	None	

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity		Estimated Grade	Location
Ore		Tons		
Concentrates	None	Tons	None	None
Other		Tons		

3. Since , has any production been transported through workings (see of contract)? Yes ☐ No ☒

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
None		

Submitted by:

Name J. F. Tunnell Title (Former) Bookkeeper

Address 140 West Main Street, Grand Junction, Colorado Date 9-9-63

4511

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

OFFICIAL FILE COPY
O. M. E
RECEIVED APR 22 1963

DATE	INITIALS	CODE
4/22	cwj	800
	Branch	500
April 19, 1963	Murphy	500
		220

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump Claims)
Grand County, Utah

I checked the status of the subject claims in the Grand County Courthouse, Moab, Utah on April 17, 1963 and found that Mr. J. T. Tunnell last filed Proof of Labor on August 3, 1962 for the Thornburg Mining Company.

I then called on F. M. Wright at the Wright Trailer Court. He told me that he shipped ore from the Shinarump Claims under a lease from Nicholas Murphy and that these Murphy Shinarump Claims were adjacent to the Thornburg Mining Company Claims.

I then went back to the Courthouse and verified the fact that Nicholas Murphy had filed Proof of Labor for the past year on the Shinarump 1-A Claim and that the Murphy Claims do adjoin the Thornburg Claims.

Will you please disregard the settlement sheets I forwarded you showing F. M. Wright as shipper as I am convinced this was not our ore.

Hugh M. Connors

Hugh M. Connors

Clarification needed; claim is under contract.
Talbert 4/22/63

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

April 12, 1963

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: Our Use of AEC Production Records

This is an attempt to clarify how we have been able to use AEC production records to our advantage. I had not realized these records were new to you until Mr. Fisher told me on his recent visit to this office.

The AEC production records are published quarterly. The shippers are listed alphabetically with the dry tons of ore and pounds of U_3O_8 and V_2O_5 they produced. Under the shippers names are listed the mining claims where the ore originated. The following information is given also, but in code;

1 Mining District
2 State
3 County
4 Host Rock
5 Metallurgical Type
6 Delivery Point -- Meaning the Mill
7 Month of Shipment
8 Grade of Ore
9 Metal Code

These records are quite voluminous but we get through them once a year. We have heretofore gone through the list of shippers. This year we went through the records by claim names. This was quite an undertaking because there are many claims with the same name in several mining districts and in too many cases we do not have the entire group of claims subordinated. Such is the case in E969 where three shipments were made and listed as originating from the Economy claim, which we do not have subordinated, but we do have Economy claims 1, 2, 3, 4, and 6, also the Outlaw No. 23 which shows six shipments of ore on which we have received no royalty.

Copies made:
File - E 638 DMEA-3060 Thornburg Mining Company
E949 DMEA-4086 David Borwick
E969 DMEA-4041 American Leduc Uranium
E943 DMEA-4047 Charles M. Coleman
E877 DMEA-3767 Uranium Prospectors
E988 DMEA-4201 Twentieth Century Fuels, Assignee

On my trip to Utah I will determine, if possible, the real source of the Economy shipments. It even becomes more complicated in a case like E988, where by amendment or otherwise, we are due 5 percent of the transportation charges of outside ore hauled through DMEA workings.

The AEC allocates the sale of uranium ore based on the ore reserves of each property as of a date, originally in 1958 I believe, but has since been moved ahead several times. Unlike the Lead-Zinc Subsidy where the property and the producer must be certified, only the property must have the allocation with AEC and almost anyone may be the producer, which has lead to thousands of lessees and small operators. This is the basis of our present problem.

I plan a trip to the AEC in Grand Junction and to the Colorado plateau area in Utah next week and will endeavor to get some answers on E638, E943, E877, E969, and E988 and will advise you.
E949

/s/ Hugh M. Connors

Hugh M. Connors

c
o
p
y

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

March 7, 1963

OFFICIAL FILE COPY
O. M. E
RECEIVED MAR 11 1963

DATE		CODE
3/11	[illegible]	800
3/12	Greenwood	500
	Murphy	300
		220

Memorandum

To: George C. Selfridge, Chief
Division of Field Operations, OME
Washington 25, D. C.

From: Acting Field Officer, OME, Region III

Subject: DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Attached are two copies of a letter from J. T. Tunnell, two copies of a letter from R. F. Hollis, and copies of my replies.

I am not satisfied that we have received royalty on all the production from the Shinarump No. 1 claim. I plan to call on AEC in Grand Junction and to inspect this property, and Idm-E988 in April 1963.

Hugh M. Connors

Hugh M. Connors
Acting Field Officer, OME
Region III

Attachments + 1 set of settlement sheets

Building 20 - Federal Center
Denver 25, Colorado

March 7, 1963

O. M. E.
RECEIVED MAR 11 1963
DATE

Mr. R. F. Hollis
Vice President - Milling
Atlas Minerals
P. O. Box 488
Moab, Utah

Re: [illegible]-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Dear Mr. Hollis

Thank you for your letter of February 25, 1963, and the copies of the settlement sheets which you enclosed.

We appreciate very much the assistance you have given us in supplying extra copies of settlement sheets.

Sincerely yours,

Original signed by

Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Royalty Corres. Idm-E638
Chron
HMC/lm

(2)

Mine

Atlas Minerals

Division of Atlas Corporation
P. O. Box 488
Moab, Utah

R. F. HOLLIS
VICE PRESIDENT - MILLING

February 25, 1963

OME
DEPARTMENT OF THE INTERIOR
FEB 28 1963
REGION III
DENVER, COLORADO

Mr. Hugh M. Connors
Acting Field Officer, OME
Region III
Department of the Interior
Building 20 - Federal Center
Denver 25, Colorado

Dear Mr. Connors:

I am enclosing copies of settlement sheets for certain shipments of ore to our mill as requested in your letter of February 19.

From your reference I presume you are under the impression that this ore was shipped from claims belonging to Thornburg Uranium Mines, Inc. You will note from copies of vouchers enclosed that royalties were paid on these shipments through our office to Nicholas Murphy, Robert H. Ruggeri and Samuel Zimmerman.

If I can be of further assistance to you, please do not hesitate to let me know.

Yours very truly,

R. F. Hollis

R. F. Hollis
Vice President - Milling

RFH:lsp
Enclosures

cc: Mr. Jay Sorensen

Building 20 - Federal Center
Denver 25, Colorado

March 7, 1963

Mr. J. T. Tunnell
140 West Main Street
Grand Junction, Colorado

Re: IDMA-3060 (Uranium)
Contract No. Idm-E638
Thorsburg Uranium Mines, Inc.
(Shimarump claims)
Grand County, Utah

Dear Mr. Tunnell:

Thank you for your letter of March 6, 1963 regarding the Shimarump claims.

Sincerely yours,

Original signed by
Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Royalty Corres. Idm-E638
Chron
HMC/lm

HMC

[redacted]

140 West Main Street
Grand Junction,
Colorado.

March 6th, 1963

Mr. Hugh M. Connors
Acting Field Officer, OME, Region 111
Office of Mineral Exploration
Building 20 - Federal Center
Denver 25, Colorado.

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah.

Dear Mr. Connors:

I am replying to your letter of February 28th, 1963, relative to the above caption.

The report of April 24, 1962, was evidently received at my office and since there was no one employed by Thornburg Uranium Mines, Inc., I filled it out to the best of my knowledge.

Since receiving your letter, I have contacted the Atomic Energy Commission here in Grand Junction and have looked at their records on the Shinarump claims. Their records show small productions of ore for various periods of 1958, 1959 and 1961 under various names of which I have no knowledge. These names are listed as: W. R. Stewart, F. M. Wright Ming., Dickerson-Wimer & Poland, Jerry Stocks and Alvin Moses. I do not know of anyone ever having a lease on the claims of Thornburg Uranium Mines, Inc.

I believe this to be an error in so far as having this production shown on the claims of Thornburg Uranium Mines and I have asked the A. E. C. to cancel these listings off of the record. Mining claim maps in the office of the A. E. C. indicate that there are other "shinarump" claims adjoining the property of Thornburg Uranium Mines and it is my thinking that ore could have been produced from these claims and recorded in error to the shinarump claims of Thornburg Uranium Mines, Inc.

I trust that the above will be of some help in clarifying the matter.

Very truly yours,

J. T. Tunnell

URANIUM REDUCTION COMPANY

P. O. BOX 488
MOAB, UTAH

ORE SETTLEMENT

Liquidation No. 1292 | Moab, Utah March 23, 19 59

Bought of F. M. Wright | Lot No. 3622 | Shippers Lot No.

Address P.O. Box 409, Moab, Utah | A.E.C. License No. P 3012

Type of Ore | Date Received 3/2 19 59

Mining Claim [illegible] | Mining District Green River | Pile No.

LOT NO	NET WEIGHT POUNDS	% H2O	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U3O8	V2O5	CaCO3	CONTENTS POUNDS U3O8	V2O5	CaCO3
3622	189 060 189,060	3.9	181,761	229	.03	22.0	416.23	54.53	39,987.42

PRICED PER A.E.C. CIRCULAR NO. 5 REVISED

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U3O8 PAYMENT	416.23	3.50			1,456.81	
DEVELOPMENT PAYMENT	416.23	.50			208.12	
EXCESS 4 LBS. PER TON PREMIUM	52.71	.75			39.53	
EXCESS 10 LBS. PER TON PREMIUM						
TOTAL U3O8 PAYMENT						1,704.46
V2O5 PAYMENT						
TOTAL U3O8 & V2O5 PAYMENT						1,704.46
LESS HIGH LIME PENALTY OVER % - 6% = % PENALTY						
TOTAL						1,704.46
HAULAGE ALLOWANCE 10 MI WET TONS @ .06 PER WET TON MILE				.60		55.72
TOTAL U3O8, V2O5 & HAULAGE PAYMENT						1,761.18

CHECKED BY:

APPROVED FOR PAYMENT:

CHECK NO.

MAILED

Uranium Reduction Company
P. O. BOX 485
MOAB, UTAH

NO. 432.57

DATE March 25, 1959 $432.57

NICHOLAS MURPHY, ROBERT E. RUGGERI AND SAMUEL ZIMMERMAN
C/o Robert E. Ruggeri
Moab, Utah

URANIUM REDUCTION COMPANY

DATE						
3-23-59		Final Settlement for March 1959 Lot No. 3622, Lease Agreement F. M. Wright U_3O_8 Value 1,496.34 15% Royalty 224.45 Development Allowance 208.12 432.57	5231	432.57		432.57

DETACH BEFORE DEPOSITING

OME
DEPARTMENT OF THE INTERIOR
FEB 28 1963
REGION III
DENVER, COLORADO

URANIUM REDUCTION COMPANY

P. O. BOX 498
MOAB, UTAH

ORE SETTLEMENT

Moab, Utah October 8, 1958 19

Monthly Average
Lot No. 2859-2918

Shippers Lot No.

Shipper William R. Stewart

A.E.C. License No. P-4065

Address Box 750 Moab, Utah

Date Received September 19 58

Type of Ore

Mining Claim Chinarump # 1

Mining District Grassriver

Pile No.

LOT NO.	NET WEIGHT POUNDS	% H_2O	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
	88 180								
	88,180	4.66	84,259	.1927	.055	23.55	162.38	46.47	19846.00

PRICED PER A.E.C. CIRCULAR NO. 5 REVISED

	POUNDS	PER LB.	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U_3O_8 PAYMENT	162.38	3.356			544.62	
DEVELOPMENT PAYMENT	162.38	.50			81.19	
EXCESS 4 LBS. PER TON PREMIUM TOTAL LBS U_3O_8 - DRY TONS X 4		.75				
EXCESS 10 LBS. PER TON PREMIUM TOTAL LBS U_3O_8 - DRY TONS X 10		.25				625.81
TOTAL U_3O_8 PAYMENT						
V_2O_5 PAYMENT		.31				
TOTAL U_3O_8 & V_2O_5 PAYMENT						625.81
LESS HIGH LIME PENALTY OVER 6%						
% - 6% = % PENALTY @ $.03 PER 1/10TH %						
TOTAL						625.81
HAULAGE ALLOWANCE 10 MI WET TONS						
Reduced PER WET TON MILE .06						26.51
TOTAL U_3O_8, V_2O_5 & HAULAGE PAYMENT						652.32
Less: Amount Paid Provisional Settlement Lot 2859, Check# 8232 & 8233						219.90
					BALANCE DUE	432.42

CHECKED BY:

APPROVED FOR

DATE PAID

CHECK NO

SELLER OR AGENT

Uranium Reduction Company

P. O. BOX 400
MOAB, UTAH

21.69
1240

PAY TO THE ORDER OF

NEGOTIABLE

DATE October 11, 1958

$ 108.98

Nicholas Murphy, Robert H. Ruggeri
& Samuel Zimmerman
% Robert H. Ruggeri
Moab, Utah

URANIUM REDUCTION COMPANY

FIRST SECURITY BANK OF UTAH, N.A., Fourth South Office, Salt Lake City, Utah

DATE		DESCRIPTION	BAL. DUE	CHARGE		WITHDRAWAL
10/8/58		Final Settlement-Sept.,1958 Lease Agreement-W.R.Stewart U_3O_8 Value 625.81	1831	108.98		108.98
		15% Royalty 81.69 Dev.Allowance 81.19 162.88				
		Less:Settlement Lot 2859 53.90 108.98				

NEGOTIABLE

DETACH BEFORE DEPOSITING

OME
DEPARTMENT OF THE INTERIOR
FEB 28 1963
REGION III
DENVER, COLORADO

URANIUM REDUCTION COMPANY

P. O BOX 488
MOAB, UTAH

ORE SETTLEMENT

FINAL SETTLEMENT

Settlation No. 5 1259

Moab, Utah Feb. 25 19 59

Shipper of F. M. Wright

Lot No. No.Av. Jan.59

Shippers Lot No.

Address P.O. Box 409, Moab, Utah

A.E.C. License No. P 3912

Name of Ore

Date Received 1/26-28-30 19 59

Mining Claim Shinarump 1 2

Mining District Green River

Pile No.

LOT NO.	NET WEIGHT POUNDS	% H2O	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U3O8	V2O5	CaCO3	CONTENTS POUNDS U3O8	V2O5	CACO3
Jan. 59	113,800	4.0	109,203	.280	.06	31.2	305.77	65.52	34,071.84

PRICED PER A.E.C. CIRCULAR NO. 5 REVISED

	POUNDS	PER LB	DRY SHORT TONS	PER TON	VALUE	TOTAL VALUE
U3O8 PAYMENT	305.77	3.50			1,070.20	
DEVELOPMENT PAYMENT	305.77	.50			152.89	
EXCESS 4 LBS. PER TON PREMIUM TO ALL	97.36	.75	DRY TONS		65.52	
EXCESS 10 LBS PER TON PREMIUM TOTAL			DRY TONS			
TOTAL U3O8 PAYMENT						1,288.61
V2O5 PAYMENT						
TOTAL U3O8 & V2O5 PAYMENT						1,288.61
LESS HIGH LIME PENALTY OVER						
% - 6% = % PENALTY @ $ PER TON						
TOTAL						1,288.61
HAULAGE ALLOWANCE 10 MI WET TONS @ .06 PER WET TON MILE				.60		34.14
TOTAL U3O8, V2O5 & HAULAGE PAYMENT						1,322.75

PACKED

PROVIDED FOR PAYMENT

DATE PAID

CHECK NO

SELLER OR AGENT

Uranium Reduction Company
P.O. Box [illegible]
MOAB, UTAH

[redacted]
[redacted]
c/o Robert Taggart
Moab, Utah

February 12, 1959 $ 120.25

2-6-59	Final Settlement January 1959 Lot No. 2471 Lease Agreement V. H. Wright U_3O_8 Value 1,135.72 15% Royalty 170.36 Sev. Allowance 142.89 120.25	4340	120.25		120.25

TEXAS ZINC MINERALS CORPORATION
1129 Colorado Avenue, P. O. Box 1749
GRAND JUNCTION, COLORADO

Correct: C.L.S.
Checked: J. E. A.
Approved:

Receiving Station: MEXICAN HAT, UTAH

Date APRIL 4, 1961

Bought of JERRY STOCKS
MURPHY RD.
MOAB, UTAH

Month Sampled MARCH
Liquidation No. 950
A.E.C. License No. NONE
Mining District GREEN RIVER
Mining Locality 7 MILE CANYON
State UTAH County GRAND
Pile No. 950
Cu Price* Less Net

Mining Claim SHINA RUMP

Lot No. P-4431

OME
DEPARTMENT OF THE INTERIOR
FEB 25 1963
REGION III
DENVER, COLORADO

* E & M J refinery domestic copper wire bar quotation average, week ending

WET WEIGHT POUNDS	H_2O	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	Cu	CONTENTS - POUNDS U_3O_8	V_2O_5	$CaCO_3$	Cu
99,900	4.46	95,443	.291		20.5	.21	277.74		19,565.61	200.43

U_3O_8		PER LB.	PER TON	SHORT TONS	TOTAL VALUE
.291 % = 5.82 Lbs. @		$ 3.50	$ 20.37	47.721	$ 972.08
Development Allowance 5.82 Lbs. @		.50	2.91	✓	138.87
Premium in Excess of 4.00 Lbs. Per Ton = 1.82 Lbs. @		.75	1.365	✓	65.14
Premium in Excess of Lbs. Per Ton = Lbs. @					
TOTAL U_3O_8 PAYMENT			24.645	✓	$ 1,176.09
Cu					
% Less % = % = Lbs. Per Ton					
Pay 75% or Lbs. @ ¢ = Per Ton					
Less $1.00 Milling Charge					
Haulage Allowance 100 Miles @ .06			6.00	49.95	299.70
Less Lime Penalty:					
20.5 % Less 6% = 14.5 % @ 30¢ plus $1.00			5.35	47.721	< 255.31
TOTAL GROSS PRICE					1,220.48

DEDUCTIONS

Ck. No.	DATE	ADVANCE	Ck. No.	DATE	ADVANCE	AMOUNT
		$			$	

Umpire Charges - Lot No.

Royalties and Other Deductions:

NET PROCEEDS $ 1,220.48

For Office Use Only

I certify that I am the lawful owner (or his authorized representative) of the ore described above, also that I have the legal right to transfer title thereof to TEXAS-ZINC MINERALS CORPORATION which is hereby done. Settlement for said ore, as shown above, is in accordance with A.E.C. Circular V, Revised and is accepted as correct.

Seller or Agent

By Title

(PLEASE SIGN AND RETURN ONE COPY PROMPTLY AS EVIDENCE OF ACCEPTANCE)

Wilson & Young, Grand Junction, Colo.

OFFICIAL FILE COPY
O. M. E
RECEIVED MAR 4 1963

DATE		CODE
3/4		800
		500
3/5		300
		220

Building 20 - Federal Center
Denver 25, Colorado

February 28, 1963

Mr. J. T. Tunnell, Accountant
140 West Main Street
Grand Junction, Colorado

Re: Docket No. [illegible]-3060 (Uranium)
Contract No. [illegible]-2638
Thurnburg Uranium Mines, Inc.
(Skinnerump claims)
Grand County, Utah

Dear Mr. Tunnell:

On April 24, 1962 you advised that there had been no production from the captioned property.

We are now advised that ore has been produced from the Skinnerump claims.

Please furnish this office two copies of the Lease or other Agreement allowing for the removal and sale of ore from this property. Also, please furnish this office two copies of each settlement sheet, since Liquidation No. 4712, July 1958, for all the ore that has been sold from the land subordinated to the Government by terms of the captioned contract.

Your early reply will be appreciated.

Sincerely yours,

Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Royalty Corres E638
Chron
HMC/lm

OFFICIAL FILE COPY
O. M. E
RECEIVED FEB 21 1963

DATE	INITIALS	CODE
2-25	Murphy	500
		120
		520

Building 20 - Federal Center
Denver 25, Colorado

February 19, 1963

Atlas Minerals Division
Atlas Corporation
Moab, Utah

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

Will you please forward this office two copies of each settlement sheet for the shipments listed below:

Date	Claim	Shipper	Dry Tons	Pounds U_3O_8
9/58	Shinarump No. 1	W. R. Stewart	42.13	162.38
1/59	" "	F. M. Wright	54.68	305.77
3/59	" "	"	90.88	416.23

Sincerely yours,

Original signed by

Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Idm-E638 Royalty Corres.
Chron
TMR/lm

OFFICIAL FILE COPY
O. M. E
RECEIVED FEB 21 1963

DATE	INITIALS	CODE
2/25	[illegible]	500
		120
		220

Building 20 - Federal Center
Denver 25, Colorado

February 19, 1963

Texas-Zinc Minerals Corp.
Grand Junction
Colorado

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

Will you please forward this office two copies of the settlement sheet for the shipment listed below:

Date	Claim	Shipper	Dry Tons	Pounds U_3O_8
3/61	Shinarump No. 1	Jerry Stocks	47.72	277.74

Sincerely yours,

Hugh M. Connors
Acting Field Officer, OME
Region III

cc Chief, Division of Field Operations, OME
Idm-E638 Royalty Corres
Chron
TMR/lm

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

MAR 30 1962

Re: DMEA-3060 (Uranium)
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, ~~Colorado~~ Utah
Contract Idn-E638

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Gentlemen:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely yours,

George C. Selfridge

George C. Selfridge, Chief
Division of Field Operations

OFFICIAL FILE COPY
O. M. E
RECEIVED APR 27 1962
DATE

4/20		800
		100
5/1	Murphy	110
		500
		220

MME Form 63
Revised 3-62

REQUEST FOR INFORMATION ON CERTIFIED PROJECT AND PROJECT UNDER ROYALTY AGREEMENT

1. Since January 1, 1960, has there been a change in ownership, lease, or sublease? If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before. Yes ☐ No ☒

2. Since January 1, 1960, has there been any production from the land subject to the contract? Yes ☐ No ☒

   A. If so and it was shipped, give quantity, value, and name and address of purchaser.

	Quantity	Value
	None	

   B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity	Estimated Grade	Location
Ore	None Tons		
Concentrates	Tons		
Other	Tons		

3. Since , has any production been transported through workings (see of contract)? Yes ☐ No ☒

   A. If so, state quantity, value, and disposition of material.

Disposition of Material	Quantity	Value
	None	

Submitted by:

Name J. T. Tunnell - J. T. Tunnell Title Accountant

Address 140 West Main Street Date 4-24-62
Grand Junction, Colo.

4512

OFFICIAL FILE COPY O. M. E RECEIVED NOV 28 1960		
DATE	INITIALS	COPY
11-28	gad	220
11/28	[illegible]	800
	Murphy	500
		220

Building 20 - Federal Center
Denver 25, Colorado

November 25, 1960

Memorandum

To: Fiscal Section, Division of Administrative Services
Office of the Secretary, Department of the Interior
Washington 25, D. C.

From: Hugh M. Connors, Acting Field Officer, OME, Region III

Subject: Docket No. DMTA-3060 (Uranium)
Contract No. Idm-[illegible]
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Attached is the original Report of Royalty Review on the subject property dated October 26, 1960 covering the period October 11, 1959, through October 17, 1960.

Original signed by

IM

for

Hugh M. Connors

Attachment
HMC/lm
cc Chief, Division of Field Operations (2)
Royalty Corres E638
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED NOV 28 1960

DATE	INITIALS	CODE
11-28	gad	VVO
11/28	[illegible]	800
"	[illegible]	500
		220

Building 30 - Federal Center
Denver 25, Colorado

November 25, 1960

Thornburg Uranium Mines, Inc.
150 West Main Street
Grand Junction, Colorado

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump Claims)
Grand County, Utah

Gentlemen:

Enclosed is a copy of the Report of Royalty Review on the subject contract dated October 26, 1960 covering the period October 11, 1958, through October 17, 1960.

You will note that $15.61 is the amount of overpayment of Royalty. If you will submit a claim to us for that amount the overpayment in Royalty will be refunded to you.

Yours very truly,

[illegible]

LM

Hugh M. O'Connor
Acting Field Officer
OME, Region III

Enclosure

HMC/lm
cc E. D. Talbert, Acting Chief
Contract Administration and Audit Division
Chief, Division of Field Operations (2)
Royalty Corres. E638
Chron

OFFICIAL FILE COPY
O. M. E.
RECEIVED FEB 2 1960

DATE	INITIALS	CODE
2-2	gad	220
2/3	EEG	800
2/3	Murphy	~~800~~
		225

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
Building 20 - Federal Center
Denver 25, Colorado

January 29, 1960

Thornburg Uranium Mines Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket No. DMEA 3060 (Uranium)
Contract No. Idm-E538
(Shinarump claims)
Grand County, Utah

Gentlemen:

In reference to the "Certification by the United States of America of a Discovery or Development under an exploration Project Contract" and the instructions in the Washington Office letter of transmittal of the Certification on the captioned project, please indicate your answer to the following questions and return one copy of the questionnaire immediately to this office.

Very truly yours,

Original signed by

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

1. Has the property been sub-leased or any change made in ownership other than this office has been notified? Yes ___ No___. If yes, please furnish details of the transaction on a separate sheet and include a true or signed copy of any instrument that was executed in conjunction with the matter.

2. Has there been production from the land subordinated under the referenced contract since ~~January 1, 1959~~? Yes___ No___. If yes, and shipments made, who was the purchaser? _____

3. Is any of the following material stockpiled? Yes___ No___.

(a) Ore, Tons _____ Estimated grade _____
(b) Concentrates, lbs. _____ Estimated grade _____
(c) Low grade ore, tons _____ Estimated grade _____
Place stockpiled _____

Signed _____

Title _____ Date _____

HMC:ltm cc: Chmn. Op. Comm. Roy. Corres. E638 Chron.

U. S. DEPARTMENT OF THE INTERIOR
Office of Minerals Exploration
224 New Customhouse
Denver 2, Colorado

November 6, 1958

OFFICIAL FILE COPY

11/10
11/13 chg
220
700

Memorandum

To: Chairman, Operating Committee, OME
From: Executive Officer, OME Field Team, Region III
Subject: Royalty Payments, Docket DMEA 3060 (Uranium) Contract Idm-E638, Thornburg Mining Company (Shinarump claim) Grand County, Utah

Period: October 1958

Enclosed are settlement sheets for which royalty payments were received for ore or concentrates shipped from the subject property during the above month:

Date	Liq. No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
7/11/58	4712	73.527	$62.72	$62.72	No Bonus Due	
Totals:		73.527	$62.72	$62.72		

Past Due Royalties Collected: $23.19 - of this amount, $13.95 applies to Liq. No. 4645, requested by our letter of 8/15/58.

Total Dry Tons (Ore or Cons.) Shipped to Date: 651.426

J. W. Townsend

jy
cc: Royalty File E 638 w/settlement sheets
Chron.

Form No. 0-4 (Rev.) 10M-7-57 W&Y

WESTERN URANIUM PROJECT

LUCIUS PITKIN INC.

Ore Purchasing Agent for United States Atomic Energy Commission

Grand Junction, Colorado [illegible] 19 [illegible]

Receiving Station [illegible]

Liquidation No. [illegible] Lot No. [illegible] Shippers Lot No.

Bought of [illegible] A.E.C. License No. [illegible]

Address [illegible]

Type of Ore [illegible] Contract No. [illegible] Date Received [illegible]

Mining Claim [illegible] Mining District [illegible] Pile No. [illegible]

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	Cu	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	Cu
[illegible]	[illegible]	[illegible]	[illegible]	0.10	0.00	[illegible]		[illegible]	[illegible]	[illegible]	

	Per Lb.	Per Ton	Short Ton	Total Value
[illegible]				
[illegible] equals 3.00 at	3.10	31.00	79.9253	$ 320.55
Development allowance 3.00 at	.50	2.00	"	159.85
TOTAL ORE VALUE		33.00	79.9253	$ 992.00
Haulage allowance 67 miles @ 6 cents per net ton mile			75.0150	301.56
TOTAL				$1,254.46
TOTAL GROSS PRICE				$1,254.46
Deductions:				(-)------
NET PROCEEDS				$1,254.46

Correct: [illegible]
Checked: [illegible]
Approved: [illegible]

Paid 7-14-58
Check No. 5734
Vo. No. 7-36

Note

PAYMENT CONDITIONS

Buyer's assays govern if Seller fails to submit assays prior to acceptance of payment. All rates paid are based on U. S. Atomic Energy Commission Published Schedules, unless otherwise provided in contract applicable to ore delivery described herein.

By endorsement of the check issued in settlement and payment for the ore herein described, the Seller or his Agent warrants: (1) that Seller is the lawful owner, or authorized representative of the lawful owner, of the ore described in this settlement sheet and that Seller has legal right to deliver such ore to the Commission; and (2) that Seller holds or has made proper application for the AEC source material license described above; and by the endorsement of such check the Seller or his Agent further agrees that: (1) all right, title, and interest in and to such ore is transferred by the Seller to the Commission effective as of the date of delivery of such ore; and (2) that Seller accepts the amount shown above as "total gross price" in full settlement for all sums due on account of the ore delivered and described herein.

Thornburg Uranium Mines, Inc.
Seller or Agent

By

Title

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
10/24	Alley	800
10/24	Fisher	800
10/27	C	220
"	Chiang	700

OCT 24 1958

Mr. Donald T. Finch
OME Auditor
224 New Customhouse
Denver 2, Colorado

Re: Thornburg Uranium Mines, Inc.
Contract No. Idm-F638
Docket No. DMFA-3060

Dear Mr. Finch:

Your report of royalty review on the above-cited project is acceptable and normal distribution is authorized.

Sincerely yours,

(Signed) J. L. Chambers

Jay L. Chambers
Contract Administration
and Audit Division

AMAlley/ama
October 24, 1958

Copy to: Docket
Director's Reading File
Mr. Chambers

8623

224 New Customhouse
Denver 2, Colorado
October 7, 1958

OFFICIAL FILE COPY
O. M. E.
RECEIVED OCT 10 1958
DATE | INITIALS
10/10 C 220
" ~~[illegible]~~ 700

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket No. ~~DMEA 3060 (Uranium)~~
Contract Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

On August 15, 1958, we wrote you regarding liquidation No. 4645 on which you owe the Government for royalty due, $13.95.

Will you please advise by return mail when we may expect to receive the $13.95 royalty due the Government on your liquidation No. 4645.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

HMC:hmh

cc: Chmn. Op. Comm. (2)
Robertson, OME/GJct
Roy. file, E638
Chron

284 New Customhouse
Denver 2, Colorado,
September 22, 1958

9/25 C 220
9/25 800
700

Thoruburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA-3060 (Uranium)
Contract No. Ida-R638
Thoruburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

Enclosed is a photo copy of a letter dated August 21, 1958, for which we have received no reply.

We will appreciate your prompt attention to this matter so that the audit review now in progress may be completed.

Very truly yours,

Original Signed by
E. N. HARSHMAN

E. N. Harshman

Enclosure

MHM:bh
cc: OME/Wash.D.C. (2)
Finch
Royalty File
Chron.

8/25 " ~~Chang~~ C 220 700

Box New Customhouse
Denver 2, Colorado

August 21, 1958

Thorsburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium)
Contract No. IAm-1638
Thorsburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

At the present time the Contract Administration and Audit Division of DMEA is engaged in making an audit review of royalty payments due the Government under the above Exploration Contract. In connection with this review, this Division has corresponded with the Atomic Energy Commission concerning recorded production from the Shinarump group.

The Atomic Energy Commission reports the following production in November, 1953:

Sold to Colorado Uranium Project - (AEC)

Liq. No.	Date	Claim	Pounds U_3O_8
4534	Nov. 1953	Shinarump 1-A	291.91
4639	Nov. 1953	Shinarump 1-A	151.07
		TOTAL	442.98

It is assumed that this production was mined prior to the effective date of the DMEA contract, which is November 13, 1953. However, in order that our records may be complete, please advise when the production reported on these two liquidation settlement sheets occurred.

According to our records, we have not received as of the date of this letter production sold to Inexus Pithin, Inc. for July and reported to AEC on Liquidation Settlement Sheet No. 4712 dated July 11, 1958.

Please advise when we may expect to receive a copy of this liquidation settlement sheet, accompanied by the appropriate amount of DMEA royalty remittance.

Your prompt reply to this letter will be appreciated, in order that completion of the audit review may be facilitated.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

DTF:bh
cc: Chmn. Op. Comm.(2)
Finch
Royalty File
Chron.

RECEIVED AUG 18 1958		
DATE	INITIALS	CODE
8/18	J.g.	225
8/18	[illegible]	810
8/19	[illegible]	[illegible]

204 Rev Customhouse
Denver 2, Colorado

August 15, 1958

Thorsburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium)
Contract Idn-B638
Thorsburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

We have received check and copies of a settlement sheet covered by Liquidation No. 4645, which indicates a net underpayment of $13.95 as follows:

Liquidation No.	Tons	Royalty Due	Royalty Paid
4645	84.196	$36.94	$22.99

The underpayment is due to the ore purchaser computing royalty on only the base value of contained U_3O_8. DMEA royalties (see Annex II (b) of contract) shall be a percentage of the amounts realized from the sale of the production, which includes all bonuses, premiums, or other benefits.

Your check for $13.95, made payable to Defense Minerals Exploration Administration, should be sent at once to the Executive Officer, DMEA Field Team, Region III, 204 Rev Customhouse, Denver 2, Colorado.

Very truly yours,

Original sig.
J. W. TOWNSEND

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

MHM:jy
cc: Chm. Op. Comm. (2)
DMEA, G.Jct.
Royalty file
Chron.

224 New Customhouse
Denver 2, Colorado

December 13, 1957

RECEIVED DEC 16 1957
12/16 C 220
12/17 800
700

Mr. L. Reid Johnston, Office Manager
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Dear Mr. Johnston:

By letter dated November 7, 1957, you enclosed your check for $134.13 and stated that copies of settlement sheet on production covered by Liquidation Number 7370 would be forwarded to this office as soon as they could be made or obtained from Union Carbide Nuclear Company.

Please advise us as to when we may expect to receive copies of the referred to settlement sheet.

Very truly yours,

Original signed by
W. H. KING

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

MHM/vj

cc: Royalty File E638
Sec. Opr. Comm. (2)
DMEA/G. Jct.
Marshall
Chron.

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

August 5, 1958

Memorandum

To: Chairman, Operating Committee, DMEA
From: Executive Officer, DMEA Field Team, Region III
Subject: Royalty Payments, Docket DMEA-3060 (Uranium) Contract Idm-E638, Thornburg Mining Company (Shinarump claim) Grand County, Utah

Period: July 1958

Enclosed are settlement sheets for which royalty payments were received for ore or concentrates shipped from the subject property during the above month:

Date	Liq. No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
6/16/58	4645	84.196	$36.94	$22.99*	No Bonus Due	
Totals:		84.196	$36.94	$22.99*		

8/8 C 220 ~~no~~ 700

Past Due Royalties Collected:

Total Dry Tons (Ore or Cons.) Shipped to Date: 577.899

J. W. Townsend
Alternate Acting Executive Officer

MHM:jy

cc: Royalty File E 638 w/settlement sheets
Monthly Royalty Payment File
Chron.

WESTERN URANIUM PROJECT

LUCIUS PITKIN INC.

Ore Purchasing Agent for United States Atomic Energy Commission

Receiving Station [illegible] Grand Junction, Colorado [illegible] 19[illegible]

Liquidation No. [illegible] Lot No. [illegible] Shippers Lot No. [illegible]

Bought of [illegible] Mines, Inc. A.E.C. License No. [illegible]

Address [illegible] West [illegible]

Type of Ore [illegible] Contract No. [illegible] Date Received [illegible]

Mining Claim [illegible] Mining District [illegible] Pile No. [illegible]

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS				CONTENTS POUNDS			
				U_3O_8	V_2O_5	$CaCO_3$	Cu	U_3O_8	V_2O_5	$CaCO_3$	Cu
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DMEA
DEPARTMENT OF THE INTERIOR
JUL 8 - 1958
REGION III
DENVER, COLORADO

PAYMENT CONDITIONS

Buyer's assays govern if Seller fails to submit assays prior to acceptance of payment. All rates paid are based on U. S. Atomic Energy Commission Published Schedules, unless otherwise provided in contract applicable to ore delivery described herein.

By endorsement of the check issued in settlement and payment for the ore herein described, the Seller or his Agent warrants: (1) that Seller is the lawful owner, or authorized representative of the lawful owner, of the ore described in this settlement sheet and that Seller has legal right to deliver such ore to the Commission; and (2) that Seller holds or has made proper application for the AEC source material license described above; and by the endorsement of such check the Seller or his Agent further warrants that: (1) all right, title, and interest in and to such ore is transferred by the Seller to the Commission effective as of the date of delivery of such ore; and (2) that Seller accepts the amount shown above as "total gross price" in full settlement for all sums due on account of the ore delivered and described herein.

[illegible] Uranium Mines, Inc.
Seller or Agent

By [illegible]

Title [illegible]

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

December 5, 1957

Memorandum

To: Chairman, Operating Committee, DMEA
From: Executive Officer, DMEA Field Team, Region III
Subject: Royalty Payments, **Docket DMEA 3060 (Uranium) Contract Idm-E638, Thornburg Mining Company (Shinarump claim) Grand County, Utah**
Period: **November, 1957**

Enclosed are settlement sheets for which royalty payments were received for ore or concentrates shipped from the subject property during the above month:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
	7370			$134.13	**No bonus due**	

(Settlement sheet to be forwarded).

12-9	C	220
"	Chg	700

Totals: $134.13

Past Due Royalties Collected **None**

Total Dry Tons (Ore or Cons.) Shipped to Date 493.703

W S T King
Executive Officer

Chron
cc: Royalty File E 638 w/settlement sheets
Monthly Royalty Payment File
hmh

700

224 New Customhouse
Denver 2, Colorado

October 24, 1957 **CERTIFIED MAIL**

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Gentlemen:

Enclosed is a photocopy of our letter dated September 19, 1957, for which we have received no reply.

Your immediate attention to this matter is requested.

Very truly yours,

Original signed by
E. N. HARSHMAN

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

Enclosure

MHM/vj

cc: Royalty File E638
Semiannual Report File
Sec. Opr. Comm. (2)
DMEA/G.Jct.
Marshall
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED OCT 28 1957
DATE 10/28 10/28 C 4800 220 800 225

224 New Customhouse
Denver 2, Colorado

October 24, 1957 **CERTIFIED MAIL**

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Gentlemen:

Enclosed is a photocopy of our letter dated September 19, 1957, for which we have received no reply.

Your immediate attention to this matter is requested.

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Original signed by
E. N. HARSHMAN

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

Enclosure

MHM/vj

cc: Royalty File E638
Semiannual Report File
Sec. Opr. Comm. (2)
DMEA/G.Jct.
Marshall
Chron.

DMEA
RECEIVED
DATE
10/28
CODE
700

CENTRAL FILE COPY
DMEA
RECEIVED SEP 23 1957
9/23 C 220 800 225

224 New Customhouse
Denver 2, Colorado

September 19, 1957

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Gentlemen:

A check with AEC production records indicates that we have received neither settlement sheets nor royalty on 3.10 tons of production made in May, 1957, from land subordinated to the Government under the terms of the captioned contract. The referred to production was shipped to the Monticello, Utah purchasing plant of the AEC and is covered by Liquidation Number 7370.

You are requested to submit three (3) copies of the settlement sheet bearing Liquidation Number 7370 with your royalty check made payable to Defense Minerals Exploration Administration. Checks are to be sent to the Executive Officer, DMEA Field Team, Region III, 224 New Customhouse, Denver 2, Colorado.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

MHM/vj

cc: Royalty File E638
Semiannual File E638
Sec. Opr. Comm. (2)
DMEA/G.Jct.
Marshall
Chron.

OFFICIAL FILE COPY
DMEA
SEPTEMBER 23 1957
CODE
9/23 C 220
9/23 800
225

224 New Customhouse
Denver 2, Colorado

September 18, 1957

Memorandum

To: DMEA/G.Jct. Attention: M. H. Salsbury

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

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

The penciled memorandum enclosed with your rough draft of the Semiannual Report (period: January 1, 1957 - June 30, 1957) for the subject project states that 9.82 tons of production was made from the south part of the Shinarump No. 1 claim which may be subject to DMEA royalty.

Annex I of the Contract lists the Shinarump No. 1 claim-Amended. We understand the amended description composes the Shinarump No. 1 Fraction shown on the map entitled "Claim Map Showing Proposed Exploration X-Cuts, Seven Mile Area Claims, Thornburg Mining Co." which is attached to and made part of the Contract. Since the map includes only the north 150 feet of the Shinarump No. 1 claim by the designation "Shinarump No. 1 Fraction", we believe that production made from the outcrop workings along the south side line of the Shinarump No. 1 claim is not subject to DMEA royalty.

We have noted your statement, that 3.10 tons production covered by Liquidation Number 7370 has not been reported to this office. A request for settlement sheets and royalty on this production will be sent to the Operator within the near future.

Original signed by
J. W. TOWNSEND

J. W. Townsend

MHM/VJ
cc: Royalty File E638
Semiannual File E638
Sec. Opr. Comm. (2)
Marshall
Chron.

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

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED AUG 5 1957

DATE	INITIALS	CODE
8/6	P.H.	220
"	~~[illegible]~~	~~700~~
		225

August 2, 1957
Re: DMEA 3060, Idm-E638
Thornburg Uranium Mines, Inc.
Shinarump Group
Grand County, Utah
Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Field Team Final Report

The contract, awarded November 13, 1953, approved the expenditure of $41,910.10 (Government's share $37,720.00) on a program of drifting, crosscutting, raising and percussion drilling, designed to explore the basal member of the Chinle (Triassic) formation, a lime pebble conglomerate.

Drifting and crosscutting done amounted to 1066.5 feet as extensions of workings in 2 adits and percussion drilling to 995 feet, the total accepted cost being $32,848.40.

The project was terminated by agreement, March 13, 1956. Certification was imposed June 22, 1956.

The DMEA geologist estimated the reserves at 400 tons of 0.17-0.20% U_3O_8, inferred ore. About 400 tons of 0.20% material was shipped during the contract term. Total shipments amount to 636.9 tons of 0.39% U_3O_8 ore. Mining was discontinued and is not likely to be resumed because the cost of exploring for the small areas of mineralization is disproportionate to value of the ore likely to be discovered.

N. E. Nelson

N. E. Nelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 29 1957

DATE	INITIALS	CODE
7/29	P.K.	220
"	[illegible]	180
		130
7/31	P.K.	220
8/8	Cour	160

July 25, 1957

Memorandum

To: Chairman, Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket No. DMEA 3060 (Uranium), Contract No. Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump group of claims), Grand County, Utah - FINAL REPORT

Enclosed are the original and two copies of a joint final engineering and geologic report, dated July 1957, by M. H. Salsbury, Mining Engineer, Bureau of Mines, and F. M. Byers, Jr., Geologist, Geological Survey; and transmittal thereof from J. William Hasler, dated July 22, 1957.

The original and one copy of the Operator's final report were forwarded by memorandum of October 23, 1956.

The contract was terminated before completion of all the work provided for, by a TERMINATION AGREEMENT, dated May 28, 1956, which was made effective as of March 13, 1956.

F.T. FINAL Report

The exploration work completed consisted of 1,066.5 feet of drifting and crosscutting, the drilling of 995 feet of percussion drill hole, and analysis of 57 samples, at a total accepted cost of $32,848.40, toward which the Government contributed 90%, or an amount of $29,563.56.

Reimbursement to the Operator in processing Form MF-104, Operator's Monthly Report and Voucher, for the month of June, 1955 constituted final payment under the terms of the contract. The aggregate payment to the Operator of $29,563.56 was confirmed as being acceptable to the Government in the Report of Review of reported project costs by the Contract Administration and Audit Division, DMEA, dated June 25, 1956.

The exploration work completed resulted in the Discovery or Development of a significant quantity of Uranium ore, on which a Certification was issued June 22, 1956.

W. H. King
W. H. King

E. N. Harshman
E. N. Harshman

Reviewed by
DMEA OPERATING COMMITTEE
7-31-57
(Date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 360
Grand Junction, Colorado

IN REPLY REFER TO:

JUL 23 1957

GEOLOGICAL SURVEY
DENVER, COLORADO

July 22, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler

Subject: Transmittal of joint final rengineering and geologic report, DMEA docket 3060 (Uranium), contract Idm-E 638. Thornburg Uranium Mines, Inc., Shinarump group of claims, Grand County, Utah

Enclosed are 12 copies of the joint final engineering and geologic report on the above captioned property, by M. H. Salsbury, U. S. Bureau of Mines, and F. M. Byers, Jr., U. S. Geological Survey. Figure 2 entitled "Map of work under DMEA 3060, Shinarump group of claims, Grand County, Utah," is included and figures 1, 3, 4, and 5 have been prepared by the drafting office at the Denver Experiment Station for inclusion in the report for transmittal to Washington.

OFFICIAL FILE COPY
DMEA
RECEIVED JUL 29 1957

DATE	INITIALS	CODE
		130
		220

J. William Hasler
J. William Hasler,
Geologist

JWH/mlr

Enclosures

Reports (12)
Fig. 2 (12)

Reviewed by
DMEA OPERATING COMMITTEE
7-31-57
(date)

DMEA
DEPARTMENT OF THE INTERIOR
JUL 25 1957
REGION III
DENVER, COLORADO

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION
FINAL REPORT BY FIELD TEAM
REGION III

OFFICIAL FILE COPY
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DMEA 3060

Contract No. Idm-E 638

Thornburg Uranium Mines, Inc.

(Successors to Thornburg Mining Company)

Shinarump Group of Claims

Grand County, Utah

Uranium

DMEA
DEPARTMENT OF THE INTERIOR
JUL 25 1957
REGION III
DENVER, COLORADO

Joint Final Engineering and Geologic Report

by

M. H. Salsbury
Bureau of Mines

F. M. Byers, Jr.
Geological Survey

July 1957

Reviewed by
DMEA OPERATING COMMITTEE
7-31-57
(date)

DMEA 3060 CONTRACT NO. Idm-E 638
THORNBURG URANIUM MINES, INC.
(SUCCESSORS TO THORNBURG MINING COMPANY)
SHINARUMP GROUP OF CLAIMS
GRAND COUNTY, UTAH

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DMEA 3060
CONTRACT Idm-E 638
THORNBURG URANIUM MINES, INC.
(SUCCESSORS TO THORNBURG MINING COMPANY)
SHINARUMP GROUP OF CLAIMS
GRAND COUNTY, UTAH

INTRODUCTION

Summary

The Thornburg Mining Company applied on June 29, 1953 for Defense Minerals Exploration Administration assistance in exploration of the Shinarump group of claims in Grand County, Utah near Utah Highway 160, 13 miles north of Moab, Utah. The applicant proposed to perform 1,200 feet of underground work to explore, by drifting, mineralization in the basal member of the Chinle formation of Triassic age at a total cost of $37,120.00. Government participation at 90 percent would have been $33,489.00.

The property was examined on July 24, 1953 by a DMEA examining team accompanied by E. V. Reinhardt of the Atomic Energy Commission, and Vance and Garth Thornburg, the principals of the applicant company.

A modified plan was agreed on by the examining team and the applicant providing for crosscutting, raising, and percussion drilling from underground stations in addition to the drifting originally proposed. This increased the estimated cost and contract No. Idm-E 638 on the revised basis, signed November 13, 1953, called for a maximum expenditure of $41,910.10, Government participation at 90 percent amounting to $37,720.00.

Operations were carried on from January 1954 to June 1955, although they were not continuous throughout this period. All of Stage I and a portion of Stage II were completed by that date.

The Thornburg Mining Company was not a corporation but was the operating name used by Vance Elton Thornburg. The operation was reorganized in the spring of 1955 as Thornburg Uranium Mines, Inc. Transfer of Contract Idm-E 638 was requested and was authorized by the DMEA Administrator on April 28, 1955.

No work was done under the contract after June 1955. The entire mine operation was shut down after August 1955. On January 18, 1956, the applicant requested additional Stage II work which was denied by the DMEA Field Team, Region III after an appraisal of the project was made by DMEA field examiners.

During the project, 1,066.5 feet of drifting and crosscutting and 995 feet of long hole percussion drilling were accomplished at an accepted cost of $32,848.40. Government participation at 90 percent was $29,563.56. The final audit rendered by the Contract and Audit Division, DMEA, on June 25, 1956 verified this amount.

The project was terminated effective March 13, 1956 by agreement dated May 28, 1956.

Work under the project resulted in discovery of ore consisting of small blebs of uranium minerals scattered erratically and infrequently throughout three lime pebble conglomerate beds in the basal member of the Chinle formation of Triassic age. These blebs, although often with

a high uranium content, made only a marginal grade of ore as broken, even with considerable sorting.

The DMEA geologist has made a reserve estimate of 400 tons of inferred ore with a content of from 0.17 to 0.20 percent U_3O_8 in three separate ore occurrences but the estimate is not based on computations because data are not sufficient. Shipments made during the DMEA project total nearly 400 tons but they consisted partly of higher grade ore left in old stopes near the outcrop blended with material broken in the DMEA workings. Therefore the content of about 0.20 percent U_3O_8 does not represent the average value of the portion from DMEA workings. The latter portion is considered to have a content of from 0.10 to 0.15 percent U_3O_8 and is marginal at this time. This is borne out by the fact that the operator has not continued mining operations. However, to protect the Government's interest in any ore which might be mined, Certification of Discovery was recommended by the field examiners and was effected by the DMEA Administrator on June 22, 1956.

It has been concluded that extensive areas of mineralization similar to those already explored may be present in undeveloped sections of the Shinarump claims. They cannot be considered significant now or in the foreseeable future, because the cost of exploring for them would be disproportionate to the value of any ore discovered, nor can they be mined profitably even disregarding exploration costs.

Recommendations

Further exploration, ~~either~~ with DMEA assistance, ~~or privately~~ is not recommended.

LOCATION AND ACCESSIBILITY

The Shinarump claims are in T. 24 S., R. 20 E., Salt Lake Meridian, Seven Mile area, Grand County, Utah, 13 miles north of Moab, Utah, and about 1/2 mile west of Utah Highway 160 (fig. 1). The claims are therefore easily accessible from Moab, a supply center, residential area, and site of the nearest uranium treatment plant, or from Grand Junction, Colorado, the nearest major supply center 110 miles northeast of the property. Uranium ores can also be marketed in Grand Junction, and in Monticello, Utah, 58 miles south of Moab. There are no unusual problems of supply, labor, housing, power, or water.

The potential ore-bearing formation outcrops near the base of a steep Chinle slope terminating against a high vertical Wingate cliff. Drilling exploration from surface through Chinle sediments has been carried on successfully up to 500 feet behind the ore-bearing outcrop although with difficulty on the upper slopes approaching the Wingate cliff. Drilling through the Wingate formation is expensive and has not been attempted at the Shinarump mine to date. The alternative is underground exploration, and this has been the method most used.

PROPERTY

The property included in the DMEA project consists of 6 located claims shown on figure 2 owned by the operator, as follows:

Claim	Recorded in Book	Page	Remarks
Shinarump No. 1	9J	140	
	9K	288	Amended location
Shinarump No. 1A	9J	140	
	9K	289	Amended Location
Shinarump No. 3	9J	235	
	9K	168	Amended location
Shinarump No. 4	9J	310	
	9K	168	Amended location
Vance Thornburg	9J	171	
Gara No. 1	9J	600	Located originally as Gara Kristin
	9K	272	Amended location

The operator also owns property adjoining the Shinarump claims on the west and north which has been developed on a small scale.

HISTORY

Exploration of the Seven Mile area dates from 1949 and has resulted in production of small tonnages of good grade from the early operations in shallow workings immediately behind the ore-bearing outcrops. A limited amount of drilling from surface has been done by the Atomic Energy Commission and privately on the Shinarump claims and others. Enough mineralization was found to encourage underground development in the area behind the ore-bearing outcrop. To date a profitable mining operation has not been established in the Seven Mile area. At present the Shinarump

mine is not in operation and only sporadic operations on a small scale are being carried on in adjoining mines. Further drilling from surface, some of it through the Wingate formation, has been considered by the operator, but has not been undertaken to date.

A total of about 1,500 feet of underground development made up of drifting and crosscutting has been done through two adit openings called north and south workings, about 1,100 feet apart. In general, workings are planned to follow the mineralized beds, and drifts following down the dip should have been driven on an inclination of 3 to 8 degrees below the horizontal. The heading in the south workings was planned to remain on the lowest of the potential lime conglomerate beds, but it was driven only about 2° below the horizontal, gradually left the lower bed, passed through intervening strata containing slight mineralization, and ended in the upper bed. The operator intended eventually to connect the north and south workings for ventilation but this has never been done. Forced ventilation has been necessary in the operation which has utilized small diesel-powered underground haulage units. The workings are normally dry except when drainage of surface runoff through the old stopes accumulates in the lowest headings.

The lime pebble conglomerate in which the workings are driven does not stand well without support. Not much timbering has been done and a considerable amount of sloughing has occurred in main workings.

Three-wheeled diesel-powered carts with a capacity of about 16 cubic feet have been used for trackless haulage on the steep inclines against the load. The equipment has not been satisfactory. It was built by the operator and the design is not heavy enough for the service. One or more of the carts was out of service for repairs nearly every time a DMEA inspection was made. The weakest points were driving axles. When these were strengthened, other units of the power train failed.

Although powered haulage was used, broken material was shoveled by hand. Progress was slow and costly with this method and most of the advantage of powered haulage was lost.

GEOLOGY

The host rocks containing the uranium deposits are in the basal 30 feet of the Triassic Chinle formation. These host rocks consist of complexly intertonguing lime pebble conglomerate and siltstone, which is greenish gray near the ore deposits. Three beds of lime pebble conglomerate are host rocks to small high-grade masses of uraninite, up to several inches across, in the upper 20 feet of the basal 30-foot sequence of the Chinle. At the south workings on the Shinarump 1A claim, a lowermost bed of siltstone, about 10 feet thick, is mineralized in the upper part, where it is in contact with the lowest lime pebble conglomerate. The regional dip is about 8 degrees to the southwest; the Stage I south drift, was driven slightly south of west and nearly horizontal for 309 feet.

Hence, three beds of mineralized lime pebble conglomerate, successively higher in the section were penetrated as the heading of the south drift was moved westerly. These beds are within a stratigraphic interval of about 20 feet and range from 1 to 5 feet in thickness. The face of the Stage I drift was in barren siltstone above the third or uppermost lime pebble conglomerate in the drift.

Stage II drift in the south workings was started in the floor of the Stage I drift and about 30 feet back from the face, in order to begin on the third or uppermost lime pebble conglomerate. The Stage II drift (figs. 2 & 3) was driven downward at an inclination of about minus 8 degrees on the third lime pebble conglomerate bed.

The DMEA drift driven southward in the north workings (fig. 1) was driven slightly upward at a low angle of inclination toward the mineralized AEC drill holes. This drift remained on the stratigraphic equivalent of the third or uppermost lime pebble conglomerate all the way to the face.

ORE DEPOSITS AND RESERVES

The lowest lime pebble conglomerate and a few inches of both overlying and underlying siltstone are sporadically mineralized through an average thickness of 3.1 foot in the south DMEA Stage I drift according to 8 samples taken by R. R. McLellan of the Bureau of Mines (fig. 3). These 8 samples were taken 30 to 90 feet in from the start of the DMEA Stage I drift (fig. 2 & 3) and averaged 0.22 percent U_3O_8. This average

grade is believed to be fairly representative of the lowermost lime pebble conglomerate 30 to 90 feet in from the beginning of the south DMEA Stage I drift, though this average may be slightly too high, according to observations recently made by F. M. Byers and H. S. Johnson. The company assays average considerably higher, but these are believed to have resulted from samples placed so as to include erratically distributed uraninite blebs. In the opinion of the DMEA examining geologist no ore can be shipped from the vicinity of this portion of the drift without considerable hand sorting, inasmuch as the high grade blebs of uraninite are too few and far between to carry the whole drift in ore through a distance of 60 feet.

The second or middle lime pebble conglomerate was penetrated in the south drift from about 110 to 150 feet in from the DMEA starting point. This bed is about 4 feet thick. No samples were taken by the DMEA inspectors, but two company samples assayed 0.60 and 0.66 percent U_3O_8 across thicknesses of 1.5 and 0.7 feet respectively. According to observations made not only by the DMEA inspectors, but also by R. T. Chew and R. D. Sample of the U.S. Geological Survey, these assays are not representative of the middle lime pebble conglomerate which is probably also below ore grade in this section of the drift, though high grade uraninite specimens could probably be hand picked.

The third or uppermost lime pebble conglomerate was penetrated in the vicinity of the crosscuts or from about 210 to 290 feet in from the DMEA starting point. This conglomerate is of ore grade, and most of the 197 tons of ore shipped from south workings during 1955, when the DMEA contract was active, came from this ore body. Stope-drifts have been extended a short distance parallel to the main drift in order to mine additional ore from the crosscuts. (These drifts were not paid for under DMEA). Eight samples of the lime pebble conglomerate ore body were taken in the crosscuts by R. R. McLelland and M. H. Salsbury of the Bureau of Mines (fig. 3). These samples averaged 0.17 percent U_3O_8 across an average thickness of 2.9 feet and contained 26 percent of lime. This grade is slightly less than the weighted average of 0.184 percent of U_3O_8 in the 197 tons of ore shipped in 1955. However, the grade of the ore shipped may have been raised by addition of high-grade ore mined near the outcrop.

Under Stage II of the DMEA contract the south drift was driven 250 feet westerly down the 8-degree dip on the third or uppermost lime pebble conglomerate. This conglomerate averages only about 1 foot thick and is at best only erratically mineralized. Large portions of this drift are barren. Four samples taken by Bureau of Mines engineers across an average thickness of about 1-1/2 feet average 0.052 percent U_3O_8. This average is probably too high for the lime pebble conglomerate toward the face of the drift. A fifth sample of an ore-bearing portion of the Stage II drift was taken by M. H. Salsbury in the north wall about 60

feet west and beyond the face of the Stage I drift (fig. 3). This sample assayed 0.57 percent U_3O_8 across 1.3 feet but is representative only of a very limited portion of the drift. A sixth sample was also taken of a mineralized specimen of high-grade, uraninite-bearing carbon in the floor of the drift. This specimen contained 10.4 percent U_3O_8. Similar specimens can be taken elsewhere in the mine and serve as an example of the tendency of the ore to occur in small high-grade masses localized by carbon.

The ore reserve yet remaining in the body at the DMEA crosscuts in the south workings may be as much as 200 tons containing possibly 0.17 percent U_3O_8. However, this reserve will probably never be mined, due to caving of the mudstone-siltstone back. About as much of this ore body has been removed as can be taken economically and without creating a caving problem.

The north DMEA drift was driven on a lime pebble conglomerate at about the same stratigraphic position as the third lime pebble conglomerate of the south drift; they may, however, be two different conglomerate lenses. This DMEA drift was driven about S. 10° E., to reach mineralized AEC drill holes (figs. 2 & 4). The lime pebble conglomerate bed in the north DMEA drift ranges from 1 to 2 feet thick and is only sporadically and weakly mineralized. Eight channel samples taken by R. R. McLelland of the Bureau of Mines 100 to 190 feet in from the DMEA starting point averaged 2.1 foot in thickness and 0.22 percent U_3O_8 (fig. 4). These samples had a range of 0.03 to 0.60 percent in U_3O_8

content, three being below ore grade. This average compares closely with 0.23 percent U_3O_8 actually shipped from this portion of the drift. Nineteen tons of ore shipped from the drift closer to the DMEA faces of 9-8-54 contained only 0.12 percent U_3O_8. Three channel samples averaging 1.4 feet and 0.011 percent U_3O_8 were taken by M. H. Salsbury in the face of the southerly arm of the DMEA drift, and one sample across 1.2 feet and containing 0.13 percent U_3O_8 was taken also by M. H. Salsbury in the face of the southeasterly arm of the DMEA drift.

Possibly 100 tons of ore containing 0.20 percent U_3O_8 might be inferred in the walls of the DMEA drift, north workings (figs. 2 & 4). Mapping of the walls of the north workings by H. S. Johnson and F. M. Byers, Jr., suggests that in meeting the required objective to intersect the AEC drill holes, the DMEA work veered slightly too far easterly off the thicker part of a channel which is vaguely defined by a slightly greater thickness of the lime pebble conglomerate and a slight, 1-foot scour into the east bank of the underlying mudstone. The west bank is even more vaguely defined, as exposed in one of the west crosscuts (figs. 2 & 4) by complex intertonguing westerly of lime pebble conglomerate into mudstone and siltstone. In retrospect, it now appears to the DMEA geologists that the DMEA drift should have been driven for some distance S. 10° W., instead of S. 10° E.; however, this slight thickening or channeling of the lime pebble conglomerate is so vaguely defined that no miner could be expected under any contract to stay in the channel. Furthermore, two barren AEC drill holes would tend to discourage exploration of this thicker part of the lime pebble conglomerate in a S. 10° W. direction.

The long-hole drilling from the DMEA drifts penetrated largely barren or weakly mineralized rock. Two down holes at station 21 and at station 27 near the face of the DMEA Stage II drift in the south workings (fig. 5) penetrated 2 and 2-1/2 feet, containing 0.27 percent and 0.35 percent eU_3O_8, respectively, a few feet below the floor of the drift in what is probably the middle lime pebble conglomerate bed. Down holes, however, at the intervening stations 22 to 26 are barren. Possibly 100 tons of ore might be inferred in the middle lime pebble conglomerate bed on the basis of the long hole drilling. The grade of this ore, however, would probably not exceed 0.20 percent U_3O_8, based on past production. Moreover, this inferred ore cannot be profitably recovered, for it is beneath the floor of the drift. Long hole drilling in the north workings gave negative results except in three holes in the southeast drift where some mineralization was found just below the floor.

The long drill hole below the last work done in the west drift in the South workings indicated, by probing, about 2.5 feet of ore assaying 0.85 percent eU_3O_8 (Hole No. 43). This was later exposed but has never been seen by a DMEA representative because it is under water. It is reported by the applicant to be good ore, ranging from one to two feet thick.

The operator furnished radiometric and geologic logs of all long holes drilled during the project and the results of all sampling done. These results were supplemented by channel sampling done by DMEA inspectors. All long hole drilling, in the opinion of the writers, met contract requirements.

The ore reserve estimates made in this report are not calculated on the results of the project work to date although spotty ore-grade mineralization was found at many points and in a number of drill holes. The operator has developed some of the mineralized material indicated by the DMEA exploration with very poor results, but still has much to do to develop it fully, particularly the mineralized material found both above and below the workings in long drill holes.

THE PROJECT

On the basis of successful mining operations along the outcrop of basal units of Chinle sediments on the Shinarump claims, as well as results of Atomic Energy Commission drilling in the same strata, there appeared to be a reasonable chance of finding minable ore by underground exploration west and south of the outcrop workings, and recommendations were made covering the proposal.

The applicant originally proposed two 600-foot drifts, one extending westward from the face of the south workings and one extending southwesterly from the face of the north workings (fig. 2). These headings were to start in ground reported by the applicant as containing marginal ore and continued into areas in which AEC drilling indicated the presence of mineralization. Because there were three distinct mineralized horizons with essentially barren units between, the DMEA examiners in conference with the applicant proposed long hole percussion drilling downward from the drift to be driven from the north workings and upward from the drift

in the south workings. A raise and sublevel drifting in the south workings was also proposed to explore for mineralization found higher up in AEC drill holes. It was recommended that the work be planned in two stages with the second stage dependent on discovery of significant mineralization in the first stage.

Contract Idm-E 638 was signed November 13, 1953 providing for the following:

	Drifts	Raises	Crosscuts (sublevel)	Percussion Drilling
Stage I				
(a) north workings	275 ft. south 100 ft. southeast			225 ft. in holes 15 ft. downward at 15-foot intervals
(b)(c) south "	90 ft. southwest 260 ft. west	25 ft.	120 ft. north	400 ft. in holes 25 ft. upward at 25-foot intervals
Stage II				
north workings	225 ft. south 250 ft. west			875 feet
Totals	1,200 feet	25 ft.	120 ft.	1,500 feet

The maximum authorized cost was $41,910.00, in which Government participation at 90 percent was rounded to $37,720.00.

In April 1954, Geologic Survey personnel reported that the heading in the south workings was not proceeding according to the plan which provided that the drift be driven in the lower ore-bearing horizon. The long hole drilling above the drift, the raising, sublevel crosscutting,

and part of the drifting footage provided in Stage I of the contract were not needed because the drift had not only been rising in the section and had entered the upper ore zone, but the target area, the vicinity of AEC drill hole DI-206, had been reached in 291 feet instead of 350 feet, an estimate based on an erroneous survey.

Amendment No. 1 to the contract was requested and was made effective July 12, 1954, eliminating items (b) and (c) of Stage I and substituting the following:

(b) Drive the heading from the short adit in the south workings approximately 290 feet in a southwesterly and westerly direction to intersect the position of drill hole DI-206. From the point of intersection with drill hole DI-206,

(1) drive a cross cut approximately N. 10o W. along the ore horizon for a maximum distance of 100 feet to explore the area cut by drill holes DI-204 and DI-207 and

(2) drive a cross cut in a direction of approximately due south along the ore horizon to explore the area cut by drill hole DI-203.

(c) Drill 560 feet of vertical holes either up or down to sample ore horizons above and below the crosscuts. A schedule showing drill hole locations was attached.

Stage I work was completed in October 1954 and a request was made for Stage II work in the south workings only: Although mineralization found was barely of commercial grade as mined, the DMEA examiners

concluded that there was a possibility that the ground explored up to then might mark the fringe of an area of better mineralization to the west. Stage II work was accordingly recommended and was incorporated in a work approval dated November 16, 1954 as follows:

(1) Extend the westerly drift in the south workings an additional 250 feet westerly on the upper ore horizon.

(2) Drill 10 sample holes downward to a depth of 25 feet at 25-foot intervals in the drift under item (1) to explore lower ore horizons. Drill holes were to be probed.

By June 1955, 232 feet of the authorized 250 feet of Stage II drifting, and 9 out of 10 authorized long hole downward were accomplished. The uppermost lime pebble conglomerate followed in this work was only about a foot thick and lay along the floor of the drift. It was erratically mineralized and no minable ore was found, nor was there any indication that the drift was approaching an area of better mineralization.

This completed work under contract no. Idm-E 638. The project was recessed after June 1955 and the mine was closed soon after. Resumption of exploration proposed by the operator on January 18, 1956 consisted of driving the west drift in the south workings an additional 306 feet on a bearing of N. 70° W.

A DMEA examining team concluded that exploration already accomplished has established conclusively that the grade of ore present in the deeper workings is marginal, even if mined selectively, and that there is little possibility of finding any better ore on the property by further work.

Termination of contract no. Idm-E 638 was recommended on April 26, 1956 and was effected by the DMEA Administrator on May 28, 1956, effective March 13, 1956. Certification of Discovery to protect the Government's interest in future production was made on June 22, 1956.

The project resulted in discovery of uranium ore consisting of small blebs of uranium minerals scattered erratically and infrequently in three lime pebble conglomerates in the basal part of the Chinle formation. The ore grade is marginal and cannot be mined profitably at the present time or in the foreseeable future. Data were insufficient for calculation of an ore reserve.

The location of underground drill stations, and the mineralization found by probing is shown in figures 2 and 5. Locations of samples taken for analyses by the operator and by DMEA inspectors and results are shown in figures 3 and 4.

The Government did not share in the purchase of any items of equipment, and there were no problems of salvage or disposal.

SUMMARY AND CONCLUSIONS

Inadequacy and breakdown of mining equipment was a large factor in the slow progress and delays during the project. The fact that haulage units did not function well on steep upgrades against the load, which would have been necessary to keep the headings in the steeply dipping ore horizon, was a contributing factor in the failure to drive the west drift in the south workings as specified in the contract. Inadequate

technical supervision was responsible in part for this failure, because the operator's personnel failed to note that the west drift was cross-cutting the bedding at a low angle rather than following it.

Because of delays and the hand shoveling methods used, costs were high and the unit contract prices did not cover the operator's cost.

Uranium mineralization on the Shinarump claims is erratically distributed as blebs and seams in at least three lime pebble conglomerates in the lower 30 feet of the Triassic Chinle formation. These beds range from 1 to 5 feet in thickness and average about 2 feet thick. Channels are only vaguely defined by slight scouring and by thickening of the beds. The blebs and seams of uraninite are too sparsely and erratically distributed to constitute continuously minable ore in any of the potential ore horizons. Consequently, much work must be done in comparatively barren ground and the ore which is encountered must be sorted in order to make a product which can be shipped at all. The results of long hole drilling have indicated that the tenor of ore is similar in all of the potential ore horizons. It is concluded that exploration accomplished to date has demonstrated that the kind of ore found in the deeper workings cannot be mined at a profit with or without DMEA assistance. There appears to be little possibility that further exploration is likely to disclose any significant ore discoveries.

No further exploration either with or without Government assistance is recommended.

ANNEX

Summary of Project Dates

Item	Date effective
Contract Idm-E 638 signed	November 13, 1953
Amendment No. 1, relating to change in Stage I work,	July 12, 1954
Amendment No. 2, extending contract to 16 months from November 13, 1953	October 12, 1954
Stage I completed	October 1, 1954
Stage II authorized	November 16, 1954
Amendment No. 3, extending contract to 22 months from November 13, 1953	April 5, 1955
Assignment of contract to Thornburg Uranium Mines, Inc. approved	April 28, 1955
Project recessed	June 30, 1955
Amendment No. 4, extending contract to 28 months from November 13, 1953	September 30, 1955
Contract terminated (effective as of March 13, 1956)	May 28, 1956
Certification of Discovery issued	June 22, 1956
Report of Review by Contract and Audit Division DMEA	June 25, 1956

SUMMARY OF FACTUAL DATA

COMPLETED EXPLORATION

Stage I (North workings)

(Authorized by Exhibit A)

Item	Authorized Maximum Feet	Claimed Feet	Approved and Paid for Feet
Southdrift	275	282.0	275.0
SE drift	100	89.5	89.5
Turnout drift	0	5.0	0
Totals	375	376.5	364.5
Long hole drilling	15 holes 225 feet ±	14 holes 210.0 feet.	14 holes 210 ft.

Stage I (South workings)

(Authorized by amendment No. 1)

South (West) drift	290	309.0	309.0
South crosscut	Not described by distance	63.5	63.5
North crosscut	100	97.5	97.5
Turnout drift	0.0	8.0	0.0
Totals	390 ±	478.0	470.0
Long holes up		18 holes-230.0 feet	
Long holes down		16 holes-350.0 feet	
Totals	560.0	580.0	560.0
Chemical analyses for U_3O_8	120	57	57

Approved Expenditures Stage I

834.5 feet drifting and crosscutting at $29.60 per foot	$24,701.20
770 feet long hole drilling at $1.00 per foot	770.00
57 chemical analyses for U_3O_8 at $5.00 each	285.00
Total Stage I	$25,756.20

Stage II (All in South workings)

(Authorized by Field Team's work approval dated 11-16-54)

Item	Authorized Maximum feet	Claimed Feet	Approved and Paid for
West drift	250	232.0	232.0
Long hole drilling (10 holes)	250 ft (9 holes)	225 (9 holes)	225.0

Approved expenditures in Stage II

Drifting	232 feet at $29.60 per foot	$ 6,867.20
Long hole drilling	225 feet at $1.00 per foot	225.00
Total Stage II		$ 7,092.20

SUMMARY OF APPROVED EXPENDITURES

Item	STAGE I Units	STAGE I Funds	STAGE II Unit feet	STAGE II Funds	TOTAL Unit	TOTAL Funds	AUTHORIZED Contract Units	AUTHORIZED Authorized Maximum fund
Drifting and crosscutting	834.5	$24,701.20	232	$6,867.20	1066.5	$31,568.40	1345	$39,810.00
Long hole drilling	770.0	770.00	225	225.00	995.	995.00	1500	1,500.00
Chemical analyses	57	285.00			57	285.00	120	600.00
Totals		$25,756.20		$7,092.20		$32,848.40		$41,910.00

SUMMARY OF UNEXPENDED BALANCES

Drifting	1345 feet minus 1066.5 feet, or 278.5 feet at $29.60 per foot or	$8,243.60
Long hole drilling	1500 " " 995 " " 505 " " $ 1.00 " " "	505.00
Chemical Analyses	120 minus 57 or 63 at $5.00 each or	315.00
	Total	$9,063.60*

* The actual total unexpended balance is $9,061.60 because the amount entered in Exhibit A of the contract for drilling was erroneously calculated as $39,810.00 instead of $39,812.00.

Following is a table of ore shipments through December 1955, as shown by Atomic Energy Commission records:

Period	North Workings Dry tons	North Workings Content percent U_3O_8	South Workings Dry tons	South Workings Content percent U_3O_8
Thru Dec. 1953	538	0.43	270	0.30
Jan.-March 1954	19.8	0.21	86.8	0.23
July-Sept. 1954	53.4	0.16	19.4	0.12
Oct.-Dec. 1954			19.7	0.16
Jan.-Mar. 1955			72.4	0.19
Apr.-June 1955	25.7	0.15	85.3	0.20
Totals	636.9	0.39	553.6	0.25

The last shipments from the South workings include sorted high grade ore saved from previous stoping which was mixed with the lower grade current production. Therefore, the settlement value does not represent the grade of ore mined from workings driven with DMEA funds.

A total of $444.90 has been paid to the Government covering DMEA royalties due on ~~474.02~~ 493.703 tons of ore shipped between November 13, 1954 and December 31, 1956.

The Government did not participate in the purchase of any items of equipment, and there were no problems of salvage or disposal in terminating the contract.

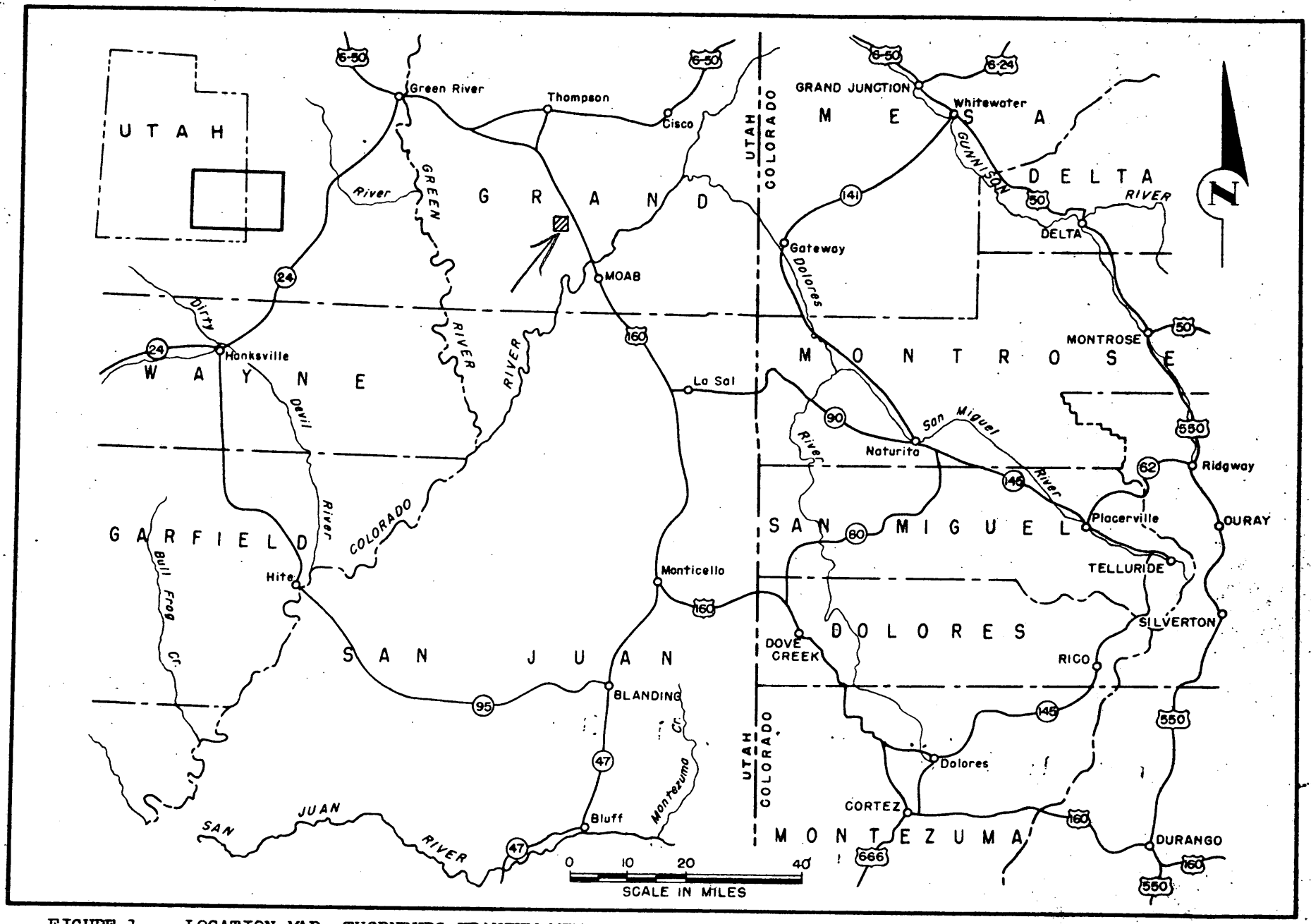
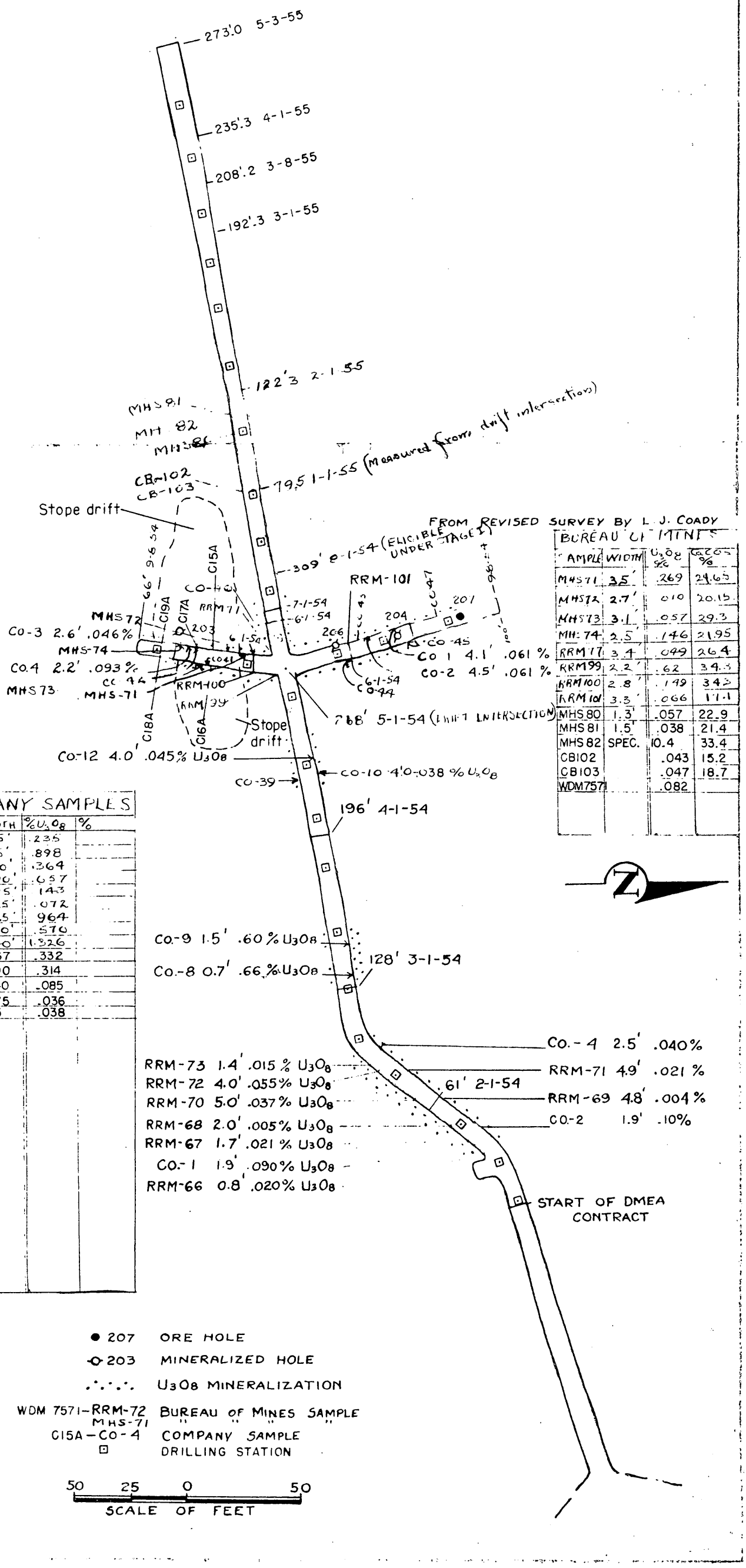


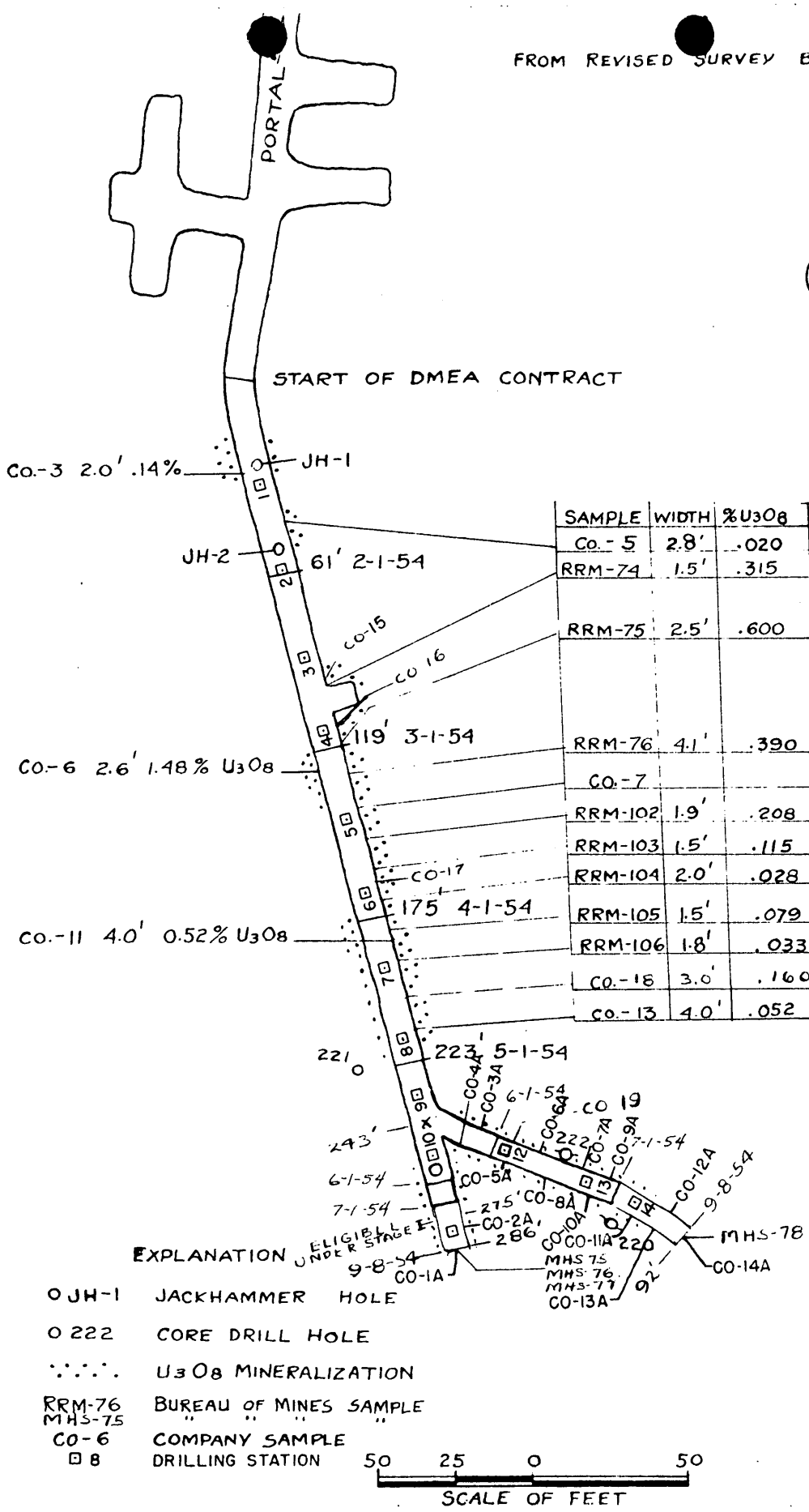
FIGURE 1. - LOCATION MAP, THORNBURG URANIUM MINES, INC., SHINARUMP GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH. (DMEA 3060) CONTRACT Idm-E638.



COMPANY SAMPLES			
SAMPLE	WIDTH	% U_3O_8	%
CO-39	2.75'	.235	
CO 40	3.25'	.898	
CO-41	1.80'	.364	
CO 42	2.90'	.657	
CO 43	2.75'	143	
CO 44	3.25'	.072	
CO-45	2.25'	964	
CO-46	2.10'	.570	
CO-47	2.40'	1.326	
C15A	2.67	.332	
C16A	.90	.314	
C17A	2.40	.085	
C18A	1.75	.036	
C19A	1.5	.038	

BUREAU OF MINES			
SAMPLE	WIDTH	U_3O_8 %	$CaCO_3$ %
MHS71	3.5'	.269	29.65
MHS72	2.7'	010	20.15
MHS73	3.1'	.057	29.3
MH 74	2.5'	.146	21.95
RRM 17	3.4'	.049	26.4
RRM99	2.2'	.62	34.3
RRM100	2.8'	.149	34.3
RRM101	3.3'	.066	17.1
MHS 80	1.3'	.057	22.9
MHS 81	1.5'	.038	21.4
MHS 82	SPEC.	10.4	33.4
CB102		.043	15.2
CB103		.047	18.7
WDM7571		.082	

FIGURE 3 - MAP OF SOUTH WORKINGS, THORNBURG URANIUM, MINES, INC., SHINARUMP CLAIMS, SHOWING MINERALIZED AREAS AND SAMPLE LOCATIONS, DMEA 3060, CONTRACT IDM-E638



SAMPLE	WIDTH	%U3O8
Co.-5	2.8'	.020
RRM-74	1.5'	.315
RRM-75	2.5'	.600
RRM-76	4.1'	.390
Co.-7		
RRM-102	1.9'	.208
RRM-103	1.5'	.115
RRM-104	2.0'	.028
RRM-105	1.5'	.079
RRM-106	1.8'	.033
Co.-18	3.0'	.160
Co.-13	4.0'	.052

SAMPLE	WIDTH	%U3O8	%CaCO3
MHS 75	0.8'	0.005	62.5
MHS 76	2.0'	0.012	20.7
MHS 77	1.5'	0.016	48.2
MHS 78	1.2'	0.135	66.4

COMPANY SAMPLES		
CO-15	1.75	.258
CO-16	2.33	1.202
CO-17	3.33	0.987
CO-19	2.[illegible]	0.296
CO-1A	1.6	0.042
CO-2A	1.1	0.201
CO-3A	1.4	0.542
CO-4A	1.2	0.058
CO-5A	1.8	0.040
CO-6A	1.9	0.576
CO-7A	1.3	0.062
CO-8A	3.3	0.110
CO-9A	1.4	0.469
CO-10A	0.8	0.094
CO-11A	1.3	0.038
CO-12A	3.1	0.098
CO-13A	1.3	0.166
CO-14A	1.2	0.047

FIGURE 4 - MAP OF NORTH WORKINGS, THORNBURG URANIUM MINES, INC., SHINARUMP CLAIMS, SHOWING MINERALIZED AREAS AND SAMPLE LOCATIONS, DMEA 3060, CONTRACT IDM-E638

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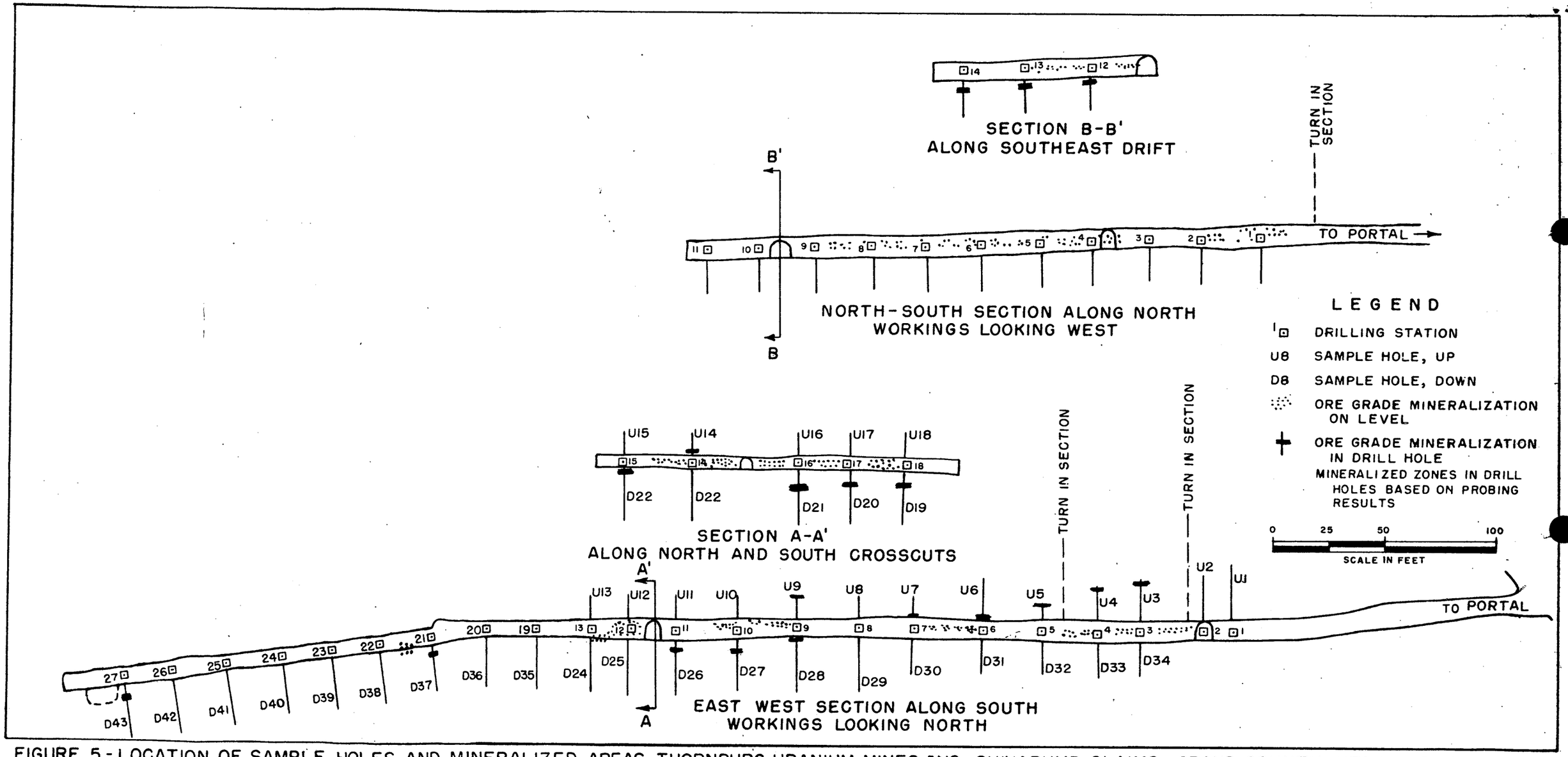

FIGURE 5 - LOCATION OF SAMPLE HOLES AND MINERALIZED AREAS, THORNBURG URANIUM MINES, INC., SHINARUMP CLAIMS, GRAND COUNTY, UTAH. DMEA 3060
CONTRACT IDM-E638

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

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
Rm. New Customhouse Building
Denver 2, Colorado

Re: Field Team final reports
(Uranium contracts)

Dear Mr. Traver:

A review of the files on DMEA uranium contracts, where the work has been completed by the Operator or the work has been terminated for over six months, reveals that the final Field Team reports have not been received for the contracts listed below:

Contract No.	Docket number	Operator
Idm-4361	DMEA-2135	Sunnyside Uranium Company (Stage III)
Idm-4517	DMEA-2857	Sodak Uranium & Mining Company, Inc.
Idm-4631	DMEA-3092	Rare Earth Mining Company
Idm-4638	DMEA-3060	Thornbury Uranium Mines
Idm-4691	DMEA-3239	Drove Co.
Idm-4723	DMEA-3360	Mid-Continent Uranium Corp.
Idm-4796	DMEA-3582	J. Walter Duncan, Jr.
Idm-4823	DMEA-3514	Climax Uranium Co.
Idm-4860	DMEA-3613	Chato Uranium Mining Company, Inc.
Idm-4870	DMEA-3762	Thanksen Oil Co.
Idm-4877	DMEA-3767	Uranium Prospectors Co., Ltd.
Idm-4906	DMEA-3868	La Salle Mining Co.
Idm-4910	DMEA-3896	Beola Mining Company
Idm-4926	DMEA-3982	Nortute Corporation

Kindly advise the status of the preparation of these reports and the date they may be expected in Washington. It is requested that these reports be given priority wherever possible in order that our dockets may be closed on these older projects.

Sincerely yours,

George C. Selvidge

Chairman, Operating Committee

APPROVED:
P. F. Yopes

Member, Bureau of Mines
Thor H. Kiilsgaard

Member, Geological Survey

EWE/gla 12-28-56
cc to: Admr.'s Reading File 14 dockets
Operating Committee
J. E. Crawford, 3643
T. H. Kiilsgaard, 5224
J. O. Hosted, 3210, GSA
Code 700

DMEA
DEPARTMENT OF THE INTERIOR
NOV 21 1956
REGION III
DENVER, COLORADO

November 20th
1956

RECEIVED
NOV 26 1956
D.M.E.A.

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region 111
224 New Customhouse
Denver 2, Colorado.

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E-638

Dear Mr. Traver:

We are replying to your letter of November 16th, 1956, relative to AEC bonus payments on production of the first 10,000 pounds of U308 from the claims designated under the above stated contract.

We wish to advise that during the year of 1952 Thornburg Mining Company applied for and received the final bonus payment which consummated the eligible AEC balance due under these claims.

We therefore have not applied for or received any AEC bonus payment pertaining to the claims listed under Contract IDM-E-638.

Very truly yours,

Thornburg Uranium Mines, Inc.

By J. T. Tunnell
J. T. Tunnell, Office Mgr.

JTT/g

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

224 New Customhouse
Denver 2, Colorado

November 16, 1956

Mr. J. T. Tunnell, Office Manager
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Dear Mr. Tunnell:

To bring our royalty files current, you are requested to submit an original and six (6) copies of a statement regarding your status of eligibility to receive AEC bonus payments for production of the first 10,000 lbs of U_3O_8 from land subordinated to the Government by the terms of Contract Idm-E638.

Yours very truly,

Original signed by
W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E638
Corres. File E638
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

11-13-56

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

224 New Customhouse
Denver 2, Colorado

Date: November 8, 1956

RECEIVED NOV 13 1956 D.M.E.A.

Memorandum

To: Chairman, Operating Committee, DMEA
From: Executive Officer, DMEA Field Team, Region III
Subject: Royalty payments, Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Mining Company (Shinarump Claim), Grand County, Utah
Period: October, 1956

Enclosed are settlement sheets for which royalty payments were received for ore or concentrates shipped from the subject property during the above month:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
12/9/53	4662	19.762	$27.72	$27.72	No bonus due	
12/9/53	4663	37.547	38.94	38.94		
1/14/54	4765	19.814	18.91	18.91		
1/14/54	4766	58.037	57.87	57.87		
2/9/54	4900	28.778	30.94	30.94		

Above settlement sheets and royalty requested per our letter 9/14/56.

Totals:	163.938	$174.38	$174.38

Past Due Royalties Collected None

Total Dry Tons (Ore or Cons.) Shipped to Date 493.703

W. M. Traver

vj
cc: Royalty File E 638 w/settlement sheets
Monthly Royalty Payment File
J. F. Shaw (2) w/settlement sheets
Chron.

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

224 New Customhouse
Denver 2, Colorado

Date: November 8, 1956

RECEIVED NOV 13 1956 D.M.E.A.

Memorandum

To: Chairman, Operating Committee, DMEA
From: Executive Officer, DMEA Field Team, Region III
Subject: Royalty payments, Docket DMEA 3060 (Uranium), Contract Idg-E638, Thornburg Mining Company (Shinarump Claim), Grand County, Utah
Period: October, 1956

Enclosed are settlement sheets for which royalty payments were received for ore or concentrates shipped from the subject property during the above month:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
12/9/53	4662	19.762	$27.72	$27.72	No bonus due	
12/9/53	4663	37.547	38.94	38.94		
1/14/54	4765	19.814	18.91	18.91		
1/14/54	4766	58.037	57.87	57.87		
2/9/54	4900	28.778	30.94	30.94		

Above settlement sheets and royalty requested per our letter 9/14/56.

Totals: 163.938 $174.38 $174.38

Past Due Royalties Collected None

Total Dry Tons (Ore or Cons.) Shipped to Date 493.703

Original signed by
W. M. TRAVER

W. M. Traver

cc: Royalty File E 638 w/settlement sheets
Monthly Royalty Payment File
J. F. Shaw (2) w/settlement sheets
Chron.

Form No. 4 12-28-1951

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado December 9 1953

Liquidation No. 1468 — Lot No. 9872 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. R-1024

Address E. J. Rank Bldg., Grand Junction, Colorado

Type of Ore Shinarump — Contract No. 216 — Date Received 11/17-21/53

Mining Claim Shinarump #3 — Mining District Seven Mile — Pile No. 23

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	SETTLEMENT ASSAYS V_2O_5	SETTLEMENT ASSAYS $CaCO_3$	CONTENTS POUNDS U_3O_8	CONTENTS POUNDS V_2O_5	CONTENTS POUNDS $CaCO_3$
9872	40330	2.00	39524	.32			126.48		

U308	Per Lb.	Per Ton	Short Tons	Total Value
.32% - 6.4# at	$3.50	$22.40	19.7620	$442.67
Development allowance 6.4# at	.50	3.20	"	63.24
Premium in excess of 4# per ton 2.4# (6.4# - 4# = 2.4#) at	.75	1.80	"	35.57
TOTAL U308 PAYMENT		$27.40	19.7620	$541.48
Haulage allowance 70 miles @ 6¢ per wet ton mile			20.1650	84.69
TOTAL				$626.17
Lime Penalty as per contract, 15%				- 71.74
TOTAL GROSS PRICE				$554.43
Deductions				---
NET PROCEEDS				$554.43

Correct HLC
Checked LRJ
Approved HCJ

Paid December 9, 1953
Vo. No. 12/51
Check No. 10674

NOV 13 1956 D.M.E.A.

DMEA
DEPARTMENT OF THE INTERIOR
OCT 15 1956
REGION III
DENVER, COLORADO

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent.

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E 638

Form No. 6 [illegible]

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station [illegible] Utah — Grand Junction, Colorado December 9 1953

Liquidation No. [illegible] 4663 — Lot No. [illegible] — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. R-102[illegible]

Address [illegible] Grand Junction, Colorado

Type of Ore [illegible] — Contract No. [illegible] — Date Received [illegible]

Mining Claim [illegible] — Mining District Seven Hills — Pile No. [illegible]

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	SETTLEMENT ASSAYS V_2O_5	SETTLEMENT ASSAYS $CaCO_3$	CONTENTS POUNDS U_3O_8	CONTENTS POUNDS V_2O_5	CONTENTS POUNDS $CaCO_3$
[illegible]	7[illegible]0	1.[illegible]	750[illegible]	.23			172.72		

[illegible]	Per Lb.	Per Ton	Short Tons	Total Value
.23% = 4.6# at	$3.50	$16.10	37.5470	$604.50
Development allowance 4.6# at	.50	2.30	"	86.36
Premium in excess of [illegible] per ton .6# (4.6# - [illegible] = .6#) at	.75	.45	"	16.90
TOTAL U_3O_8 PAYMENT		$18.35	37.5470	$707.76
Haulage allowance 70 miles [illegible] per net ton mile			39.1050	164.24
TOTAL				$872.00
Lime Penalty as per contract, 15%				- 93.21
TOTAL GROSS PRICE				$778.79
Deductions				- - -
NET PROCEEDS				$778.79

Correct [illegible]
Checked UEJ
Approved HCJ

Paid December 9, 1953
Vo. No. 12/51
Check No. 10674

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent.

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E 638

Form No. [illegible]

#19

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Durango, Utah — Grand Junction, Colorado January 14 1954

Liquidation No. [illegible] 4765 — Lot No. 1007A — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. R-1024

Address U. S. Bank Bldg., Grand Junction, Colorado

Type of Ore Shinarump — Contract No. 216 — Date Received 12/15-17/53

Mining Claim Shinarump #3 — Mining District Seven Mile — Pile No. 23

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	SETTLEMENT ASSAYS V_2O_5	SETTLEMENT ASSAYS $CaCO_3$	CONTENTS POUNDS U_3O_8	CONTENTS POUNDS V_2O_5	CONTENTS POUNDS $CaCO_3$
1007A	41230	3.89	39627	.22			87.22		

	Per Lb.	Per Ton	Short Tons	Total Value
.22% - 4.2# up	$3.50	$14.70	19.8135	$291.26
Development allowance 4.2# at	.50	2.10	"	41.61
Premium in excess of 4# per ton 4.2# (.4#) - .2# at	.75	.25	"	2.97
TOTAL U_3O_8 PAYMENT		$16.95	19.8135	$335.84
Haulage allowance 70 miles (4 per wet ton mile			20.6150	86.58
TOTAL				$422.42
V205				---
Less Lime Penalty - 15% as per contract				- 44.13
TOTAL GROSS PRICE				$378.29
Deductions				---
NET PROCEEDS				$378.29

Correct HKC — Paid January 14, 1954
Checked LRJ — Vo. No. 1/60
Approved HCJ — Check No. 10986

edr

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent.

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E 638

Form No. 11-56-P2

#19

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station: Monticello, Utah — Grand Junction, Colorado: January 14, 1954

Liquidation No.: A765 — Lot No.: 10083 — Shippers Lot No.:

Bought of: Thornburg Mining Company — A.E.C. License No.: P-1024

Address: U. S. Rank Bldg., Grand Junction, Colorado

Type of Ore: Shinarump — Contract No.: 216 — Date Received: 12/7-9-11-16-23-31/53

Mining Claim: Shinarump 2-4 — Mining District: Seven Mile — Pile No.: 23

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
10083	121510	4.47	116073	.22			255.36		

U308	Per Lb.	Per Ton	Short Tons	Total Value
.225 - 4.47 at	$3.90	$15.40	50.0365	$893.76
Development allowance 4.47 at	.50	2.20	"	127.68
Premium in excess of .4 per ton (4.47 - .4 = .47) at	.75	.30	"	17.41
TOTAL U308 PAYMENT		$17.90	50.0365	$1,038.85
Haulage allowance 70 miles 6¢ per net ton mile			60.7550	255.17
TOTAL				$1,294.02
V205				---
Less Lime Penalty - 15% as per contract				- 136.68
TOTAL GROSS PRICE				$1,157.34
Deductions				---
NET PROCEEDS				$1,157.34

Correct WKC — Paid January 14, 1954
CHECKED IRJ — Vo. No. 1/60
Approved HCJ — Check No. 10926

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent.

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E 638

Form No. 4 11-53-'OM

#1

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado February 9 1954

Liquidation No. ~~4900~~ 4900 Lot No. 10272 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. F-1024

Address U. S. Bank Bldg., Grand Junction, Colorado

Type of Ore Shinarump — Contract No. 19 2-6 — Date Received 1/13-14-15/54

Mining Claim Shinarump 1-A — Mining District Seven Mile — Pile No. 23

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	SETTLEMENT ASSAYS V_2O_5	SETTLEMENT ASSAYS $CaCO_3$	CONTENTS POUNDS U_3O_8	CONTENTS POUNDS V_2O_5	CONTENTS POUNDS $CaCO_3$
10272	59130	2.66	57556	.24			138.13		

U_3O_8	Per Lbs.	Per Ton	Short Tons	Total Value
.24% = 4.8# at	$3.90	$16.80	28.7780	$483.46
Development allowance 4.8# at	.50	2.40	"	69.07
Premium in excess of 4# per ton 4.8# - 4# = .8# at	.75	.60	"	17.27
TOTAL U_3O_8 PAYMENT		$19.80	28.7780	$569.80
Haulage allowance 70 miles @ 6¢ per wet ton mile			29.5650	124.17
TOTAL				$693.97
Less Lime Penalty - 15% as per contract				- 75.11
TOTAL GROSS PRICE				$618.86
Deductions				- - -
NET PROCEEDS				$618.86

Correct GHC — Paid February 9, 1954
Checked LRJ — Vo. No. 2/58
Approved HCJ — Check No. 11187

ctr

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent.

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E-638

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

RECEIVED
OCT 25 1956

224 New Customhouse
Denver 2, Colorado

October 23, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA 3060 (Uranium), Contract No. Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump claims), Grand County, Utah.

Enclosed are the original and one copy of a final report, submitted by the Operator, pertaining to work completed under Contract No. Idm-E638.

Reimbursement to the Operator in processing form MF-104, Operator's Monthly Report and Voucher, for the month of June, 1955, constitutes final payment under the terms of the contract. The aggregate payment to the Operator of $29,563.56 was confirmed as acceptable by the Report of Review of contract expenditures by the Contract Administration and Audit Division, dated June 25, 1956.

The Field Team's final report will be submitted as soon as the engineering and geologic sections are available.

W. M. Traver

W. M. Traver

Enclosures

THORNBURG URANIUM MINES, INC.
160 West Main Street
Phone 269
Grand Junction, Colorado

October 15th, 1956

RECEIVED
OCT 25 1956
DMEA
DEPARTMENT OF THE INTERIOR
OCT 19 1956
REGION III
DENVER, COLORADO

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region 111
224 New Customhouse
Denver 2, Colorado.

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E-638

Dear Mr. Traver:

Relative to the above stated contract which was terminated under date of March 13, 1956, we submit herewith the final papers, consisting of our engineer's report together with map of the operations.

Also included are five (5) copies of a summarized financial statement indicated by our records as of this date.

We trust that you will find this report to be in order.

Very truly yours,

J. T. Tunnell

JTT/g

RECEIVED
OCT 25 1956

DMEA
DEPARTMENT OF THE INTERIOR
OCT 19 1956
REGION II
DENVER, COLORADO

FINANCIAL STATEMENT
-as of-
October 15th, 1956

Docket DMEA 3060 (Uranium)
Contract Idm-E-638)

Terminated March 13, 1956)

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado.

1066.5	Feet of Drifting	@	29.60	----	31,568.40
995	" " Jackhammer Holes		1.00	----	995.00
57	Assay Samples		5.00	----	285.00
					32,848.40
Less Operator's 10% Participation					3,284.84
Government's 90% Participation					29,563.56
Less 5% Royalties applied to date					444.90
Remaining balance due					29,118.66

Respectfully submitted,

Thornburg Uranium Mines, Inc.

By J. T. Tunnell
J. T. Tunnell

RECEIVED
OCT 25 1956

DMEA
DEPARTMENT OF THE INTERIOR
OCT 19 1956
REGION
DENVER, COLORADO

OPERATOR'S FINAL REPORT

Docket DMEA 3060, Contract Idm-E638

Thornburg Mining Company
(Thornburg Uranium Mines, Inc.)

Grand County, Utah
(Uranium)

Exploratory work under Contract Idm-E638 was begun by the Thornburg Mining Company on the Seven Mile property in Grand County, Utah on January 5, 1954. The first work under the contract consisted of underground drifting begun both in the north and the south workings on the Seven Mile property. The starting points and the progress by months is shown on the attached map. The drifting under Stage I of the contract was completed in September, 1954 and the drifting under Stage II was completed in June, 1955 after a total of 1066.5 linear feet of underground drifting and cross-cutting had been completed.

The underground percussion long-hole drilling allowed by the contract was started in February, 1954 but was recessed until the completion of the drifting and the largest percentage of the total of 995.0 feet was completed during June, 1955. The location of the drill holes are shown on the attached map and are indicated by the small squares in the middle of the drifts designated by station numbers.

The total expenditures during the exploratory work as indicated by the final MF-104 forms, is tabulated as follows:

Drifting, north and south workings, both stages, 1066.5 lin. ft. @ $29.60	$31,568.40
Drilling, up and down holes, 995 lin. ft. @ $1.00 per foot	995.00
Assaying, 57 samples for uranium @ $5.00 each	285.00
Total expenditures for exploratory work at rates indicated by the contract.....	$32,848.40

The above figure represents the total expenditures and the Thornburg Mining Company was reimbursed in the amount of 75% of the total.

The exploration program ultimately agreed upon by the Thornburg Mining Company and the DMEA was designed to explore the lower beds of the Triassic Chinle formation at and immediately above it's contact with the underlying Moenkopi formation. Ore had been mined on the outcrop of the ore horizon and diamond drill holes indicated mineralization or ore at one or more levels in the bottom section of the Chinle in the area through which the exploratory drifts were run. The mineralization in the drill holes in the south workings was encountered and exploration under DMEA contract and on company account developed ore in the general area of the drill holes.

The underground drifting and samples taken in the underground workings allowed the calculation of an ore reserve considered by the company to be profitably mineable. However, the holes drilled by long-hole percussion drill from stations in the drifts allowed the increase of the ore reserve by the discovery of ore above and below the level of the drifts. This ore was found to be in irregularly shaped pods of sporadic occurrence and of only moderate grade. It should be noted that most of this ore would not have been discovered had it not been for the up holes and down holes drilled from the drift. The holes were originally suggested as part of the exploration program as a result of the AEC drilling which found ore and mineralization at various levels in the lower beds of the Chinle as noted in an above paragraph.

The mapping and resultant cross sections through the ore bodies gives geologic information which will be a valuable base upon which to plan further exploratory work and will ultimately guide the planning of a mining operation in the Seven Mile workings. It is apparent that the discontinuity of the ore bodies as well as their characteristic of occurring at different levels within the bottom beds of the Chinle will result in a high cost mining operation but it is believed that, as a result of the DMEA work, the mining can be planned to overcome this inherent difficulty. The mining operation conducted before the DMEA work indicates that a practical operation can be maintained on these irregular ore bodies by careful mining practices.

Work on company account subsequent to the finishing of the project work under Contract Idm-E638 indicates that the mineralization continues up Corral Canyon to the west of the area of the DMEA contract.

An ore reserve estimate prepared by the operator shows the following ore reserve resulting from the underground drifting and the long-hole percussion drilling.

Total of ore bodies, north and south workings, 12,024 tons of an estimated value of $531,780.

Inferred ore (in the area between the north and south workings) 12,000 tons of estimated value $531,700.

It is concluded from the results of the exploratory work carried on under the DMEA contract that a successful mining operation can be planned for the area of the DMEA drifts and, as a result of the information gained regarding the character of the ore bodies, in the ground between the north and south workings.

Respectfully submitted,

H. K. Thurber, Jr.
Mining Engineer

TEDABORS URANIUM MINES, INC.
160 West Main Street
Phone 240
Grand Junction, Colorado

October 18th, 1956

Mr. [illegible]
Executive Officer
[illegible]
[illegible]
[illegible]

RECEIVED
OCT 19 1956

Dear Sir, [illegible]

[illegible]

[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

THORNBURG URANIUM MINES, INC.
160 West Main Street
Phone 363
Grand Junction, Colorado

October 3rd, 1956

RECEIVED
OCT 8 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region 111
224 New Customhouse
Denver 2, Colorado.

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E-636

Dear Mr. Traver:

Your letter of October 1st, 1956, relative to the above captioned contract, together with your letter of September 14th, 1956, addressed to Mr. L. Reid Johnston, has been referred to my attention.

Due to frequent absences from our office I have been late in getting the final report under way. However, please be advised that we are in process of finishing the report together with the information asked for in your letter of September 14th.

This data should be completed some time next week or not later than October 15th.

Very truly yours,

THORNBURG URANIUM MINES, INC.

By J. T. Tunnell

JTT/R

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

RECEIVED
OCT - 3 1956

224 New Customhouse
Denver 2, Colorado

CERTIFIED MAIL

October 1, 1956

Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket No. DMEA 3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
(Shinarump claims)
Grand County, Utah

Gentlemen:

By our letter of May 28, 1956, we forwarded the "Operator's Copy" of a "TERMINATION AGREEMENT" which had been executed to terminate Contract No. Idm-E638, effective March 13, 1956.

At that time, we called your attention to the requirement of furnishing a final engineering and geologic report pertaining to the work completed under the contract, as provided under Article 5 (b) of the contract form and as stipulated under item 3 of the "TERMINATION AGREEMENT."

We requested your prompt attention to the matter. However, considerable time has elapsed and we have not received your final report.

Please advise by return mail as to the date on or before which we can expect to receive the required report.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JWT:prl

cc: Chairman, Oper. Comm. (2)
Harshman
Shaw (2)
Hasler
Townsend
Corres. file
Chron.

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

RECEIVED
SEP 17 1956

224 New Customhouse
Denver 2, Colorado

September 13, 1956

Memorandum

To: J. F. Shaw (2)

From: Executive Officer, DMEA Field Team, Region III

Subject: Reporting error in Semiannual Report of Certified Project for the period January 1, 1956 through June 30, 1956, Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

In the semiannual report for the subject contract recently submitted to this office, an amount has been entered after the item Amount of Royalty Due when the word "None" is appropriate.

Royalty is due the Government when production is made from the land described in the contract, and then in the manner and amount as set forth by the contract. Hence, no amount is to be entered after this item unless the Operator owes the Government royalty on the actual or assigned value of production, which was made on or before the last date of the period covered by the report.

Please have this fact brought to the attention of the examining engineer who prepared the above mentioned report.

W. M. TRAVER

W. M. Traver

MEM/vj

cc: Semiannual Report File E638
Sec. Opr. Comm. (2)
E. N. Harshman
J. W. Hasler
Marshall
Chron.

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

RECEIVED
SEP 17 1956

224 New Customhouse
Denver 2, Colorado

September 14, 1956

Mr. L. Reid Johnston, Office Manager
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Royalty Payments, Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Shinarump Claims), Grand County, Utah

Dear Mr. Johnston:

In a letter dated January 11, 1954, Mr. J. T. Tunnell, Office Manager, Thornburg Uranium Mines, Inc., advised this office that a small (35 to 40 tons) stockpile was located on property subordinated to the Government under Contract Idm-E638. In this connection, Mr. Tunnell requested that we "...recognize this lot of ore as not being subject to the DMEA contract."

The Executive Officer's reply dated January 20, 1954 advised "...no royalty payment is due on the sale of this ore if it were mined prior to November 13, 1953."

Subsequent to our reply, the first shipment for which production was reported and royalty paid was on Liquidation No. 6064, dated September 9, 1954, covering purchase of 19.44 dry tons of ore. We accepted this settlement as evidence of the first production mined after the date of the contract. Similarly, production records for property subordinated to the Government under Contract Idm-E638 were expected to indicate sales of no more than 40 tons of ore between January 11, 1954 and September 9, 1954. The following tabulation of AEC production records, however, does not appear to bear this out:

Liq. No.	Quarter Year	Claim		Dry Tons
----	4th '53	Shinarump	1A	23.84
----	1st '54	"	1	36.77
----	1st '54	"	1A	86.82
----	1st '54	"	3	19.81
6064	3rd "54	"	1A	19.44

We therefore find it difficult to reconcile the amount of production for which royalty has been paid with the amount of production for which royalty is due the Government.

You are requested to explain the noted discrepancy, and furnish this office with copies of settlement sheets for all production made from the date of the contract to September 9, 1954. This request includes settlement on sales of ore stockpiled at the date of the contract.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E638
Corres. File E638
Semiannual Report File E638
Sec. Opr. Comm. (2) w/cys of pertinent corresp.
J. F. Shaw (2)
Marshall
Chron.

THORNBURG MINING COMPANY
160 West Main
Grand Junction, Colo.

RECEIVED
JAN 17 1954

January 11th, 1954

Mr. W. M. Traver Jr., Chief,
Mineral Resources Branch
Mining Division, Region IV
Building 20, Room 137
Denver Federal Center
Denver 14, Colorado.

Re: Docket No. DMEA-3060
Contract Ida-2638

Dear Sir:

Please be advised that we have a small stock pile of ore at our mine consisting of about 35 to 40 tons. This ore was mined previous to January 5th, 1954, the starting date of our DMEA. Your territory engineer, Mr. R. R. McLellen, made note of this stock pile under date of January 5th, 1954.

We are shipping this ore to the mill and ask that you recognize this lot of ore as not being subject to the DMEA contract.

All ore mined under the DMEA contract operations will be stock piled and held for inspection by your engineer before we make shipment, if you so desire.

Very truly yours,

THORNBURG MINING COMPANY

By /s/ J. T. Tunnell
J. T. Tunnell, Office Mgr.

JTT/g

RECEIVED
SEP 17 1953

224 New Customhouse
Denver 2, Colorado

January 20, 1954.

Mr. J. T. Tunnell, Office Manager
Thornburg Mining Company
160 West Main
Grand Junction, Colorado

Re: Royalty Payments - DMEA Docket No. 3060 (Uranium), Contract No. Idm-E638, Thornburg Mining Company, Grand County, Utah.

Dear Mr. Tunnell:

Your letter dated January 11, 1954, addressed to W. M. Traver, Jr., Chief, Mineral Resources Branch of the Bureau of Mines, Region IV, concerning payment of royalty on ore mined from the subject property was referred to this office.

You are hereby advised that royalty payments are due on all ore mined from the six claims listed in Annex I to Contract Idm-E638 since November 13, 1953 (the date of the contract) and not from January 5, 1954 (the starting date of DMEA work) as stated in your letter.

Regarding the 35 to 40 tons of uranium ore stockpiled on the Thornburg Mining Company property, no royalty payment is due on the sale of this ore if it was mined prior to November 13, 1953.

You are referred to Annex II of Contract Idm-E638 for regulations regarding royalty payments pertaining to this contract.

Regarding paragraph 3 of your letter, you are not required to stockpile your ore for inspection before shipment.

Very truly yours,

W. H. KING

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

RDB:cwm

cc: Contract
WMTraver
Royalty File
RDBerkenkotter
Chron

7-13-56

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

RECEIVED
JUL 12 1956

224 New Customhouse
Denver 2, Colorado

Date: July 9, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Mining Company (Shinarump claim) Grand County, Utah

Period: June, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

Date	Lot No.	Dry Tons	Royalty Due	Royalty Paid	Bonus Roy. Due	Bonus Roy. Pd.
			(None)			

Totals:

Past Due Royalties Collected on Liq. Nos 7827 & 7895 - $22.19
per our letter dated 6/18/56 to Thornburg Uranium Mines, Inc.

Total Dry Tons (Ore or Cons.) Shipped to Date	329.765
Expiration Date of Royalty Repayment	Nov. 13, 1964
Amount of Government Participation	Not determined
Total Royalty Payments to Date	$270.52
Percent of Loan Repayment	-- --

W. M. Traver

W. M. Traver

vj

cc Royalty File E 638 w/Settlement Sheets
Monthly Royalty Payment File
S. R. Wilson
Chron.

Surname copy

700

Ching
Ellis
Butin
Lawyer
Paona
Crawford
Kilsgaard
Yager
Martin
FE Johnson

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

Mr. Vance Elton Thornburg
Thornburg Uranium Mines, Inc.
160 West Main
Grand Junction, Colorado

JUN 2

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Shinarump Claims
Grand County, Utah

Dear Mr. Thornburg:

Enclosed is a "Certification by the United States of America of a Discovery or Development Under an Exploration Project Contract." This certification covers all the land described in Article 2 of the subject contract.

By the terms of the Exploration Project Contract, as amended, and of the certification, all uranium and other valuable minerals produced from the claims described in Article 2 of the contract, from November 13, 1953, the date of the contract, are subject to the Government's percentage royalty as set forth in the contract until the sum which the Government has advanced as its participating interest is repaid, or until November 13, 1964, whichever occurs first.

Payments should be made to Mr. W. M. Traver, Executive Officer, DMEA Field Team, Region III, 224 New Customhouse Building, Denver 2, Colorado. Checks should be payable to the Defense Minerals Exploration Administration. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward the check directly to the Executive Officer. Any bonus payments or allowances received by you from the sale of ore are considered to be a part of the purchase price to which the Government's royalty applies. Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets, showing quantity and grade of the products sold, the name of the purchaser, and the price and charges, certified to be correct by the purchaser.

You are requested to notify Mr. Traver of any changes in ownership or production rights that might have any effect on the Government's right to its percentage royalty. Also, if production ceases at any time for an extended period, please notify Mr. Traver at six-month intervals that no production has been made, when that is the case.

Sincerely yours,

G. O. Mittendorf

Administrator

Enclosure

FROM SOLICITOR
JUN 18 1956
FOR SIGNATURE

MChing/gla 6-15-56
cc to: Admr.'s Reading File
Operating Committee
Robert W. Geehan, Rm. 3608
T. H. Kilsgaard, Rm. 5224

Field Team, Region III (2)
Docket
Rare and Misc. Metals Division
Contract Adm. & Audit Division
F. E. Johnson
Mr. Ching

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

RECEIVED
JUN 20 1956

224 New Customhouse
Denver 2, Colorado

June 18, 1956

Mr. J. F. Tunnell
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Royalty payments, Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Chinarump claims), Grand County, Utah

Dear Mr. Tunnell:

Settlement sheets and partial royalty in the amounts of $45.70 and $6.22 for Liquidation Nos. 7827 and 7895 have been received from the Colorado Plateau Uranium Ore Project. Correct royalties on these shipments are $64.16 and $9.95 respectively.

Please send your check for $22.19 to the Executive Officer, DMEA Region III, Room 224 New Customhouse, Denver 2, Colorado. Check should be made payable to the Defense Minerals Exploration Administration.

Yours very truly,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

MHM/vj

cc: Royalty File E638
Sec. Opr. Comm. (2)
J. F. Shaw (2)
Marshall
Chron.

IN REPLY REFER TO:

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

June 7, 1956

Re: DMEA 3060, Idm-E 638
Thornburg Uranium Mines
Shinarump Claims
Grand Co., Utah
$41,910.00 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

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

Subject: Review of Field Team report concerning requested amendment.

The contract approved the expenditure of $41,910.00 on a 2-Stage work program. When work ceased June 30th, 1955, $9,061 remained unexpended and the applicant on Jan. 18th, 1956, requested an amendment approving its use on 306 feet of work, an extension of the west drift of the south workings.

Amendment #4 extended the contract term 6 months to Mar. 13, 1956. Approval of the request of the operator for the completion of the contract (306 feet of work) is not favored by the examiners and Field Team. Instead they recommend denial of the request and issuance of a certification of discovery.

I concur with the recommendation

N. E. Nelson

N. E. Nelson

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

RECEIVED
MAY 31 1956

224 New Customhouse
Denver 2, Colorado

May 28, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Chinarump Claims), Grand County, Utah.

Enclosed are the Government's, Division, and Docket copies of the Termination Agreement which was forwarded by your letter of May 21, 1956, for signature by the Operator and in this office, to effect termination of the subject contract, effective March 13, 1956, except as otherwise expressly provided in the Termination Agreement.

Copies of the Termination Agreement have been distributed to the Operator, the Finance Office, Region III, and other offices concerned.

We understand that now a certification of discovery or development will be issued by the Washington Office.

J. W. Townsend

J. W. Townsend

Enclosures

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

RECEIVED
MAY 31 1956

224 New Customhouse
Denver 2, Colorado

May 28, 1956

Mr. John T. Tunnell
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E638

Dear Mr. Tunnell:

Enclosed is the "Operator's Copy" of a TERMINATION AGREEMENT which has been executed to terminate Contract Idm-E638, effective March 13, 1956, except as otherwise expressly provided in the Termination Agreement.

We are desirous of closing the account at an early date. Therefore we will appreciate prompt attention to the matter of your rendering the final report as provided for under Article 5(b) of the Contract and as stipulated under Item 3 of the Termination Agreement.

Very truly yours,

J. W. Townsend

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

Enclosure
JWT:prl
cc: Chairman, Oper. Comm. (2)
Townsend
Corres. file
Chron.

CW

700

FILE COPY
Surname:

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

Department of the Interior

MAY 22 1956

DMEA
144401(01) Revolving Fund,
Defense Production Act,
Interior (Allocated Working Fund to the
Office of the Secy.)

T E L E T Y P E

W. M. TRAVER
EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT MAY 17 THORNBURG URANIUM MINES, INC. DOCKET 3060.

TERMINATION AGREEMENT FORWARDED YOU MAY 21.

/s/ H. S. Martin
ACTING CHAIRMAN, OPERATING COMMITTEE (343)

MChing/izm 5-22-56
cc to: Docket
Code 700
Admr.'s Reading File
Operating Committee
Confirmation copy to Region III
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Mr. Ching

RAK

700

FILE COPY
Surname:
Chang
Hoover
Selfridge
Thompson
Williams

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

MAY 21 1956

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-8638
Thornburg Uranium Mines, Inc.
Shimarump Claims
Grand County, Utah

Dear Mr. Traver:

In accordance with your memorandum of May 1, 1956, relating to the subject project, we are enclosing the original and five copies of a Termination Agreement between the Government and the Operator.

The agreement is made out for your signature in behalf of the Government. If you and the Operator find it acceptable, please have it executed as indicated, and make the usual distribution thereafter.

A certification of discovery or development will be made after the contract is terminated.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (s/s)

Enclosures

MChing/izm 5-17-56

cc: Docket
Code 700
Admr.'s Reading File
Operating Committee
Messrs. JECrawford, Rm. 3643
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

APPROVED:

/s/ Robert W. Geehan (s/s)
Member, Bureau of Mines

Thor H. Kiilsgaard (s/s)
Member, Geological Survey

R.C.H.

Mr. George Selfridge

RECEIVED

MAY 17 1956

DN 235 BUR MINES 5-17-56 10-01

CHAIRMAN, OPERATING COMMITTEE

OPERATOR OF DMEA 3060, CONTRACT IDM-E638, THORNBURG URANIUM MINES, INC TELEPHONE MAY 16 AND INQUIRED AS TO WHEN THEY MAY EXPECT A DECISION REGARDING THEIR REQUEST FOR AMENDMENT. IXX FIELD TEAM RECOMMENDATIONS FORWARDED YOU MAY 1. PLEASE ADVISE US BY TELETYPE.

W M TRAVER

Denver, Colo.

MAY 17 1 25 PM '56
BUREAU OF MINES
MAIL ROOM
WASHINGTON D C.

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

RECEIVED
MAY 11 1956

May 10, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3060, Contract Idm-E638, Thornburg Uranium Mines, Inc. (Seven-Mile Area, Shinarump Group of Claims), Grand County, Utah

I have reviewed the report of examination, DMEA Docket 3060, Contract Idm-E638, Thornburg Uranium Mines, Inc., Grand County, Utah, dated May 1, and received in this office May 5, 1956. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

The contract (Idm-E638) expired leaving approximately 300 feet of drifting uncompleted along with unexpended funds in the amount of $9,061. The last work performed by the operator was on June 30, 1955.

In an effort to resolve the case, it is understood that DMEA requested the field team to determine the status of the operator and to evaluate the work completed to date under DMEA.

The field examiners recommend that the operator's request for the additional drifting be denied because indications are that additional work will not result in significant discovery of ore.

We concur in the recommendation of the field team that the request for additional drifting be denied.

John E. Crawford
John E. Crawford

700

FILE COPY
Surname:
Chiang
Ellis

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

May 8, 1956

Memorandum

To: Associate Solicitor, Division of Mineral Resources

From: Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3060 (Uranium)
Contract No. Idm-E638
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah

Will you kindly prepare a Termination Agreement between the Government and the subject Operator in accordance with the attached draft. The Agreement should be prepared for the signature of the Executive Officer of Region III.

While no work has been done on the project since June 30, 1955, we believe that the effective date of the Termination Agreement should be March 13, 1956, which is the completion date provided for by Amendment No. 4.

A certification of discovery or development will be made.

Ernest Wm. Ellis

Ernest Wm. Ellis

MChing/izm 5-8-56
cc to: Docket
Code 700
Mr. Ching
Adrm.'s Reading File

TERMINATION AGREEMENT

It is agreed this _____ day of _____, 1956, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Thornburg Uranium Mines, Inc., hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-E 638, Docket No. DMEA-3060, dated November 13, 1953, hereinafter called the "Contract," that:

1. Effective March 13, 1956, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the fixed unit costs of work performed prior to said effective date.

3. Any work or operations prosecuted or costs incurred by the Operator beginning with said effective date, except as otherwise provided in this termination agreement, shall be for the sole account of the Operator without contribution by the Government.

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

5. All rights of the Government provided for in the Contract with respect to a certification of discovery or development and a percentage royalty and lien for its payment are preserved.

6. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said Contract, except as otherwise provided in this termination agreement.

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

THE UNITED STATES OF AMERICA

By_____

_____
(Operator)

By_____

_____

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

RECEIVED
MAY 3 - 1956

224 New Customhouse
Denver 2, Colorado

May 1, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc. (Seven-Mile Area, Shinarump Group of Claims), Grand County, Utah

Enclosed is the following material relative to operations under the subject contract:

1. Original and three copies of data consisting of letters from the Operator, dated January 18, 1956, and January 25, 1956, with attached map.

2. Original and three copies of a joint report from M. H. Salsbury, Mining Engineer, Bureau of Mines, and J. W. Hasler, Geologist, Geological Survey, dated April 26, 1956.

The Operator, in the data under item 1, requests the Government's approval of 306 feet of additional drifting under Stage II to expend the balance of funds remaining under the contract in the amount of $9,061.60.

The examining team, in the joint report under item 2, give a thorough analysis of the situation relative to the work performed to date and the results thereof.

Based on the results of the work completed to date, the examining team recommend that the Operator's request for the additional drifting be denied and that the project be certified as a discovery or development resulting from the work performed to date, in which this office concurs.

The last work performed under the contract was on June 30, 1955, and reimbursement to the Operator on the basis of costs reported for the month of June constitutes final payment if additional work is not to be performed.

Amendment No. 4, dated September 30, 1955, extended the period for completion of the project work from twenty-two months to twenty-eight months from the date of the contract, or, in effect, to March 13, 1956.

As the contract has expired, leaving considerable approved work uncompleted and a balance of funds unexpended in the amount of $9,061.60, we are in doubt as to the procedure to follow in closing the account. Therefore, the matter is forwarded for your consideration and appropriate action, or advice to us as to how we should proceed.

W. M. Traver

W. M. Traver

Enclosures

THORNBURG URANIUM MINES, INC.
160 West Main Street
Phone 269
Grand Junction, Colorado

RECEIVED
MAY 3 - 1956

January 25, 1956

RECEIVED
JAN 26 1956
Div. of Mineral Technology
BUREAU OF MINES
Denver Experiment Station

Mr. W. M. Traver, Chief
Minerals Resources Branch
Mining Division, Region IV
Building 20, Room 137
Denver Federal Center
Denver 14, Colorado

DMEA
Date Rec'd.
JAN 27 1956
BUREAU OF MINES
Denver, Colorado

RE: Docket DMEA 3060 (Uranium)
Contract Idm-E638

Dear Mr. Traver:

In further consideration of our request to you, as stipulated in our letter of January 18, 1956, concerning the above captioned contract, we wish to state as follows:

The work called for under Stage II of the contract was completed June 30, 1955. This work, which consisted of the drill hole program, was the last work performed. In our report to you covering the work for the month of June, we asked for a recess to consider further progress.

We are now ready to continue with the work as proposed in our letter of January 18. If we are granted permission to proceed, we would like to commence the work on or before April 1, 1956. We would appreciate a starting date as early as possible.

Very truly yours,

John T. Tunnell
THORNBURG URANIUM MINES, INC.

JTT:bw

THORNBURG URANIUM MINES, INC.
160 West Main Street
Phone 269
Grand Junction, Colorado

January 18, 1956

RECEIVED
JAN 18 1956
Div. of Mineral Technology
BUREAU OF MINES
Denver Experiment Station

DMEA
Date Rec'd.
JAN 20 1956
BUREAU OF MINES
Denver, Colorado

Mr. W. M. Traver, Chief
Mineral Resources Branch
Mining Division, Region IV
Building 20, Room 137
Denver Federal Center
Denver 14, Colorado

Re: Docket No. DMEA-3060
Contract Idm-E638

Dear Sir:

Relative to the above captioned contract, please be advised that we have contacted Mr. Wm. Hasler of the Grand Junction office of the United States Geological Survey concerning proposed drift work for the final stage in completing our project. Representatives from his office have visited our mine and have agreed together with our mine superintendent on a final stage which they believe to be the most advisable.

The work we are contemplating in this final stage is described as follows:

WEST END OF SOUTH WORKINGS

Starting at the end of Stage #2 Drift, we wish to drift North 70 Degrees West for 306 feet to utilize the $9,061.60 remaining under the contract.

We would like very much to start this work within the immediate future if it is agreeable with your office.

We would also, at this time, like to request an extension of ninety days time to our contract, which expires under date of March 13, 1956. This should give us ample time to complete the project if we are granted permission to proceed with the plans.

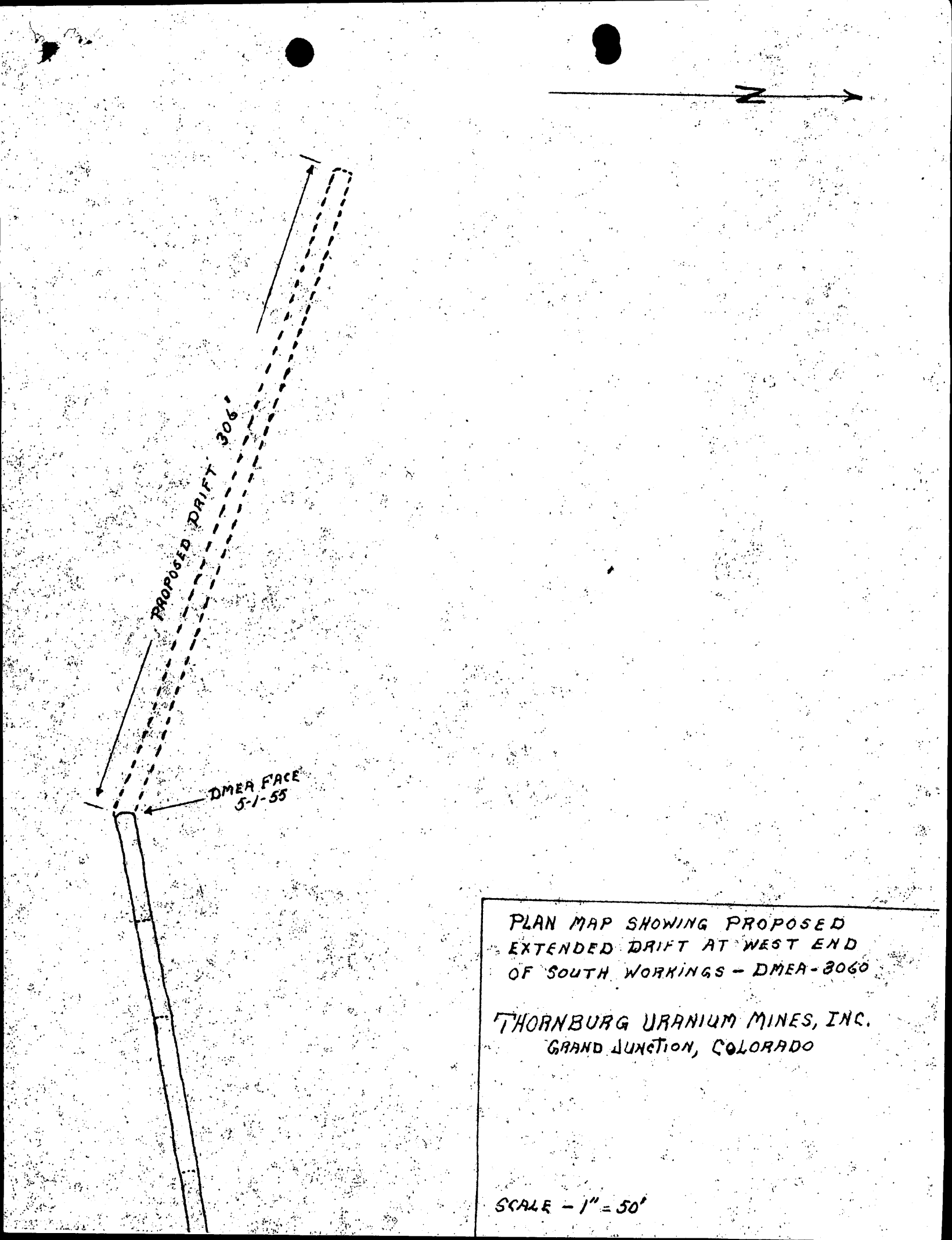
The enclosed map will indicate the proposed drift.

Very truly yours,

THORNBURG URANIUM MINES, INC.

By J. T. Tunnell
J. T. Tunnell

JTT:bw



PLAN MAP SHOWING PROPOSED EXTENDED DRIFT AT WEST END OF SOUTH WORKINGS - DMEA-3060

THORNBURG URANIUM MINES, INC.
GRAND JUNCTION, COLORADO

SCALE - 1" = 50'

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

RECEIVED
MAY 3 - 1956

Region III

Building 20
Denver Federal Center
Denver 2, Colorado
April 26, 1956

DMEA
Date Rec'd
APR 30 1956
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Executive Officer, DMEA Field Team, Region III
Through: John F. Shaw
E. N. Harshman

From: M. H. Salsbury
J. W. Hasler

Subject: DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, (Shinarump mine), Grand County, Utah -- Analysis of project work to date and recommendation on proposed additional work under Stage II.

SUMMARY OF FACTUAL DATA

An analysis of work accomplished to date under the subject contract follows:

STAGE I (North workings)

(Authorized by Exhibit A)

Item	Authorized Maximum Feet	Claimed Feet	Approved and Paid For Feet
Southdrift	275	282.0	275.0
SE drift	100	89.5	89.5
Turnout drift	0	5.0	0
Totals		376.5	364.5

Long hole drilling 15 holes 225 feet ± 14 holes 210.0 feet. 14 holes 210 feet.

STAGE I (South workings)

Authorized by amendment No. 1

Item	Authorized Maximum feet	Claimed feet	Approved and paid for
South (West) drift	290±	309.0	309.0
South crosscut	Not described by distance	63.5	63.5
North crosscut	100.0	97.5	97.5
Turnout drift	0.0	8.0	0.0
Totals		478.0	470.0
Long holes up	18 holes-230.0 feet		
Long holes down	16 holes-350.0 feet		
Totals	560.0	580.0	560.0
Chemical analyses for U_3O_8	120	57	57

Approved Expenditures Stage I

834.5 feet drifting and crosscutting at $29.60 per foot	$24,701.20
770 feet long hole drilling at $1.00 per foot	770.00
57 chemical analyses for U_3O_8 at $5.00 each	285.00
Total Stage I	$25,756.20

STAGE II (All in South workings)

Authorized by Field Team's work approval dated 11-16-54

Item	Authorized maximum footage	Claimed feet	Approved and paid for
West drift	250	232.0	232.0
Long hole drilling	(10 holes) 250 feet	(9 holes) 225	(9 holes) 225 feet

Approved expenditures in Stage II:

Drifting	232 feet at $29.60 per foot	$6,867.20
Long hole drilling	225 feet at $1.00 per foot	225.00
Total Stage II to date		$7,092.20

SUMMARY OF APPROVED EXPENDITURES

Item	Stage I Units feet	Stage I Funds	Stage II Units feet	Stage II Funds	Total Units feet	Total Funds	Authorized Contract Units	Authorized Authorized Maximum Funds
Drifting and Crosscutting	834.5	$24,701.20	232	$6,867.20	1066.5	$31,568.40	1345	$39,810.00
Long hole drilling	770.0	770.00	225	225.00	995	995.00	1500	1,500.00
Chemical analyses	57	285.00			57	285.00	120	600.00
Totals		$25,756.20		$7,092.20		$32,848.40		$41,910.00

SUMMARY OF UNEXPENDED BALANCES

Drifting	1345 feet minus 1066.5 feet, or 278.5 feet at $29.60 per foot or	$ 8,243.60
Long hole drilling	1500 " " 995 " " 505 " " $ 1.00 " " "	505.00
Chemical Analyses	120 minus 57 or 63 at $5.00 each or	315.00
	Total	$ 9,063.60*

*The actual total unexpended balance is $9,061.60 because the amount entered in Exhibit A of the contract for drilling was erroneously calculated as $39,810.00 instead of $39,812.00

The foregoing analysis agrees with the totals in the Executive Officer's memorandum to Hasler and Salsbury dated February 9, 1956, and with the operator's last MF-104 and MF-104A forms for the month of June 1955, except that in the "Summary of Unexpended Balances" in the memo of Feb. 9, 1956, the total units of sample analyses remaining should be 63 instead of 120.

The operator furnished radiometric and geologic logs of all long holes drilled during the project and the results of all sampling done. These results were supplemented by channel sampling done by DMEA inspectors. All long hole drilling, in the opinion of the writers, met contract requirements.

No ore reserves could be calculated on the results of the project work to date although spotty ore-grade mineralization was found at many points and in a number of drill holes. The operator has developed some of the mineralized material indicated by the DMEA exploration, but still has much to do to develop it fully, particularly the mineralized material found both above and below the workings in long drill holes.

The long hole drilling in the last work done in the west drift in the South workings indicated, by probing, about 2.5 feet of ore assaying 0.85 percent eU_3O_8 (Hole No. 43). This was later exposed but has never been seen by a DMEA representative because it is under water. It is reported by the applicant to be good ore, ranging from one to two feet thick.

While more than 1200 tons of ore have been shipped, the individual ore pods are small and mineralization is very spotty. Ore mined in the stopes near the outcrops represents the bulk of shipments

to date. Shipments since January 1954 include ore found in DMEA exploration and the grade is very much lower.

Following is a table of ore shipments through December 1955, as shown by Atomic Energy Commission records:

	North Workings		South Workings	
Period	Dry tons	Content percent U_3O_8	Dry tons	Content percent U_3O_8
Thru Dec. 1953	538	0.43	270	0.30
Jan.-March 1954	19.8	0.21	86.8	0.23
July-Sept. 1954	53.4	0.16	19.4	0.12
Oct.-Dec. 1954			19.7	0.16
Jan.-Mar. 1955			72.4	0.19
Apr.-June 1955	25.7	0.15	85.3	0.20
Totals	636.9	0.39	553.6	0.25

The last shipments from the South workings include sorted high grade ore saved from previous stoping which was mixed with the lower grade current production. Therefore, the settlement value may not represent the grade of ore mine from workings exposed with DMEA funds.

GEOLOGY

The host rocks containing the uranium deposits are in the basal 30 feet of the Triassic Chinle formation. These host rocks consist of complexly intertonguing lime pebble conglomerate and siltstone, which is greenish gray near the ore deposits. Three beds of lime pebble conglomerate are host rocks to small high-grade masses of uraninite, up to several inches across, in the upper 20 feet of the basal 30-foot sequence of the Chinle. At the south workings on the Shinarump 1A claim, a lowermost bed of siltstone, about 10 feet thick, is mineralized in the upper part, where it is in contact with the lowest lime pebble conglomerate. The regional dip is about 8 degrees to the southwest; the Stage I south drift, however, was driven slightly south of west and nearly horizontal for 309 feet. Hence, three beds of mineralized lime pebble conglomerate, successively higher in the section were penetrated as the heading of the south drift was moved westerly. These beds are within a stratigraphic interval of about 20 feet and range from 1 to 5 feet in thickness. The face of the Stage I drift was in barren siltstone above the third or uppermost lime pebble conglomerate in the drift.

Stage II drift in the south workings was started in the floor of the Stage I drift and about 30 feet back from the face, in order to begin on the third or uppermost lime pebble conglomerate. The Stage II drift (fig. 1) was driven downward at an inclination of about minus 8 degrees on the third lime pebble conglomerate bed.

The DMEA drift driven southward in the north workings (fig. 1) was driven slightly upward at a low angle of inclination toward the mineralized AEC drill holes. This drift remained on the stratigraphic equivalent of the third or uppermost lime pebble conglomerate all the way to the face.

ORE DEPOSITS AND RESERVES

The lowest lime pebble conglomerate and a few inches of both overlying and underlying siltstone are sporadically mineralized through an average thickness of 3.1 foot in the south DMEA stage I drift according to 8 samples taken by R. R. McLellan of the Bureau of Mines, (Progress Map, MF-104's). These 8 samples were taken 30 to 90 feet in from the start of the DMEA Stage I drift (fig. 1) and averaged 0.22 percent of U_3O_8. This average grade is believed to be fairly representative of the lowermost lime pebble conglomerate 30 to 90 feet in from the beginning of the south DMEA Stage I drift, though this average may be slightly too high, according to observations recently made by F. M. Byers and H. S. Johnson. The company assays average considerably higher, but these are believed to have resulted from samples placed so as to include erratically distributed uraninite blebs. In the opinion of the DMEA examining geologist no ore can be shipped from the vicinity of this portion of the drift without considerable hand sorting, inasmuch as the high grade blebs of uraninite are too few and far between to carry the whole drift in ore through a distance of 60 feet.

The second or middle lime pebble conglomerate was penetrated in the south drift from about 110 to 150 feet in from the DMEA starting point. This bed is about 4 feet thick. No samples were taken by the DMEA inspectors, but two company samples assayed .60 and .66 percent U_3O_8

across thicknesses of 1.5 and 0.7 feet respectively (Progress Map, MF-104's). According to observations made not only by the DMEA inspectors, but also by R. T. Chew and R. D. Sample of the U. S. Geological Survey, these assays are not representative of the middle lime pebble conglomerate; it is probably also below ore grade in this section of the drift, though high grade uraninite specimens could probably be hand picked.

The third or uppermost lime pebble conglomerate was penetrated in the vicinity of the crosscuts or from about 210 to 290 feet in from the DMEA starting point. This conglomerate is of ore grade, and most of the 197 tons of ore shipped from south workings during 1955, when the DMEA contract was active, came from this ore body. Stope-Drifts have been extended a short distance parallel to the main drift in order to mine additional ore from the crosscuts. (These drifts were not paid for under DMEA). Eight samples of the lime pebble conglomerate ore body were taken in the crosscuts by R. R. McLelland and M. H. Salsbury of the Bureau of Mines. These samples averaged 0.17 percent U_3O_8 across an average thickness of 2.9 feet and contained 26 percent of lime. This grade is slightly less than the weighted average of 0.184 percent of U_3O_8 in the 197 tons of ore shipped in 1955. However, the grade of the ore shipped may have been raised by addition of high-grade ore mined previously.

Under stage II of the DMEA contract the south drift was driven 250 feet westerly down the 8-degree dip on the third or uppermost lime pebble conglomerate. This conglomerate averages only about 1 foot thick and is at best only erratically mineralized. Large portions of this drift are barren. Four samples taken by Bureau of Mines engineers across an average thickness of about 1-1/2 feet average .052 percent of U_3O_8. This average is probably too high for the lime pebble conglomerate toward the

face of the drift. A fifth sample of an ore bearing portion of the Stage II drift was taken by Salsbury in the north wall about 60 feet west and beyond the face of the Stage I drift (fig. 1). This sample assayed 0.57 percent of U_3O_8 across 1.3 feet but is representative only of a very limited portion of the drift. A sixth sample was also taken of a mineralized specimen of high-grade, uraninite-bearing carbon in the floor of the drift. This specimen contained 10.4 percent of U_3O_8. Similar specimens can be taken elsewhere in the mine and serve as an example of the tendency of the ore to occur in small high grade masses localized by carbon.

The ore reserve yet remaining in the body at the DMEA crosscuts in the south workings may be as much as 200 tons containing possibly 0.17 percent of U_3O_8. However, this reserve will probably never be mined, owing to caving of the mudstone-siltstone back. About as much of this ore body has been removed as can be taken economically and without creating a caving problem.

The north DMEA drift was driven on a lime pebble conglomerate at about the same stratigraphic position as the third lime pebble conglomerate of the south drift; they may, however, be two different conglomerate lenses. This DMEA drift was driven about S. 10°E., to reach mineralized AEC drill holes (fig. 1). The lime pebble conglomerate bed in the north DMEA drift ranges from 1 to 2 feet thick and is only sporadically and weakly mineralized. Eight channel samples taken by R. R. McLellan of the Bureau of Mines 100 to 190 feet in from the DMEA starting point averaged 2.1 foot in thickness and 0.22 percent of U_3O_8 (Progress map North Workings, 9-15-54). These samples had a range of 0.03 to 0.60 percent in U_3O_8 content, three being below ore grade. This average compares closely with 0.23 percent of U_3O_8 actually shipped from this portion of the drift. Nineteen tons of

ore shipped from the drift closer to the DMEA faces of 9-8-54 contained only 0.12 percent of U_3O_8. Three channel samples averaging 1.4 feet and 0.011 percent of U_3O_8 were taken by Salsbury in the face of the southerly arm of the DMEA drift, and one sample across 1.2 feet and containing 0.13 percent of U_3O_8 was taken also by Salsbury in the face of the southeasterly arm of the DMEA drift.

Possibly 100 tons of ore containing 0.20 percent of U_3O_8 might be inferred in the walls of the DMEA drift, north workings (fig. 1). Mapping of the walls of the north workings by H. S. Johnson and F. M. Byers suggests that in meeting the required objective to intersect the AEC drill holes, the DMEA work veered slightly too far easterly off the thicker part of a channel which is vaguely defined by a slightly greater thickness of the lime pebble conglomerate and a slight, 1-foot scour into the east bank of the underlying mudstone. The west bank is even more vaguely defined, as exposed in one of the west crosscuts (fig. 1) by complex intertonguing westerly of lime pebble conglomerate into mudstone and siltstone. In retrospect, it now appears to the DMEA geologists that the DMEA drift should have been driven for some distance S. 10° W., instead of S. 10° E.; however, this slight thickening or channelling of the lime pebble conglomerate is so vaguely defined that no miner could be expected under any contract to stay in the channel. Furthermore, two barren AEC drill holes would tend to discourage exploration of this thicker part of the lime pebble conglomerate in a S. 10° W. direction.

The long-hole drilling from the DMEA drifts penetrated largely barren or weakly mineralized rock. No ore reserve can be indicated by the long hole drilling to date. Two down holes at station 21 and at station 27 near the face of the DMEA Stage II drift in the south workings (fig. 1)

penetrated 2 and 2-1/2 feet, containing 0.27 percent and 0.85 percent eU_3O_8, respectively, a few feet below the floor of the drift in what is probably the middle lime pebble conglomerate bed. Down holes, however, at the intervening stations 22 to 26 are barren. Possibly 100 tons of ore might be inferred in the middle lime pebble conglomerate bed on the basis of the long hole drilling. The grade of this ore, however, would probably not exceed 0.20 percent of U_3O_8, based on past production. Moreover, this inferred ore cannot be profitably recovered, for it is beneath the floor of the drift.

CONCLUSIONS AND RECOMMENDATIONS

To sum up, uranium mineralization on the Thornburg Seven-Mile claims is erratically distributed as blebs and seams in at least three lime pebble-conglomerate beds in the lower 30 feet of the Triassic Chinle formation. These beds range from 1 to 5 feet in thickness and average about 2 feet thick. Channels are only vaguely defined by slight scouring and by thickening of the beds. The blebs and seams of uraninite are too sparsely and erratically distributed to be mined continuously by drifting or crosscutting. The result is that much work in barren ground must be done, and ore which is mined for shipment requires expensive hand sorting. The results of long hole drilling have indicated a similar type of mineralization both above and below the level work and are therefore not encouraging. It would appear that 834.5 feet of drifting and crosscutting in the South workings and 232 feet of work in the North workings have demonstrated adequately that the grade of ore found in the deeper workings cannot be mined at a profit, even with DMEA assistance in driving exploration openings which can be used later for development and mining. It is probable that the requested additional 200 feet of drifting northwesterly from the present west face in the South workings would discover more small pockets of

ore, but, in the opinion of the examining team, the discovery would not be significant and, the cost of exploration would be disproportionate to the probable value of any ore discovered. Because the poorly defined thickening or channeling of the lime pebble conglomerate in the North workings appears to be trending southwest, it is doubtful that 200 feet of drifting from the west face of the South workings would reach it.

It is recommended that the request for further exploration under Contract Idm-E638 be denied and that a certification of discovery and development be issued which is believed to be necessary to protect the Government's interest in future production from ore already exposed with DMEA funds. Even though mining this marginal ore is not likely to be profitable, it is believed that, in a promotional operation such as this one, an attempt will be made to mine it sooner or later.

for Scott W Hagerty
M. H. Salsbury

for D H McLaren
J. W. Hasler

cc 9
Idm-E638
Chron.

MHS/ch

4-22-56

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

RECEIVED
APR 23 1956

224 New Customhouse
Denver 2, Colorado

Date: April 20, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, DMEA Docket 3060 (Uranium), Contract Idm-E638, Thornburg Mining Company - Utah

Period: March, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

Lot No.	Dry Tons	Royalty Due	Royalty Pd.

(NONE)

Totals:

Past Due Royalties Collected	None
Total Dry Tons (Ore or Cons.) Shipped to Date	329.765
Expiration Date of Royalty Repayment	Not determined
Amount of Government Participation	" "
Total Royalty Payments to Date	$248.33
Percent of Loan Repayment	-- --

W. M. Traver

W. M. Traver

vj
cc Royalty File E 638 w/Settlement Sheets
Monthly Royalty Payment File
~~T. A. Christensen~~
S. R. Wilson
Chron.

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

RECEIVED
FEB 13 1956

224 New Customhouse
Denver 2, Colorado

VIA AIR MAIL

February 9, 1956

Memorandum

To: J. W. Hasler
M. H. Salsbury

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., Seven-Mile Canyon Area, Grand County, Utah

Reference is made to the Operator's letters of January 18 and January 25, 1956, and to your joint memorandum of January 24, 1956, pertaining to the Operator's request for the Government's approval for additional drifting to be performed under the subject contract to absorb the unexpended balance of funds presently authorized under the contract.

Before consideration can be given to the matter, it is necessary that you provide a complete analysis of the work performed to date under the various stages and the funds involved therewith to arrive at the actual unexpended balance of units of work and funds.

There follows our analysis of the status of units of work and funds as presently approved under the contract, which you should verify and incorporate something of a similar nature in your supplemental memorandum report on the Operator's request:

Item	Allowed by Contract		Performed		Unexpended Balance	
	Units	Funds	Units	Funds	Units	funds
Drifting						
(a) Exhibit "A"	375'		364.5'		9.5'	
(b) Amendment No.1	495'		470.0'		25.0'	
(c) Amendment No.1	475'		232.0'		243.0'	
Total	1345'	$39,810.00	1066.5'	$31,568.40	278.5'	$8,241.60

Item	Allowed by Contract Units	Allowed by Contract Funds	Performed Unit	Performed Funds	Unexpended Balance Units	Unexpended Balance Funds
Sample Drilling						
Exhibit "A"	1500'	$ 1,500.00	995.'		505.0'	$ 505.00
Sample Analysis						
Exhibit "A"	180	600.00	57	$ 285.00	63	315.00
Total						$9,061.60

Summary of Unexpended Balances

Item	Units	Funds
Drifting	278.5'	$ 8,241.60
Sample Drilling	505.0'	505.00
Sample Analysis	180	315.00
Total		$ 9,061.60

We are unable to determine whether or not the Operator has complied with the terms of the contract as amended relative to the required amount of sample drilling and the furnishing of the results of radiometric probing as required by the contract.

In analyzing the funds approved under the contract, you will note a $2.00 error in the extension of the total amount allowed for drifting. The 1345 feet of drifting at $29.60 per foot amounts to $39,812.00 instead of $39,810.00 as shown in the contract.

Your joint memorandum of January 24 did not take into consideration the necessity for sample drilling or sample analysis. Therefore when you reanalyze the situation, possibly you will wish to discard entirely the memorandum of January 24 and resubmit your recommendations in entirety.

In addition to the analysis of work performed to date, please supply twelve copies of a composite map similar to Figure 2 attached to the contract, which will show the [redacted] work completed to date and the additional drifting proposed to absorb the balance of funds.

W. M. TRAVER
W. M. Traver

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Shaw
Townsend
Corres. file
Chron.

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

RECEIVED
JAN 26 1956

224 New Customhouse
Denver 2, Colorado

January 23, 1956

Mr. J. T. Tunnell, Office Manager
Thornburg Uranium Mines, Inc.
160 West Main Street
Grand Junction, Colorado

Re: Docket DMEA 3060 (Uranium),
Contract Idm-E638

Dear Mr. Tunnell:

Reference is made to your letter of January 18, 1956, wherein you request the Government's approval for 306 feet of additional drifting to utilize the funds remaining under the Contract, and request a 90-day extension of the period for completion of the project work.

Preparation of an amendment of the nature requested is not within the authority delegated to this office; therefore the matter must be forwarded to the Washington Office, DMEA, for their consideration and appropriate action.

In addition to recitation regarding approvals requested by you, it will be necessary that recitation be incorporated in the amendment to authorize a recess of operations for the period that work has been suspended. Therefore, please advise the date the last work was performed under the Contract and the date on or before which work will be resumed. As the entire matter must go to the Washington Office, DMEA, as we have mentioned, we suggest that the date of April 1, 1956, be used as the date on or before which work will be resumed, thereby allowing sufficient time for the resolution of all matters concerned with the amendment.

The matter will be forwarded to the Washington Office, DMEA, when we receive the information requested from you and when we receive report of the examining team relative to your request for approval of the additional drifting.

Very truly yours,

W. M. TRAVER

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

JWT:prl
cc: Chairman, Oper. Comm. (2)
Harshman
Shaw (2)
Hasler
Townsend
Corres. file
Chron.

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

RECEIVED
DEC 15 1955

224 New Customhouse
Denver 2, Colorado

December 12, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., Shinarump Claims, Grand County, Utah.

In conjunction with the matter discussed in your letter of November 18, 1955, we are enclosing four copies of a joint memorandum from J. William Hasler, U. S. Geological Survey, and M. H. Salsbury, U. S. Bureau of Mines, dated December 7, 1955.

We will supply you with further information as soon as the results of the field examination are known.

E. N. Harshman

E. N. Harshman

Enclosures

MINERAL DEPOSITS
DMEA
RECEIVED
DEC 8 1955

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

RECEIVED
DEC 15 1955
U. S.
GEOLOGICAL SURVEY
DENVER, COLORADO

December 7, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: E. N. Harshman

From: J. William Hasler
M. H. Salsbury

Subject: DMEA 3060 (Uranium), contract Idm-E 368, Thornburg Uranium Mines, Inc., Shinarump claims, Grand County, Utah

This letter is in reply to your request regarding the company's intention of doing further work under the present contract. In a discussion with Mr. John Tunnell, a company representative, it was learned that the property has not been working for the past three months and that decision for doing further work was to be made by the Board of Directors. We suggested that the company take immediate steps to appraise the results to date and to submit plans to use up the balance of funds designated under the contract at their earliest convenience.

We have planned to make an examination of the property very shortly and appraise the work completed under the contract to date, in order that we might aid the company in their work.

J. William Hasler
J. William Hasler,
U. S. Geological Survey

M. H. Salsbury by JWH
M. H. Salsbury,
U. S. Bureau of Mines

JWH/mlr

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

224 New Customhouse
Denver 2, Colorado

November 30, 1955

Memorandum

To: John F. Shaw) w/copy of Chairman's letter of Nov. 18
J. W. Hasler)

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

Subject: Docket DMEA 3060 (Uranium), Contract IAm-2638, Thornburg Uranium Mines, Inc., Shinarump Claims, Grand County, Utah

Enclosed is a copy of letter from the Chairman of the Operating Committee, dated November 18, 1955, relative to the lack of activity under the subject contract.

The Chairman suggests that the project be re-appraised in the light of results to date and a determination made as to whether or not further work is warranted.

Please review the matter and submit a joint memorandum of your recommendations. If you recommend termination, please contact the operator, if possible, to determine his desires in the matter.

E. N. Harshman

E. N. Harshman

JOT:prl
cc: Chairman, Op. Comm. (2)
Harshman - w/copy of Chairman's letter
Townsend
Corres. file
Shaw.

RECEIVED
DEC - 2 1955

Surname Copy

700

Ching
Ellis
Selfridge
Hamm

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

NOV 18 1955

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Ida-1638
Thornburg Uranium Mines, Inc.
Shinarump Claims
Grand County, Utah

Dear Mr. Traver:

Pursuant to the request of the Operator, Amendment No. 4 to the subject contract recently extended the completion date to March 13, 1956.

Our records indicate that 1066.5 feet of drifting and cross-cutting and 995 feet of sample drilling have been completed under the contract, and that no work has been done since the end of June.

Since no recess period has been requested by the Operator, we are at a loss to account for the inactive status of this project.

It is suggested that the Field Team reappraise this project in the light of results to date and determine whether or not further work is warranted. If not, a termination by mutual agreement appears to be in order. However, if further work is warranted, the Operator should be advised of the necessity of adhering to a definite work program with time limitations.

Sincerely yours,

George C. Selfridge
by EST
Chairman, Operating Committee

/s/ Robert W. Geehan
by EST
Member, Bureau of Mines

N. E. Nelson
by EST
Member, Geological Survey

MChing/izm 11-16-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Code 700
Mr. Ching
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

11-14-55

Building 20
Denver Federal Center
Denver 2, Colorado
November 7, 1955

REGION III

Memorandum

To: Executive Officer, BMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: Carl Belser

Subject: BMEA 3060, Contract Idm-E638 (Uranium),
Thornburg Uranium Company, Shimarump claims,
Grand County, Utah - Progress report for October 1955

The property was visited on November 3, 1955. No work has been done at the mine during October. Ed Johnson, foreman, was still in Oregon where the company is shipping ore from their new property.

Carl Belser
Mining Engineer

CB:ph

cc 6
Idm-E638
Chron.

Sec. Op. Comm

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

October 17, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division, DMEA

From: Hazel Berry, Operating Committee, DMEA

Subject: Cy 257 Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division and Contract Administration and Audit Division, also the Legal Division.

Thornburg Uranium Mines, Inc., DMEA-3060, Idm-E638, Amendment No. 4.

Attachment 1

Surname copy

700

Ching
Ellis
Rubin
Hollund
"Appd. Sol. Off."
Selfridge
Johnson

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

OCT 14 1955

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

INTERIOR DEPT.
OCT 10 1955
SOLICITOR

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Ldm-8638
Thornburg Uranium Mines, Inc.
Shimarump Claims
Grand County, Utah

Dear Mr. Traver:

Receipt is acknowledged of your memorandum of September 30 with attached copies of Amendment No. 4 to the subject contract.

The amendment is in order and has been approved by this office. However, your attention is called to the last sentence in Section 5 of DMEA Order-1 Amended, which states: "Exploration projects estimated to require more than two years to complete will be approved only if justified in the opinion of the Administrator by special circumstances." Accordingly, it has been the practice of all Executive Officers to refer requests for amendments that extend a contract period beyond two years to this office for action.

FROM SOLICITOR
OCT 14 1955
FOR SIGNATURE

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JB)

APPROVED:

P. F. Yopes (JB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JB)
Member, Geological Survey

MChing/gla
10-7-55

cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Ching

P. S. In such amendments consideration must be given to extending payback period beyond 10 years, to eliminating abandonment provisions (Article 7, old form), new Owner's Consent to Lien, etc.; consequently they should be referred to Washington for preparation.

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

RECEIVED
OCT 13 1955

224 New Customhouse
Denver 2, Colorado

October 10, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3060 (Uranium), Contract Idm-E658, Thornburg Uranium Mines, Inc., Shinarump claims, Grand County, Utah - Progress report for September, 1955

Attached are two copies of the Inspecting Engineer's September, 1955 report for the subject exploration contract. No work was done during the period.

W. M. Traver

By J. W. Townsend
J. W. Townsend

Enclosures

DMEA
Date Rec'd
OCT 7 1955
BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 2, Colorado
October 7, 1955

REGION III

Memorandum

RECEIVED
OCT 13 1955

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: Carl Belser

Subject: DMEA 3060, Contract Idm-E638 (Uranium),
Thornburg Uranium Company, (Shinarump claims),
Grand County, Utah - Progress report for September 1955

The property was visited on October 3, 1955. The road to the mine was barred with a rope and a "no admittance" sign. Ed Johnson, foreman, was in Oregon examining a property for Thornburg. Fred Johnson said that no work had been done at the mine during September, and that no word, as yet, had been received concerning the location for the new work.

Carl Belser

Carl Belser
Mining Engineer

CB:ph

cc 6
Idm-E638
Chron

October 7, 1955

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare and Miscellaneous Metals Division

Subject: Amendment to contract

Mr. Ching has reviewed Amendment No. 4, dated September 30, 1955, to Contract No.Idm-E638, Docket No. DMEA-3060, Thornburg Uranium Mines, Inc., and has approved it. However, he has prepared a letter to the Executive Officer, Region III regarding the referral of requests for amendments that extend a contract period beyond two years to the Washington Office for action. The letter is forwarded herewith.

Grace L. Ault

Grace L. Ault

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

224 New Customhouse
Denver 2, Colorado

September 30, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., Grand County, Utah.

Enclosed find the original and two copies of Amendment No. 4 prepared and executed in this office in conformance with the Operator's letter of request, dated September 9, 1955. We are also enclosing three copies of the request.

W. M. Traver

Enclosures

September 9, 1955

RECEIVED
SEP 12 1955
DMEX
Date Rec'd

SEP 12 1955

BUREAU OF MINES
Denver, Colorado

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

Re: PROJECT J-LA 3060 (TRAVER)
CONTRACT IDM-2-638

Dear Mr. Traver:

Due to the fact that the above captioned contract expires under date of September 13, 1955, and since we are desirous of completing the project, we would appreciate an extension of time.

We hereby request an amendment to extend the time for another six (6) months, namely, September 14, 1955 until March 13, 1956.

Very truly yours,

J. P. Tunnell

J. P. Tunnell
Assistant Secretary
Thorburn Uranium Mines, Inc.

JPT:bp

COPY

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

RECEIVED
SEP 26 1955

224 New Customhouse
Denver 2, Colorado

September 22, 1955

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA-3060, Contract Idm-E6 8 (Uranium), Thornburg Uranium Company, Shinarump Claims, Grand County, Utah - Progress report for August, 1955.

Attached are two copies of the examining engineer's report on the subject exploration project for August, 1955. No exploratory work was accomplished under the terms of the contract during the period.

W. M. Traver

Enclosures

DMEA
Date Rec'd.

SEP 22 1955

BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 2, Colorado
September 21, 1955

REGION III

Memorandum

RECEIVED
SEP 26 1955

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: Carl Belser

Subject: DMEA 3060, Contract Idm-E638 (Uranium)
Thornburg Uranium Company, (Shimarump claims), Grand County, Utah
Progress report for August 1955

Underground progress was inspected on September 12, 1955. During August, the company uncovered the ore found by drilling in June. The ore appears to be good and is said to be from one to two feet thick, but is under water.

Mr. Johnson has asked the Geological Survey to suggest an exploration drifting program to utilize the remaining exploration left under the contract.

No work was done or reimbursement claimed under the contract for August 1955.

Carl Belser
Carl Belser
Mining Engineer

CB:ph

cc 6
Idm-E638
Chron

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

224 New Customhouse
Denver 2, Colorado

August 9, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., (formerly Thornburg Mining Company), Shinarump claims, Grand County, Utah - Progress Report for July, 1955

Enclosed is a memorandum from Carl Belser, DMEA engineer, concerning operations under the subject contract for the month of July, 1955.

W. M. Traver

W. M. Traver

Enclosures

RECEIVED
AUG 1 1 1955

DMEA
Date Rec'd.
AUG 8 1955
BUREAU OF MINES
Denver, Colorado

Building 20
Denver Federal Center
Denver 2, Colorado
August 8, 1955

Region III

Memorandum

To: Executive Officer, DMEA Field Team, Region III

Through: John F. Shaw
Supervising Mining Engineer

From: Carl Belser

Subject: DMEA 3060, Contract Idm-E638, (Uranium), Thornberg Mining Company, (Shinarump claims), Grand County, Utah -- Progress report for July, 1955

The subject contract was inspected on August 1, 1955. No new work on the contract had been done during July. A breakthrough to the old workings had been completed which improved the ventilation.

The probing of the holes drilled in June indicated ore in hole No. 37 and good ore (2.5 feet of 0.85 percent U_3O_8) in the last hole toward the face (No. 43). The superintendent, Ed. Johnson, said that he would like to explore this ore further before any more drifting is done.

No work was done or reimbursement claimed under the contract for July, 1955.

The Chinle-Moenkopi contract is hard to follow as the Moenkopi appears to vary from red to greyish green. Mr. Johnson said that they would like to have Hank Johnson of the Geological Survey give them pointers on following the contract. The request was forwarded to Mr. Hasler.

for John F. Shaw
Carl Belser
Mining Engineer

CB:jw

cc: E638
Chron.

RECEIVED
AUG 11 1955

224 New Customhouse
Denver 2, Colorado

August 1, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments

Enclosed are settlement sheets and Colorado Plateau Uranium Ore Project check No. 17173 in the amount of $238.98 in payment of royalties due under the following contracts:

Company	Contract	Liq. No.	Amount
Sunnyside Uranium Company	E-381	7823	$ 10.59
Fred Schwartzwalder	E-595	7729	176.47
Thornburg Uranium Mines, Inc.	E-638 DMEA-3060	7827	45.70
" " " "	"	7895	6.22

/w/ W. M. Traver

Enclosures
vj

Form No. O-4 8-54 25M

DMEA-3060

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

DMEA Date Rec'd. JUL 26 1955 BUREAU OF MINES Denver, Colorado

Receiving Station Monticello, Utah — Grand Junction, Colorado June 17, 1955

Liquidation No. 7827 — Lot No. 12982 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. P-2282

Address U. S. Bank Building; Grand Junction, Colorado

Type of Ore Hi Lime — Contract No. At(05-1)304 — Date Received 6/2/55

Mining Claim North Mine #2 — Mining District Greenriver, Utah — Pile No. 44

county Grand — state Utah — locality Seven Mile

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
12982	109670	1.71	107792	0.27	.04	31.4	291.04	43.12	33846.69

U308	Per Lb.	Per Ton	Short Tons	Total Value
0.27% = 5.4# at	3.50	18.90	53.8960	$1018.63
Development allowance 5.4# at	.50	2.70	53.8960	145.52
Premium in excess of 4# per ton 5.4# - 4# = 1.4# at	.75	1.05	53.8960	56.59
TOTAL U308 PAYMENT		22.65	53.8960	$1220.74
Haulage allowance (75) 68 miles @ 6¢ per wet ton mile			54.8350	223.73
TOTAL				$1444.47
Less CaCO3 Penalty as per contract 15% of (19.95) =		2.9925	53.8960	- 161.28
TOTAL GROSS PRICE				$1283.19
Deductions: DMEA #3060 5% of (913.94) =				- 45.70
NET PROCEEDS				$1237.49

Correct CFK
Checked DPR
Approved HCJ

Paid 6/20/55
Vo. No. 6-246
Check No. 16703

av

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Uranium Mines, Inc.
By:
Title:
Seller or Agent

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E638

Form No. O-4 8-54 25M

COLORADO PLATEAU URANIUM OR

American Smelting and Refining Company, Ore Purchasing Agent
United States Atomic Energy Commission

6-30-55

DMEA
Date Rec'd.
JUL 26 1955
BUREAU OF MINES
Denver, Colorado

Receiving Station Monticello, Utah — Grand Junction, Colorado

Liquidation No. 7885 — Lot No. 13044 — Shippers Lot No.

Bought of Thornburg MINING & Uranium Mines, Incorporated — A.E.C. License No. R-2202

Address 160 West Main Street; Grand Junction, Colorado

Type of Ore Hi Lime — Contract No. At(05-1)304 — Date Received 4/21/55

Mining Claim Shinarump #1A — Mining District Cruzsriver — Pile No. 46

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
13044	24630	2.30	24064	0.19	0.18	21.9	45.72	24.06	5270.02

U308	Per Lb.	Per Ton	Short Tons	Total Value
0.19% - 3.8# at	3.30	12.54	12.0320	$150.88
Development allowance 3.6# at	.50	1.90	12.0320	22.86
TOTAL U308 PAYMENT		14.44	12.0320	$173.74
Haulage allowance 70 miles @ 6¢ per wet ton mile			12.3150	51.72
TOTAL				$225.46
Less CaCO3 Penalty as per contract		2.20	12.0320	- 26.47
TOTAL GROSS PRICE				$198.99
Deductions:				
DMEA #3060				
5% of 124.41 =				- 6.22
NET PROCEEDS				$192.77

Correct CFK
Checked DPK
Approved HCJ

Paid June 30, 1955
Voucher No. 6/449
Check No. 16951

By

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mines, Incorporated
By: Seller or Agent
Title:

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E638

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

RECEIVED
JUN 24 1955

224 New Customhouse
Denver 2, Colorado

June 21, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - Thornburg Mining Company, Docket DMEA 3060 (Uranium) Contract Idm-E638 - Utah

Enclosed is Thornburg Mining Company check No. 1065 in the amount of $31.17 which represents the balance due on royalties under Liquidation Nos. 7403 and 7462 for ore shipped to Colorado Plateau Uranium Ore Project.

Settlement sheets covering this shipment of ore was forwarded to your office on May 20, 1955.

W. M. Traves

Enclosure

vj.

cc: Royalty File E638
J. F. Shaw
Sec. Opr. Comm.(2)
Royalty Report File
Chron.

6/24/55 gh

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

RECEIVED
JUN 23 1955

224 New Customhouse
Denver 2, Colorado

June 20, 1955

RECEIVED
JUN 23 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., Grand County, Utah

Enclosed are three copies of a memorandum report relative to operations under the subject contract.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.

JUN 17 1955

BUREAU OF MINES
Denver, Colorado

Region III

Building 20, Room 237
Denver Federal Center
Denver 2, Colorado
June 16, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

RECEIVED
JUN 23 1955

Through: John F. Shaw

From: Carl Belser

Subject: DMEA 3060, Contract Idm-E638 (Uranium) Thornburg Mining Company, (Shinarump mine) Grand County, Utah - Progress report for May 1955

Underground progress was inspected on June 6, 1955. Only two miners were at the mine. Ed Johnson, foreman, was in Gunnison County, Colorado, operating a diamond drill for the Thornburg Mining Company, but was expected to return within a few days.

Long hole drilling was started near the breast of the adit but the drill broke down on the first hole. All work done underground has been in making a connection with the old workings for ventilation. This connection is expected to be completed within a few days.

No work has been done or reimbursement claimed under the contract for May 1955.

Carl Belser
Carl Belser
Mining Engineer

cc 6
E638
DMEA Chron.

CB/peh

6-3-55
Gm.

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

224 New Customhouse
Denver 2, Colorado

May 24, 1955

Mr. J. T. Tunnell, Office Manager
Thornburg Uranium Mines Inc.
100 West Main Street
Grand Junction, Colorado

Re: Royalty payments, DMEA Docket 3060 (Uranium), Contract Idm-E638, Thornburg Uranium Mines, Inc., Grand County, Utah

Dear Mr. Tunnell:

Settlement sheets and partial royalty payments in the amounts of $43.22 and $6.81 for Liquidation Nos. 7403 and 7462 have been received from the Colorado Plateau Uranium Ore Project. Correct royalties on these shipments should be $66.76 and $14.44 leaving balances due of $23.54 and $7.63 respectively.

Please send your check for $31.17 to the Executive Officer, DMEA, Region III, Room 224, New Customhouse, Denver 2, Colorado. Check should be made payable to the Defense Minerals Exploration Administration.

Yours very truly,

W. M. Traver

W. M. Traver

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

224 New Customhouse
Denver 2, Colorado

May 20, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payments

Enclosed are settlement sheets and Colorado Plateau Uranium Ore Project check No. 16122 in the amount of $252.16 in payment of royalties due under the following contracts:

Company	Docket	Contract	State	Liq. No.	Amount
Fred Schwartzwalder	2888	Idm-E595	Colo.	7389	$190.64
Sunnyside Uranium	2135	Idm-E381	Utah	7469	5.49
Thornburg Mining Co.	3060	Idm-E638	Utah	7403	43.22
" " "	"	"	"	7462	6.81
					252.16

file

W. M. Graver

Enclosures

vj

cc: Sec. Cpr. Comm. (2) w/settlement sheets
J. F. Shaw w/settlement sheets (E595)
S. R. Wilson w/settlement sheets (E381)
S. R. Wilson w/settlement sheets (E638)
Royalty File E595 E381 E638
Royalty Report File
Chron

6. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado April 13, 1955

Liquidation No. 7403 — Lot No. 12726 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. P-1024

Address U. S. Bank Building, Grand Junction, Colorado

Type of Ore High Lime (Spodal) — Contract No. — Date Received 3-12,16,18,19-55

Mining Claim Shimerup 1A — Mining District Gryanriver — Pile No. 46

County: Grand — State: Utah — Localities: Seven Mile

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$		CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	
12726	154300	5.30	146535	.20	.04	25.4		293.03	58.61	37215.06	

		Per lb.	Per Ton	Short Tons	Total Value
U3O8					
.20% = 4.0# @		$3.50	$14.00	73.2550	$1025.61
Development allowance 4.0# @		.50	2.00	"	146.52
	TOTAL U3O8 PAYMENT		$16.00	73.2550	$1172.13
Haulage allowance 70 miles @ 6¢ per wet ton mile				77.1950	324.22
	TOTAL				$1496.35
V2O5					— —
	TOTAL				$1496.35
Less Special Penalty			2.20	73.2550	(-) 161.17
	TOTAL GROSS PRICE				$1335.18
	Deductions: Royalties: DMEA No. 3060 5% of 364.44 =			$43.22	(-) 43.22
	NET PROCEEDS				$1291.96

Correct LAJ — Paid April 14, 1955
Checked DPR — Vo. No. 4-94
Approved HCJ — Check No. 15771

DMEA
Date Rec'd.
MAY 6 1955
BUREAU OF MINES
Denver, Colorado

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By
Title
Seller or Agent

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E 638

No. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado April 20, 1955

Liquidation No. 7462 — Lot No. 12760 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. P-1024

Address U. S. Bank Building; Grand Junction, Colorado

Type of Ore Hi Lime — Contract No. Pending — Date Received 3/24/55

Mining Claim Shinerump #3 — Mining District Greenriver — Pile No. 46

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
12760	54380	5.55	51364	0.15	.06	41.6	77.05	30.82	21367.42

U308	Per Lb.	Per Ton	Short Tons	Total Value
0.15% = 3.0# at	2.50	7.50	25.6820	$192.62
Development allowance 3.0# at	.50	1.50	25.6820	38.52
Total U308 Payment		9.00	25.6820	$231.14
Haulage allowance 70 miles @6¢ per wet ton mile			27.1900	114.20
TOTAL				$345.34
Less Lime Penalty as per contract		2.20	25.6820	- 56.50
TOTAL GROSS PRICE				$288.84
Deductions:				
DMEA #3060				
5% of (136.12) =				- 6.81
NET PROCEEDS				$282.03

Correct CFK
Checked DPR
Approved HCJ

Paid 4/21/55
Vo. No. 4-253
Check No. 15921

AV

DMEA
Date Rec'd.
MAY 6 1955
BUREAU OF MINES
Denver, Colorado

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thronbrug Mining Co. — Seller or Agent

Buyers assays govern if Seller fails to submit his assays prior to acceptance of shipment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

E638

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

224 New Customhouse
Denver 2, Colorado

May 12, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Vance Elton Thornburg, dba Thornburg Mining Company -- Assignment of Contract to Thornburg Uranium Mines, Inc., Grand County, Utah

Enclosed are the Government, Division and Docket copies of Assignment of Contract which was forwarded for signature by the assignee and assignor by your letter of April 28, 1955.

Copies of the assignment have been given to the assignee and assignor, the Finance Office, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Encls.

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

May 2, 1955

Memorandum

To: Miss Curtin, Statistics and Control Division

From: Hazel Berry, Operating Committee

Subject: Amendment to Contract

Attached is the following docket copy of an amendment to a contract which has been reviewed and approved by the Commodity Division, Contract Administration and Audit Division, and by the Legal Division. The official docket did not accompany the amendment.

Vance Elton Thornburg, DMEA-3060, Idm-E638, Amendment No. 3.

Attachment 1

Surname

Depart[redacted] of the Interior

DMEA

1[redacted]01(01) Revolving Fund, Defense Production Act, Interior (Allocated Working Fund to the Office of the Secy.)

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

T E L E T Y P E

APR 29 1955

Ching
Ellis
Kiilsgaard
Guhon
Selfridge
Hoffman
Wheeler

L. M. TRAVER, EXECUTIVE OFFICER
DMEA FIELD TEAM, REGION III
224 NEW CUSTOMHOUSE BUILDING
DENVER 2, COLORADO

REURTT APRIL 27 THORNBURG MINING COMPANY DOCKET 3060

ASSIGNMENT DOCUMENTS MAILED TODAY PROVIDE THAT GOVERNMENT SHALL MAKE PAYMENT TO ASSIGNOR FOR ALL WORK PERFORMED PRIOR TO JUNE 1, 1955. PROCESS FEBRUARY-MARCH 10[illegible]'s ACCORDINGLY.

George C. Selfridge
by EST
GEORGE C. SELFRIDGE, CHAIRMAN
OPERATING COMMITTEE

MChing/gla
4-28-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T.H. Kiilsgaard, Rm. 5024
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Ching
Confirmation to Region III, DMEA

Reviewed by
DMEA OPERATING COMMITTEE
4/29/55
(date)

P.C.S.

Surname 700

Ching
Selfridge

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

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

APR 2 8 1955

Re: Docket No. DMEA-3060 (uranium)
Contract Idm-1638
Vance Alton Thornburg, d/b/a
Thornburg Mining Company
Shinarump claims
Grand County, Utah

Dear Mr. Traver:

In accordance with your memorandum of April 7, 1955 we are enclosing the original and six copies of an Assignment of Contract, Assignee's Acceptance, and Government's Consent. Please note that the latter has been executed by the Administrator.

Please secure the appropriate signatures of the Assignor and Assignee and make the proper distribution. The seventh copy is for the Assignee.

Sincerely yours,

George C. Selfridge by ESF

Chairman, Operating Committee

Enclosures

APPROVED:

/s/ Robert W. Geehan by ESF
Member, Bureau of Mines

Thor H. Kiilsgaard by ESF
Member, Geological Survey

MChing:am
4-26-55
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. J. E. Crawford, Rm. 3641
T. H. Kiilsgaard, Rm. 5224
J. O. Hosted, Rm. 3210, GSA
Code 700
Mr. Ching

R.C.G.

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

224 New Customhouse
Denver 2, Colorado

April 27, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty Payment - Thornburg Mining Company, Docket DMEA 3060, Contract Idm-E638 - Utah

Enclosed is Thornburg Mining Company check No. 1203 in the amount of $22.89 representing balance of royalty due under Liquidation No. 7365 on ore shipped to Colorado Plateau Uranium Ore Project.

Settlement sheet covering this shipment of ore was forwarded to your office on April 19, 1955.

W. M. TRAVER,

W. M. Traver

Enclosure

[illegible]

Copy to: [illegible] (2)
J. [illegible]
Royalty File E638
Chron

Chairman, Operating Comm., D.M.E.A.

RECEIVED
APR 28 1955

DN 235 BUR MINES 4-27-55 4-33 PM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REFERENCE DOCKET DMEA 3060, CONTRACT IDM-E638, THORNBURG MINING COMPANY, MATERIAL FORWARDED BY OUR MEMO OF APRIL7, 1955. OPERATOR S FORM MF-104 RECEIVED FOR MONTHS OF FEBRUARY AND MARCH 1955. SHOULD WE PROCESS THEM IN USUAL MANNER OR DEFER PROCESSING PENDING ASSIGNMENT OF CONTRACT. PLEASE TEEXX TELETYPE ADVICE.

W M TRAVER

Denver, Colo.

APR 28 9 04 AM
BUREAU OF MINE
MAIL ROOM
WASHINGTON D C

[illegible]
[illegible]ver 2, Colorado

April 19, 1955

Memorandum

To: T. A. Christensen

From: Executive Officer, DEC Field Team, Region III

Subject: Royalty Payments

Enclosed are settlement sheets and Colorado Plateau Uranium Ore Project check No. 15733 in the amount of $[illegible], in payment of royalties due under the following contracts:

Company	Permit	Contract	State	Lic. No.	Amount
Pro[illegible] Mortgualler	[illegible]	[illegible]	Colo.	[illegible]	[illegible]
				[illegible]	[illegible]
				[illegible]	[illegible]
Sunnyside Uranium	[illegible]	[illegible]	Utah	[illegible]	[illegible]
J. [illegible] Gredlich	[illegible]	[illegible]	Utah	[illegible]	[illegible]
Thomas, Finley, Co.	[illegible]	[illegible]	Ore.	[illegible]	[illegible]
					[illegible]

W. M. TRAV[illegible]

[illegible]

[illegible]
J. [illegible]
~~S. W. [illegible] w/settlement~~
[illegible]
~~[illegible]~~
[illegible]

J Z Sl[illegible]

See Royalty, Sale E[illegible] for [illegible]

Copies of transmittal letter
and settlement sheet -
Thoroughbred Mining Co. E 638.
— Originals forwarded to Wilson.

DMEA-3060

Grand Junction, Colorado [illegible] 19[illegible]

Lot No. [illegible] Shippers Lot No.

Bought of Thornburg Mining Company A.E.C. License No. [illegible]

Address U.S. Bank Building, Grand Junction, Colorado

Type of Ore [illegible] Contract No. Date Received [illegible]

Mining Claim Shinarump #1-A Mining District Greenriver Pile No. [illegible]

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$		CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	
[illegible]	152500	5.07	144780	0.19	.03	25.1		275.08	43.43	[illegible]	

[illegible]	Per lb.	Per Ton	Short Tons	Total Value
[illegible] - 3.8# at	3.30	12.54	72.3900	$907.77
[illegible] allowance 3.8# at	.50	1.90	"	137.54
[illegible] PAYMENT		14.44	72.3900	$1045.31
[illegible] allowance @ 70 miles @ 6¢ per wet ton mile			76.2500	320.32
[illegible]				$1365.63
[illegible] Lime Penalty - [illegible] per contract		2.20	72.3900 x (-)	159.36
[illegible], GROSS PRICE				$1206.34
[illegible]: Royalties: DMEA #3060 5% of (746.31) =			(-)	37.43
[illegible]				$1168.91

[illegible] CFK
[illegible] DFK
[illegible] HJ

Paid March 24, 1955
Voucher No. 3/[illegible]
Check No. 15578

APR 13 1955

BUREAU OF MINES
Denver, Colorado

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company

By: Seller or Agent

Title

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

April 13, 1955

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare & Miscellaneous Metals Division

Subject: Amendment to contract

Mr. Ching has reviewed and approved Amendment No. 3, dated April 5, 1955, to Contract Idm-E638, Docket DMEA-3060 (Uranium), Vance Elton Thornburg.

/s/ Grace L. Ault

Grace L. Ault

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

Surname copy

Ching
Ellis

April 13, 1955

Memorandum

To: Acti g Assistant Solicitor, DMEA

From: Michael Ching, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3060 (Uranium)
Contract Idm-E638
Vance Elton Thornburg, d/b/a
Thornburg Mining Company
Shinarump claims
Grand County, Utah

Reference is made to Mr. W.M. Traver's memorandum of April 7, 1955, to the Operating Committee, enclosing the Operator's letter of March 24, 1955, requesting the assignment of the subject contract to Thornburg Uranium Mines, Inc., and certain documents pertaining thereto, which have been placed in the docket file.

Kindly prepare the necessary documents to effectuate the requested assignment.

Michael Ching

MChing/gla
cc to: Docket file
Code 700 contract file
Mr. Ching

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

224 New Customhouse
Denver 2, Colorado

April 7, 1955

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3060 (Uranium), Contract Idm-E638, Vance Elton Thornburg, dba Thornburg Mining Company (Shinarump claims), Grand County, Utah

Enclosed is the following material relative to the assignment of the subject contract:

1. Original and three copies of the operator's letter of March 24, 1955 requesting the assignment of the contract from Thornburg Mining Company to Thornburg Uranium Mines, Inc.

2. One photostat copy each of Entry No. 250160 and Entry No. 250161, Mining Deed and transmittal thereof from the operator dated April 5, 1955

If the documents are in order and suffice, we recommend that the assignment be approved.

W. M. Traver

W. M. Traver

Enclosures

THORNBURG
MINING
COMPANY

140## WEST MAIN GRAND JUNCTION, COLO.

DMEA
Date Rec'd
APR 6 1955
BUREAU OF MINES
Denver, Colorado

April 5th, 1955

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

Re: Docket DMEA 3060
Contract Idm-E-638

Dear Mr. Traver:

We acknowledge receipt of your letter of March 28th, 1955.

As per your request, we submit herewith photostat copies of original documents providing for the transfer of interests from Thornburg Mining Company to Thornburg Uranium Mines, Inc.

Very truly yours,

J. T. Tunnell
Office Mgr.

JTT/g

#23.10

Entry No. 250160 Filed for record 11-26-54 at 9:00 a.m.
Bk. 51, page 553-54 EMMA M. DALTON Recorder Grand Co., Utah
Deputy
Fee 23.10, Abs

MINING DEED

THIS INDENTURE made this 4th day of [illegible], 1954, between Vance Thornburg, d/b/a Thornburg Mining Company, of Grand Junction, _____ County, Colorado, E. V. Christie, Walter Todd, A. Gordon Crockett and Claude T. Crockett, of Houston, Harris County, Texas, parties of the first part, and Thornburg Uranium Mines, Inc., a corporation organized and existing under the laws of the State of Delaware, party of the second part

W I T N E S S E T H :

That the said parties of the first part for and in consideration of the sum of Ten Dollars ($10) and other valuable consideration to them in hand paid by the second party, the receipt whereof is hereby acknowledged, hereby grant, bargain, sell, remise, release, convey, and quit-claim unto the said party of the second part and to its successors and assigns, the following described mining claims:

Those certain unpatented lode mining claims situated, lying and being in Grand County, State of Utah, the names of which together with the location notices thereof are of record in the office of the County Recorder of Grand County, Utah, in the book and in the page numbers of Records of Mines, as follows, to-wit:

Name of Claim	Book	Page	
Berma #5	12	77	
Berma #6	12	78	
Berma #7	12	79	
Berma #8	12	80	
Berma #9	12	81	
Berma #10	12	82	
Butte #1	15	81	(Amended)
Butte #2	15	82	(Amended)
Carrol #8	12	438	
Carrol #9	12	439	
Carrol #10	12	440	

Name of Claim	Book	Page	
Daysend #1	15	79	(Amended)
Daysend #2	15	80	(Amended)
Dell #6	12	429	
Dell #7	12	430	
Dell #8	12	431	
Dell #9	12	432	
Dell #10	12	433	
Gara #1	11	190	(Amended)
Jim #1	12	120	
Jim #2	12	121	
Jim #3	12	122	
Jim #4	12	123	
Jim #5	12	124	
Jim #6	12	125	
Jim #7	12	126	
Jim #8	12	127	
Jim #9	12	128	
Jim #10	12	129	
Kathy #1	12	110	
Kathy #2	12	111	
Kathy #3	12	112	
Kathy #4	12	113	
Kathy #5	12	114	
Kathy #6	12	115	
Kathy #7	12	116	
Kathy #8	12	117	
Kathy #9	12	118	
Kathy #10	12	119	
Kit #1	12	97	
Kit #2	12	98	
Kit #3	12	99	
Kit #4	12	100	
Kit #5	12	101	
Kit #6	12	102	
Kit #7	12	103	
Kit #8	12	104	
Kit #9	12	105	
Kit #10	12	106	
Last Chance	15	48	(Amended)
Mickey #1	9-O	155	
Mickey #2	9-O	156	
Mickey #3	9-O	157	
Mickey #4	9-O	158	
Mickey #5	9-O	159	
Mickey #6	9-O	160	
Nora #5	9-N	428	
Nora #6	9-N	429	
Nora #7	9-N	430	
Nora #8	9-N	431	
Nora #9	9-N	432	
Nora #10	9-N	433	
Nora #11	9-N	434	
Nora #12	9-N	435	
Nora #13	9-N	436	
Nora #14	9-N	437	
Nora #15	9-N	438	
Nora #16	9-N	439	
Nora #17	9-N	440	
Nora #18	9-N	441	
Nora #19	9-N	442	
Nora #20	9-O	75	

Name of Claim	Book	Page	
Pitchblende #1	15	73	(Amended)
Pitchblende #2	15	74	(Amended)
Pitchblende #3	15	75	(Amended)
Pitchblende #4	15	76	(Amended)
Pitchblende #5	15	77	(Amended)
Pitchblende #6	15	78	(Amended)
Pitchblende #11	12	91	
Pitchblende #12	12	92	
Pitchblende #13	12	93	
Pitchblende #14	12	94	
Ring Cone	15	47	(Amended)
Samson #1	15	69	(Amended)
Samson #2	15	70	(Amended)
Shinarump #1	11	188	(Amended)
Shinarump #1-A	11	187	(Amended)
Shinarump #3	11	189	(Amended)
Shinarump #4	11	548	(Amended)
Sunset #1	15	71	(Amended)
Sunset #2	15	72	(Amended)
Vance Thornburg	11	264	(Amended)
Verna #1	9-0	40	
Verna #2	9-0	41	
Verna #3	9-0	42	
Verna #4	9-0	43	
Verna #5	9-0	44	
Verna #6	9-0	45	
Verna #7	9-0	46	
Verna #8	9-0	47	
Verna #9	9-0	48	

Together with all and singular the mines, minerals, lodes and veins within the lines of said claims, and their dips and spurs and all dumps, stockpiles, plants, fixtures, improvements, rights, privileges and appurtenances thereunto and anywise belonging.

TO HAVE AND TO HOLD the lands, tenements and hereditaments hereby conveyed unto the second party, its successors and assigns forever.

This conveyance is made subject to the terms and conditions of the Exploration Project Contract executed by and between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration and Vance Thornburg, d/b/a Thornburg Mining Company, dated November 13, 1953, and party of the second part expressly recognizes and warrants to preserve the United States' right to the percentage royalty on production and lien for the payment thereof provided in said contract.

IN WITNESS WHEREOF, the said parties of the first part have hereunto set their hands the day and year first above written.

Vance Thornburg, d/b/a
Thornburg Mining Company

B. V. Christie

Walter Todd

A. Gordon Crockett

Claude T. Crockett

THE STATE OF TEXAS)
COUNTY OF HARRIS)

On the 14th day of September, A. D. 1954, personally appeared before me Vance Thornburg, the signer of the above instrument, who duly acknowledged to me that he executed the same.

Notary Public in and for
Harris County, Texas.

THE STATE OF TEXAS)
COUNTY OF HARRIS)

On the 14th day of September, A. D. 1954, personally appeared before me B. V. Christie, Walter Todd, A. Gordon Crockett and Claude T. Crockett, the signers of the above instrument, who duly acknowledged to me that they executed the same.

Notary Public in and for
Harris County, Texas.

Name of Claim	Book	Page	
Dell #6	12	429	
Dell #7	12	430	
Dell #8	12	431	
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Dell #10	12	433	
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Jim #4	12	123	
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Jim #6	12	125	
Jim #7	12	126	
Jim #8	12	127	
Jim #9	12	128	
Jim #10	12	129	
Kathy #1	12	110	
Kathy #2	12	111	
Kathy #3	12	112	
Kathy #4	12	113	
Kathy #5	12	114	
Kathy #6	12	115	
Kathy #7	12	116	
Kathy #8	12	117	
Kathy #9	12	118	
Kathy #10	12	119	
Kit #1	12	97	
Kit #2	12	98	
Kit #3	12	99	
Kit #4	12	100	
Kit #5	12	101	
Kit #6	12	102	
Kit #7	12	103	
Kit #8	12	104	
Kit #9	12	105	
Kit #10	12	106	
Last Chance	15	48	(Amended)
Mickey #1	9-0	155	
Mickey #2	9-0	156	
Mickey #3	9-0	157	
Mickey #4	9-0	158	
Mickey #5	9-0	159	
Mickey #6	9-0	160	
Nora #5	9-N	428	
Nora #6	9-N	429	
Nora #7	9-N	430	
Nora #8	9-N	431	
Nora #9	9-N	432	
Nora #10	9-N	433	
Nora #11	9-N	434	
Nora #12	9-N	435	
Nora #13	9-N	436	
Nora #14	9-N	437	
Nora #15	9-N	438	
Nora #16	9-N	439	
Nora #17	9-N	440	
Nora #18	9-N	441	
Nora #19	9-N	442	
Nora #20	9-0	75	

Name of Claim	Book	Page	
Pitchblende #1	15	73	(Amended)
Pitchblende #2	15	74	(Amended)
Pitchblende #3	15	75	(Amended)
Pitchblende #4	15	76	(Amended)
Pitchblende #5	15	77	(Amended)
Pitchblende #6	15	78	(Amended)
Pitchblende #11	12	91	
Pitchblende #12	12	92	
Pitchblende #13	12	93	
Pitchblende #14	12	94	
Ring Cone	15	47	(Amended)
Samson #1	15	69	(Amended)
Samson #2	15	70	(Amended)
Shinarump #1	11	188	(Amended)
Shinarump #1-A	11	187	(Amended)
Shinarump #3	11	189	(Amended)
Shinarump #4	11	548	(Amended)
Sunset #1	15	71	(Amended)
Sunset #2	15	72	(Amended)
Vance Thornburg	11	264	(Amended)
Verna #1	9-0	40	
Verna #2	9-0	41	
Verna #3	9-0	42	
Verna #4	9-0	43	
Verna #5	9-0	44	
Verna #6	9-0	45	
Verna #7	9-0	46	
Verna #8	9-0	47	
Verna #9	9-0	48	

which undivided one-sixth (1/6) interest is to be held by the said parties of the second part in the undivided fractional interests in and to the unpatented mining claims herein conveyed as set forth hereinbelow opposite their respective names:

B. V. Christie	One-Twentieth (1/20)
Walter Todd	One-Twentieth (1/20)
A. Gordon Crockett	One-Thirtieth (1/30)
Claude T. Crockett	One-Thirtieth (1/30)

Together with all and singular the mines, minerals, lodes and veins within the lines of said claims, and their dips and spurs and all dumps, stockpiles, plants, fixtures, improvements, rights, privileges and appurtenances thereunto and anywise belonging.

TO HAVE AND TO HOLD the lands, tenements and hereditaments hereby conveyed unto the second parties, their heirs and assigns forever.

This conveyance is made subject to the terms and conditions of the Exploration Project Contract executed by and between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration and the first party, dated November 13, 1953, and parties of the second part expressly recognize and warrant to preserve the United States' right to the percentage royalty on production and lien for the payment thereof provided in said contract.

IN WITNESS WHEREOF, the said party of the first part has hereunto set his hand the day and year first above written.

Vance Thornburg
d/b/a Thornburg Mining Company

THE STATE OF TEXAS)
COUNTY OF HARRIS)

On the [illegible] day of [illegible], A. D. 1954, personally appeared before me Vance Thornburg, the signer of the above instrument, who duly acknowledged to me that he executed the same.

Notary Public in and for
Harris County, Texas.

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

224 New Customhouse
Denver 2, Colorado

April 5, 1955

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Vance Elton Thornburg, dba Thornburg Mining Co., Grand County, Utah

Enclosed are the original and two copies of Amendment No. 3 to Contract Idm-E638 which has been executed to extend the period for completion of the project work from 16 months to 22 months and extends the period for repayment from 10 years to 11 years. Also enclosed are three copies of the operator's letter requesting the extension of the period for completion of the project work.

Copies of the amendment have been given to the operator, the Finance Officer, Region III, and a copy has been retained for our files.

W. M. Traver

W. M. Traver

Enclosures

RECEIVED

APR 20 1955

GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

DMEA
Date Rec'd
FEB 24 1955

February 23, 1955

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

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E-636

Dear Mr. King:

Due to the fact that the extended time period under our Exploration Project Contract will expire on March 13, 1955, we believe it will be necessary to request an additional time period in order to complete the work as outlined in the above stated Docket-Contract.

We would like at this time to request an extended time period of six (6) months which we believe will give us ample time to finish Stage II of theproject.

Very truly yours,

J. T. Tunnell
Office Manager

JTT:bp

THORNBURG
MINING
COMPANY

140 ~~160~~ WEST MAIN

GRAND JUNCTION, COLO.

March 24th, 1955

DMEA
Date Rec'd

MAR 25 1955

BUREAU OF MINES
Denver, Colorado

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

Re: Docket DMEA 3060 (Uranium)
Contract Idm-E-638

Dear Sir:

We wish to advise that a portion of the uranium mining claims owned by Thornburg Mining Company have been incorporated under the name of Thornburg Uranium Mines, Inc., with offices located at 160 West Main Street, Grand Junction, Colorado. Among the claims incorporated are the holdings listed in Article 2 of Exploration Project Contract Form MF-200(A) on which Contract Idm-E-638 is prepared.

Vance Thornburg, owner of Thornburg Mining Company, is also the majority stockholder in the newly incorporated Thornburg Uranium Mines, Inc.

In order to be in compliance with Article 7 of Project Contract Form MF-200(A) we hereby respectfully request that all interests of Thornburg Mining Company in said contract be assigned to Thornburg Uranium Mines, Inc.

Very truly yours,

J. T. Tunnell, Office Mgr.

JTT/g

Form No. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello — Grand Junction, Colorado March 23 19 55

Liquidation No. 7365 — Lot No. 12705 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. P-1024

Address U.S. Bank Building; Grand Junction, Colorado

Type of Ore Mill Line — Contract No. — Date Received 3/12/55

Mining Claim Shinerump #1-A — Mining District Greenriver — Pile No. 46

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
12705	152520	5.07	144780	0.19	.03	25.1	275.08	43.43	36339.78

U308	Per Lb.	Per Ton	Short Tons	Total Value
0.19% = 3.8# at	3.30	12.54	72.3900	$907.77
Development allowance 3.8# at	.50	1.90	"	137.54
TOTAL U308 PAYMENT		14.44	72.3900	$1045.31
Haulage allowance @ 70 miles @ 6¢ per wet ton mile			76.2600	320.29
TOTAL				$1365.60
Less Lime Penalty - as per contract		2.20	72.3900 @ (-)	159.26
TOTAL GROSS PRICE				$1206.34
Deductions: Royalties: DMEA #3060 5% of (748.51) =			(-)	37.43
NET PROCEEDS				$1168.91

Correct CFK
Checked DPK
Approved HCJ

Paid March 24, 1955
Voucher No. 3/298
Check No. 15578

APR 13 1955
BUREAU OF MINES
Denver, Colorado

jcw

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and hav legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5–U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By: Seller or Agent
Title

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

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

224 New Customhouse
Denver 2, Colorado

November 24, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: Royalty - Thornburg Mining Company
Docket No. 3060, Contract No. E638, Utah

Enclosed is Thornburg Mining Company's check, No. 1052, in the amount of $5.91 which represents the balance of royalty due on Liquidation No. 6257.

Settlement sheet was forwarded to you November 8, 1954

W. H. King

mm

cc: Royalty File E638
Sec. to the Oper. Comm. (2)
Wilson
Chron.

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

NOV 22 1954

224 New Customhouse
Denver 2, Colorado

November 16, 1954

Memorandum

To: Chairman, Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Mining Company, Grand County, Utah.

Enclosed for your records are three copies of the DMEA Field Team, Region IV, approval of work to be performed under Stage II of the contract. Also enclosed are three sets of data relevant to the work authorization.

W. H. King

Enclosures

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
RECEIVED
NOV 22 1954

November 16, 1954

Mr. J. T. Tunnell, Office Manager
Thornburg Mining Company
160 West Main
Grand Junction, Colorado

Re: Docket No. DMEA 3060 (Uranium)
Contract Idm-E638
Thornburg Mining Company
Grand County, Utah

Dear Mr. Tunnell:

With reference to your letter of October 15, 1954, to Mr. W. M. Traver, you are hereby authorized to perform the following work under Stage II of Contract Idm-E638:

(1) Extend the westerly drift in the south workings an additional 250 feet westerly on the upper ore horizon.

(2) Drill 10 sample drill holes downward to a depth of 25 feet at 25 foot intervals in the drift under item (1) to explore lower ore horizons. The sample drill holes will be logged and probed with radiometric sampling equipment as outlined for the sample drilling under Stage I.

The Government's approval for the performance of the remaining footage of drifting and sample drilling is deferred pending analysis of the results of the above approved work.

Very truly yours,

for A. L. Brokaw
A. H. King

JWT:dm
cc: Amendment file
TAChristensen
JWTownsend
AHKoschmann (w/encl.)
WMTraver " "
ALBrokaw " "
Subject " "
Chm.,Oper.Comm " (3)
Chron

E. M. Koschmann
A. H. Koschmann

DMEA Field Team, Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

NOV 22 1954

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
November 8, 1954

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: N. H. Salsbury

Subject: DMEA 3060, contract Idm-2638 (Uranium) Thornburg Mining Company (Shimarump claims) Grand County, Utah - Recommendations for Stage II exploration

The operator under the subject contract has completed work called for under Stage I and has requested authorization to proceed with Stage II.

As set up in the contract, Stage II would consist of drifting 225 feet in a southerly direction from the present south face in the north workings and 250 feet in a westerly direction from the present west face in the south workings, to be followed by sample drill holes at intervals along these openings.

The operator, through his superintendent, has proposed essentially this same program verbally to the DMEA inspector.

Exploration to date has shown that ore deposition has taken place throughout the general area opened up so far, although no definite trends have been established. The individual lenses are erratic in size, grade, and placement. They occur in different strata within a range of about 20 feet vertically.

Sampling has indicated that the average ore grade as mined will be low. The erratic distribution of ore both horizontally and vertically will make mining costs high and profitable operation will be difficult to achieve.

Further exploration of the area between the north and south workings does not appear to be necessary as it will be opened up by the operator's mining operations. This also rules out consideration of work at Prospect No. 4, an alternate Stage II proposal mentioned in exhibit "A" of the contract.

There is a distinct possibility that mineralization may extend west of present workings in an unexplored area under the Wingate formation which is too deep for practical exploration by drilling from surface.

To examine this area, the operator has proposed driving west in the south workings, as provided for in Stage II of the contract, to follow mineralization in the present face which has dipped steeply (about 10°) below the floor. He believes that this steep dip may represent a thickening of the potential ore horizon and that a point of maximum thickness may be found westward with better mineralization present. It is proposed to drive north and south from this west drift at a favorable point if mineralization is met.

In the north workings, the operator proposes to turn the proposed south drift to a southwest direction to achieve the same purpose. There is no mineralization showing in the present south face.

Experience has shown that it is not possible to explore the potential ore horizon adequately by drifting or crosscutting above. Therefore, it is proposed to drill the formations from drill stations at 25-foot intervals with holes 25 feet down and 25 feet up from each station, in a manner similar to the procedure followed in Stage I.

In the opinion of the BMA inspector, driving from both north and south workings to the west is an unnecessary duplication at this time. It is possible that mineralization extends west of the present workings and there is a distinct possibility that the ground explored so far may be a "fringe" area with better mineralization occurring ahead. However, it is not necessary to explore this area from two headings, in the absence of any evidence to indicate that it is advisable to do so.

Because the heading in the south workings shows mineralization in the floor, this appears to be the best of the two proposals. The 225 feet of Stage II drifting in the north workings, which require approval by the Region IV Field Team, should be deferred until later. After the results of Stage II drifting in the south workings have been evaluated, the best location to employ the additional footage can be determined to better advantage.

Examination of the workings by Geological Survey personnel indicates that the upper potential ore-bearing horizon is now just below the floor of the west heading in the south workings. The heading should be driven on this horizon which will necessitate taking up bottom for some distance back of the face. Under no circumstances should the drift be driven above the horizon. The estimated maximum 10° dip of the beds is close to the steepest grade on which the operator's haulage equipment will operate satisfactorily.

Sample drilling above the drift is not necessary because it has already been determined that there are no probable ore horizons above.

Drilling of 25-foot sample holes downward at 25-foot intervals along the drift should be made to test potential horizons occurring below.

It is not practical to take sludge samples in down holes. Efforts to do so in holes previously drilled at this property were unsuccessful. The sludge obtained did not check radioactivity indicated by probing. Probing appears to be the only way to evaluate such drill holes.

It is recommended that 250 feet of drifting in a westerly direction from the present west face in the south workings, to be driven on but not above the upper ore horizon be approved, with the additional 225 feet of drifting under Stage II in the north workings to be deferred. A total of 250 feet of sample drilling downward in 10 holes 25 feet deep at 25-foot intervals along the new west drift is also recommended for Stage II. This is considerably less than the maximum of sample drilling called for in Stage II. Additional drilling may be required later, if more drifting is done.

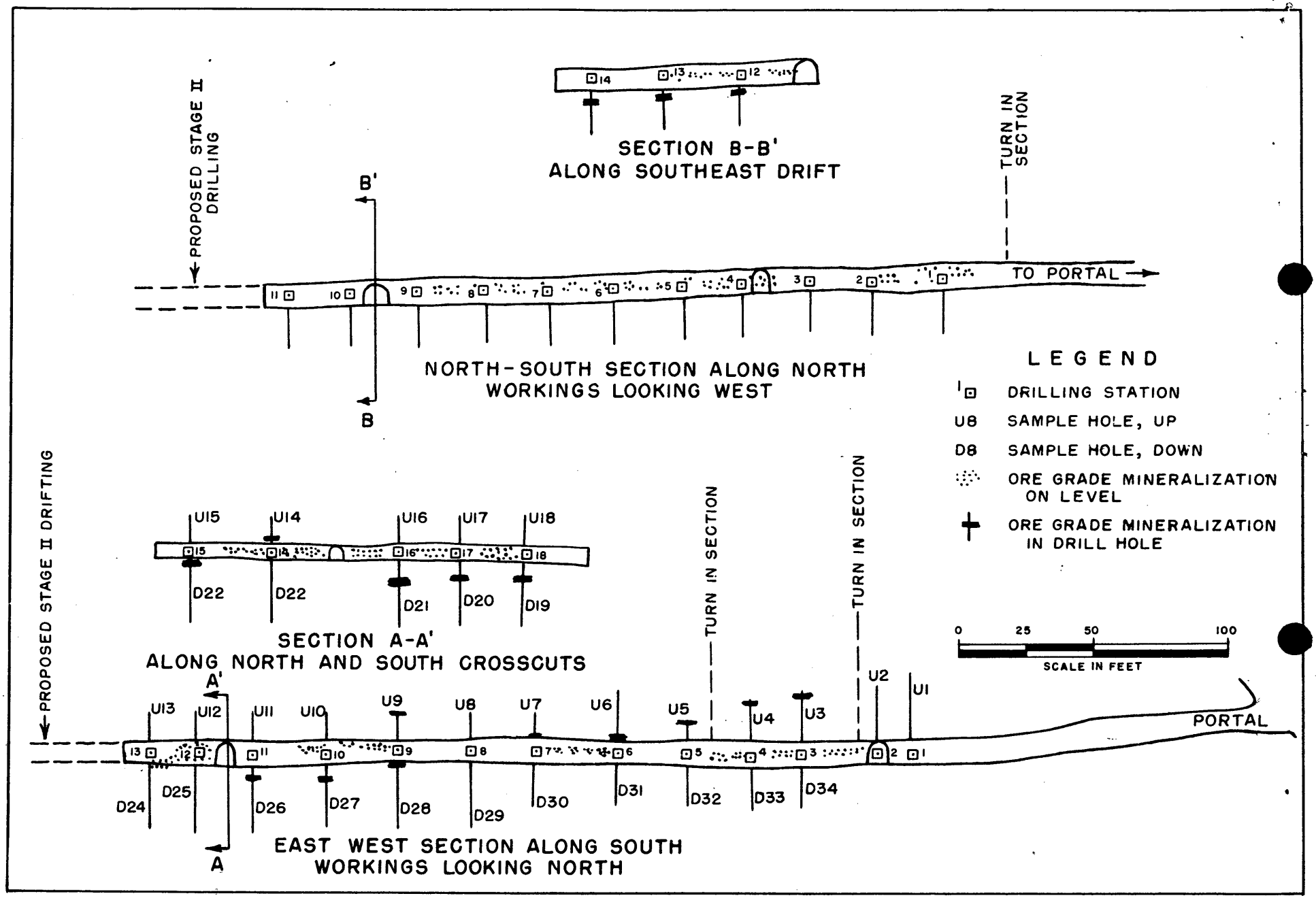
Sampling of the down holes should be confined to radiometric probing. Taking of sludge samples should not be required and chemical analyses should be made only of suspected uranium-bearing material found in the workings.

The operator's superintendent has indicated they will accept this program.

M. H. Salsbury
M. H. Salsbury
Mining Engineer

cc 3
Ldn
DMRA Gheen.

MHS/yak



LOCATION OF SAMPLE HOLES AND MINERALIZATION, THORNBURG MINING CO.
SHINARUMP CLAIMS, GRAND COUNTY, UTAH (DMEA 3060, CONTR. IDM-E638)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
COLORADO PLATEAU DISTRICT
P. O. BOX 360
GRAND JUNCTION, COLORADO

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 22 1954

October 29, 1954

Memorandum

To: A. H. Koschmann, Supervising Geologist, DMEA Field Team Region IV E.M.H. for A.H.K

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3060 (Uranium), Contract Idm-E 638, Thornburg Mining Company, Grand County, Utah

Transmitted herewith are eleven copies of a memorandum interim report by H. S. Johnson, covering the above-referenced DMEA project.

Since stage I work under the terms of the contract has been successful in finding ore-grade material, Johnson recommends that the project work be carried on under stage II of the contract. Johnson lists three alternative methods of pursuing stage II, but is in favor of transferring drift footage from the north workings to the south drift.

W P Williams
For Arnold L. Brokaw

WPW/mlr

Enclosures 11

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
COLORADO PLATEAU DISTRICT
P. O. BOX 360
GRAND JUNCTION, COLORADO

October 29, 1954

Memorandum

To: A. H. Koschmann, Supervising Geologist, DMEA Field Team, Region IV

From: Arnold L. Brokaw, District Supervisor

Subject: DMEA 3060 (Uranium), contract Idm-E 638, Thornburg Mining Company, Grand County, Utah

On being informed that all stage I exploration (see subject contract) had been completed, the writer visited the Thornburg property on October 25, 1954, to observe the results of the work to that date and to form an opinion as to whether or not the operator should be authorized to proceed with stage II of the project.

Ed Johnson, superintendent of operations on the Thornburg property, was present during the examination and expressed an opinion as to how he thought stage II work should proceed. The possible stage II procedures given in the following paragraphs are essentially in agreement with what Ed himself would like to do.

The writer is of the opinion that some form of stage II work should be allowed on the subject project. The following list gives three possible choices for this stage II work:

1st choice.-- Transfer the 225 feet of stage II drift from the north workings to the south workings so as to allow a total of 475 feet of stage II drifting in a westerly direction from the south workings. This would, in effect, cancel all stage II work in the north workings.

2nd choice.-- Proceed with the 250 feet of stage II drifting in the south workings as specified by the contract. Proceed with the 225 feet of stage II drifting in the north workings, but turn the drift in a southwesterly direction rather than continue in the southerly direction specified by the contract. This change in direction is suggested so that the drift will advance in unexplored ground rather than toward the two barren AEC drill holes (hole numbers 213 and 211).

3rd choice.-- Cancel all stage II work in the north workings. Proceed with the 250 feet of stage II drifting in the south workings as specified by the contract.

Any one of the three choices for stage II work listed above is agreeable to the writer, although they are listed in what he considers to be the order of desirability. Any further drifting from either the north or south workings should follow the dip of the beds and not be allowed to rise up through them. The westermost extension of the drift in the south workings had already proceeded (at company expense) approximately 48 feet beyond the stage I crosscut as of October 25, 1954, and, having been driven on the level, had passed up through and out of the uppermost mineralized bed at a point about 20 feet west of the stage I crosscut. Stage II work should begin at this point where the mineralized bed disappears into the floor of the drift and should proceed westward on the 8-10 degree dip necessary to stay within the mineralized horizon. Because both the north and south workings are now in the uppermost of the three known ore horizons in this area, long jackhammer, or stoper, holes should be drilled down at regular intervals to depths of 25 feet or so below the floor of any stage II drift which parallels the dip of the beds from the present workings. Under no circumstances would the writer approve any drifting from Prospect No. 4 (see under stage II part of exhibit "A" attached to the contract) in lieu of stage II work in the north or south workings.

H. S. Johnson
For Arnold L. Brokaw WRJ

HSJ/mlr

COPY

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 22 1954

Region IV

Building 20, Room 137
Denver Federal Center
Denver 2, Colorado
October 22, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3060, Contract Idm-E638 (Uranium) Thornburg Mining Company (Shinarump claims) Grand County, Utah

Enclosed are 6 copies of the operator's September 1954 progress transmittal, on the above docket, in which he reports completion of Stage I of the contract and requests authority to proceed with State II.

/s/ W.M. Traver

Enclosures

cc 1
E638
DMEA Chron.

WMT:dj

THORNBURG
MINING
COMPANY

140 160 WEST MAIN

GRAND JUNCTION, COLO.
October 15th, 1954

Mr. [illegible] Trever Jr. Chief
Mineral Resources Branch
Mining Division, Region IV
Denver, Colorado.

Date Rec'd
BUREAU OF MINES
Denver, Colorado

Re: Docket No. [illegible]-3060
Contract [illegible]-4-635

Dear Mr. Trever:

We submit herewith our report for the month of September by cover with a certified statement from Smith's Laboratory, Moab, Utah, covering the assays reported therein.

This report should conclude the operations under Stage 1 of the project and we will await government determinations for procedure under Stage 2.

Very truly yours,

J. T. Tunnell, Office Mgr.

JTT/e

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

224 New Customhouse
Denver 2, Colorado

November 8, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: Royalty Payments

Enclosed are settlement sheets and Colorado Plateau Uranium Ore Project's check, No. 13878, in the amount of $98.80 in payment of royalties on the following contracts:

Liq. No.	Docket No.	Contract No.	State	Name	Amount
6257	3060	E638	Utah	Thornburg Mining Co.	$ 6.34
6331	1957	E397	Utah	Ellihill Mining Co.	88.57
6349	2135	E381	Utah	Sunnyside Uranium Co.	3.89
					$ 98.80

/s/ John F. Shaw

John F. Shaw
For W. H. King

Enclosures

mn

cc: Royalty File E638
E397
E381

Sec. to the Oper. Comm. (2) w/enc. settlement sheets
Wilson (3) w/enc. settlement sheets
Chron.

No. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Marysvale, Utah — Grand Junction, Colorado October 16, 1954

Liquidation No. 6349 — Lot No. 1815 — Shippers Lot No.

Bought of Sunnyside Uranium Company — A.E.C. License No. P-511

Address c/o Lane J. Bertelsen; Marysvale, Utah (Sept. Del.)

Type of Ore Uraninite — Contract No. 172-[illegible] — Date Received 9/1/54

Mining Claim Buddy — Mining District Durkee — Pile No. 22

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$		CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	
1815	11070	5.4	10472	0.21	-	-		21.99	-	-	

U_3O_8	Per Lb.	Per Ton	Short Tons	Total Value
0.21% = 4.2# at	3.50	14.70	5.2360	$76.96
Development allowance 4.2# at	.50	2.10	"	11.00
Premium In excess of 4# per ton 4.2# - 4# = .2# at	.75	.15	"	.79
TOTAL U_3O_8 PAYMENT		16.95	5.2360	$88.75
Haulage allowance 7 miles @ 6¢ per wet ton mile			5.5350	2.32
TOTAL				$91.07

V_2O_5

No Pay — - - -

TOTAL GROSS PRICE		$91.07
Deductions:		
Royalty: DMEA 5% of (77.75)	3.89	
Cash Advance	70.00	-73.89
NET PROCEEDS		$17.18

Correct CFK — Paid October 16, 1954
Checked DPR — Vo. No. 10/162
Approved HCJ — Check No. 13665

sp

E 381

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Sunnyside Uranium Company
By
Title
Seller or Agent

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 8 - 1954

224 New Customhouse
Denver 2, Colorado

November 3, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: Royalty - Thornburg Mining Company
Docket No. 3060, Contract No. E638, Utah

Enclosed is Thornburg Mining Company's check, No. 1023, in the amount of $21.02 which represents the balance of royalty due on the following:

Liquidation No. 6064	$ 5.35
Liquidation No. 6107	15.67
	$21.02

Settlement sheets were forwarded to you October 15, 1954.

W. H. King

mn

cc: Royalty File E638
Sec. to the Oper. Comm. (2)
Wilson
Chron.

October 23, 1954

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare & Miscellaneous Metals Division

Subject: Amendment to contract

Mr. Ching has reviewed Amendment No. 2, dated October 12, 1954, to Contract No. Idm-E638, Docket DMEA-3060, Thornburg Mining Company, and has approved it.

/s/ Grace L. Ault

Grace L. Ault

30 60

224 New Customhouse
Denver 2, Colorado

October 15, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: Royalty Payments

The attached Colorado Plateau Uranium Ore Project's check, No. 13605, in the amount of $768.01 is to be deposited in the suspense account. 1 check in the amount of $15.59, isto be issued to Defense Minerals Exploration Administration and forwarded to the Region 11 office with the attached copies of settlement sheets for Eiselein, Nelligan and Nineminen, Liquidation No. 6158.

Balance of this check, $752.42, is to be credited to payments of royalties due as follows:

Liq. No.	Docket No.	Contract No.	State	Name	Amount
6128	3117	E633	Colo.	Clarence L. Neilson	$ 6.66
6164	2135	E381	Utah	Sunnyside Uranium Co.	242.49
6166	2888	E595	Colo.	Fred Schwartzwalder	342.69
6429	1957	E397	Utah	Ellihill Mining Co.	138.96
6107	3060	E638	Utah	Thornburg Mining Co.	17.19
6064	3060	E638	Utah	Thornburg Mining Co.	4.43
					$ 752.42

/s/ W. H. King

W. H. King

Enclosure

Form No. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado September 16, 1954

Liquidation No. 6107 — Lot No. 11758 — Shippers Lot No.

Bought of Thornburg Mining Co. — A.E.C. License No. P-1024

Address U. S. Bank Building, Grand Junction, Colorado

Type of Ore Hi Lime — Contract No. 192-S — Date Received 8/28-31/54

Mining Claim Shinerump #3 — Mining District Greenriver — Pile No. 23

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$		CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$	
11758	108560	1.66	106756	0.16				170.81			

U3O8	Per Lb.	Per Ton	Short Tons	Total Value
0.16% equals 3.2# at	2.70	8.64	53.3780	$461.19
Development allowance 3.2# at	.50	1.60	"	85.40
TOTAL U3O8 PAYMENT		10.24	53.3780	$546.59
Haulage allowance 70 miles @ 6¢ per wet ton mile			54.2800	227.98
TOTAL				$774.57

V2O5				
No Pay				- - -
TOTAL				$774.57
Less Lime Penalty as per contract		2.20	53.3780	-117.43
TOTAL GROSS PRICE				$657.14
Deductions:				
Royalties: DMEA #3060				
5% of 343.76				- 17.19
NET PROCEEDS				$639.95

Correct CFK — Paid September 16, 1954
Checked DPR — Vo. No. 9/88
Approved RCJ — Check No. 13285

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Co.
By
Title
Seller or Agent

*Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

Form No. O-4 8-54 25M

COLORADO PLATEAU URANIUM ORE PROJECT

American Smelting and Refining Company, Ore Purchasing Agent For
United States Atomic Energy Commission

Receiving Station Monticello, Utah — Grand Junction, Colorado September 9, 1954

Liquidation No. 6064 — Lot No. 11712 — Shippers Lot No.

Bought of Thornburg Mining Company — A.E.C. License No. R-1 24

Address U. S. Bank Building, Grand Junction, Colorado

Type of Ore Uranium Bearing Ores — Contract No. 192-S — Date Received 8/21/54

Mining Claim Shinerump 1 A — Mining District Greenriver — Pile No. MSP

Lot No.	Wet Weight Pounds	H_2O	Dry Weight Pounds	SETTLEMENT ASSAYS U_3O_8	V_2O_5	$CaCO_3$	CONTENTS POUNDS U_3O_8	V_2O_5	$CaCO_3$
11712	39820	2.35	38884	.12			46.66		

U3O8	Per Lb.	Per Ton	Short Ton	Total Value
.12% = 2.4# at	1.90	4.56	19.4420	88.66
Development allowance 2.4# at	.50	1.20	"	23.33
TOTAL U3O8 PAYMENT		5.76	19.4420	111.99
Haulage allowance 70 miles @ 6¢ per wet ton mile			19.9100	83.62
TOTAL				195.61

V2O5

No Pay — — —

TOTAL GROSS PRICE	195.61
Deductions:	
Royalties: DMEA 3060	
5% of (83.66) =	- 4.43
NET PROCEEDS	191.18

Correct CFK — Paid September 9, 1954
Checked DPS — No. N - 9/11
Approved HEB — Check No. 13243

sp

NOTE: NO LIMITS PENALTY ASSESSED 4/C LBS. ABOVE - PURCHASED FOR BONUS PURPOSES.

I certify that I am the lawful owner or authorized Representative of the Lawful Owner, of the Ore described in this Settlement Sheet and have legal right to deliver the same to the Commission.

I certify that I hold the A. E. C. Source Material License numbered above.

I hereby transfer to the Commission, effective as of the date of delivery of the ore, all my right, title and interest in and to said ore.

I will accept the amount as shown above as "Total Gross Price" in full settlement, except for final quarterly adjustment for average V_2O_5—U_3O_8 ratio, for sums due to me on account of the ore deliveries described herein.

Thornburg Mining Company
By _____ Seller or Agent
Title

Buyers assays govern if Seller fails to submit his assays prior to acceptance of payment.
All rates paid are based on U. S. Atomic Energy Commission Published Schedules.

®

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

OCT 18 1954

224 New Customhouse
Denver 2, Colorado

October 12, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3060 (Uranium), Contract IDM-E638, Thornburg Mining Company, Grand County, Utah

Enclosed are the original and two copies of Amendment No. 2 to Contract Idm-E638 which has been executed to extend the period for completion of the project work from 10 months to 16 months. Also enclosed are three copies of the operator's letter requesting the extension of the completion period.

Copies of the amendment have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

W. H. King

Enclosures

RECEIVED
NOV - 5 1954
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

July 19, 1954

Memorandum

To: Hazel Berry, Operating Committee

From: Grace L. Ault, Rare & Misc. Metals Division

Subject: Amendment to contract

Mr. Ching has reviewed and approved Amendment No. 1, dated July 12, 1954, to Contract No. Idm-E638, Docket No. DMEA-3060, Vance Elton Thornburg, d/b/a Thornburg Mining Co.

/s/ Grace L. Ault

Grace L. Ault

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

224 New Customhouse
Denver 2, Colorado

July 12, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3060 (Uranium), Contract IDM-E638, Thornburg Mining Co., Shinarump Group, Grand County, Utah

Enclosed are the original and two copies of Amendment No. 1 to Contract IDM-E638 which has been executed to modify the description of work to be performed under the contract. Also enclosed are three sets of data relevant to the amendment.

Copies of the 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

Encls.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
June 21, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3060, Contract IDM-E638 (Uranium) Thornburg Mining Co., (Shinarump claims), Grand County, Utah--Amendment request

Enclosed are the original and seven copies of a memorandum from R. R. McLellan on the above amendment request. This is prepared in confirmation with your memorandum of June 16, 1954.

The recommendation has my approval.

F. A. Everett, for
W. M. Traver

Enclosures

cc: 0
USGS
IDM-E638
DMEA Chron.

WMT/ici

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
July 18, 1954

Memorandum

To: Chief, Mineral Resources Branch, Mining Division, Region IV

From: Russell R. McLellan

Subject: DMRA 3060, Contract IDM-8638 (Uranium) Thornburg Mining Co., (Shinarump claims), Grand County, Utah--Amendment request

The Thornburg Mining Company, by an undated letter, has requested an amendment to the subject contract to eliminate the proposed raise in the South Drift and to revise the crosscutting and jackhammer drilling. The contract in Stage I authorizes 350 feet of drifting on a lower ore horizon, 25 feet of raising to an upper ore horizon, 120 feet of drifting on the upper horizon, and a total of 400 feet of exploratory jackhammer holes, all in the South Drift. Two unexpected occurrences provide the basis for an amendment to the contract. First, the main South Drift was unintentionally driven in such a manner that instead of following the lower ore horizon, it gradually left the strata, crossed the intermediate beds and entered the upper ore horizon at the target area, thus eliminating any need for a raise to connect the two ore horizons. However, in order to test the unexplored portions of the two horizons along the tunnel line it will be necessary to drill exploratory jackhammer holes upward in the east portion of the drift and downward in the west portion of the drift. A second point to be considered is the fact that check surveys conducted by the company and by the U. S. Geological Survey indicate that the base map provided by the Atomic Energy Commission and used in the contract is erroneous. Stage I for the South Drift authorizes 350 feet of drifting to reach the target area in the vicinity of drill hole 206 (mislabled as 200 on the contract copy). Actually only 291 feet of drifting was required to reach the target area, leaving an excess of 59 feet of drifting. This footage, plus the 25 feet of raising now unnecessary, gives the company an excess footage in the South Drift of 84 feet at a price of $29.60 per foot.

In considering an amendment to revise the exploration in the South Drift, the writer with minor exceptions is in agreement with the proposals submitted by Chew, Finch, and Johnson of the U. S. Geological Survey in their memorandum of May 7, 1954. These proposals are as follows:

"1. No further Stage I drifting in the South Drift.

2. No raise be driven at drill hole DI-206. This raise is now unnecessary because the drift face as of May 1, 1954 is at the elevation originally proposed for the top of the raise.

3. A crosscut be driven in a direction approximately N. 10° W., level, for a maximum distance of 100 feet beginning at the face as of May 1, 1954."

The writer believes that the word "level" should be deleted from the sentence in favor of "along the bedding" or "along the ore horizon" to prevent the drift from leaving the ore horizon as happened previously. The beds dip approximately 5 degrees in the direction of the proposed crosscut.

"4. A crosscut be driven in a direction approximately due south, level, for a maximum distance of 60 feet beginning at the face as of May 1, 1954. It is not expected that either the north or south crosscut will actually intersect any of the drill holes. The recommended directions and distances are compromises based on several maps available. Where the occurrence or ore minerals is spotty as it is in the upper ore horizon, it is felt that a test in the vicinity of a drill hole containing ore is just as adequate as the actual intersection of the hole itself."

The writer believes that "level" also should be deleted from the first sentence as in item 3. The ore horizon will rise approximately 5 degrees in the direction of the proposed crosscut and it will be desirable to follow the ore horizon rather than to drive a level crosscut.

"5. The jackhammer drilling should be done according to the following schedule.

Location of drilling stations is shown on the accompanying map, and all holes are vertically up or down.

Station No.	Direction	Length	Total Footage
1-2	up	25 feet	50 feet
3	up	20	20
	down	5	5
4	up	15	15
	down	10	10
5	up	10	10
	down	15	15

Station No.	Direction	Length	Total Footage
6	up	20 feet	20 feet
	down	15	15
7	up	10	10
	down	15	15
8	up	10	10
	down	25	25
9	up	5	5
	down	25	25
10	up	5	5
	down	25	25
11-18	up	10	80
	down	25	200
	Total footage recommended		560 feet

This drilling will test all three known ore horizons. In addition, the extra footage at stations 6, 8, and 11 through 18 is designed to test the Chinle for 10 feet above the highest ore zone now known. Testing of this higher horizon is in the nature of insurance against missing possible additional mineralized rock. The total drilling recommended in the proposed amendment is 160 feet more than allowed in the original contract. However, approximately $1,776.00 is made available by the elimination of the raise and the unused drift footage under Stage I. It is recommended that a part of the saving be used for additional drilling".

The writer wishes to point out that approximately $2,486.40 is made available by the excess drift footage and by the elimination of the raise rather than $1,776.00 as indicated in the above paragraph quoted from the U. S. Geological Survey memorandum. Item 6 of the U. S. Geological Survey memorandum suggests that a transit survey be made of the area and that the cost of such survey be included under the amendment. The mine superintendent informed the writer that the base map that is submitted each month with the Company progress report is a transit survey by L. J. Coady. If the superintendent is mistaken, the company should prepare a map from a transit survey as soon as possible, however, it is doubtful that the cost of the survey could be included in the contract.

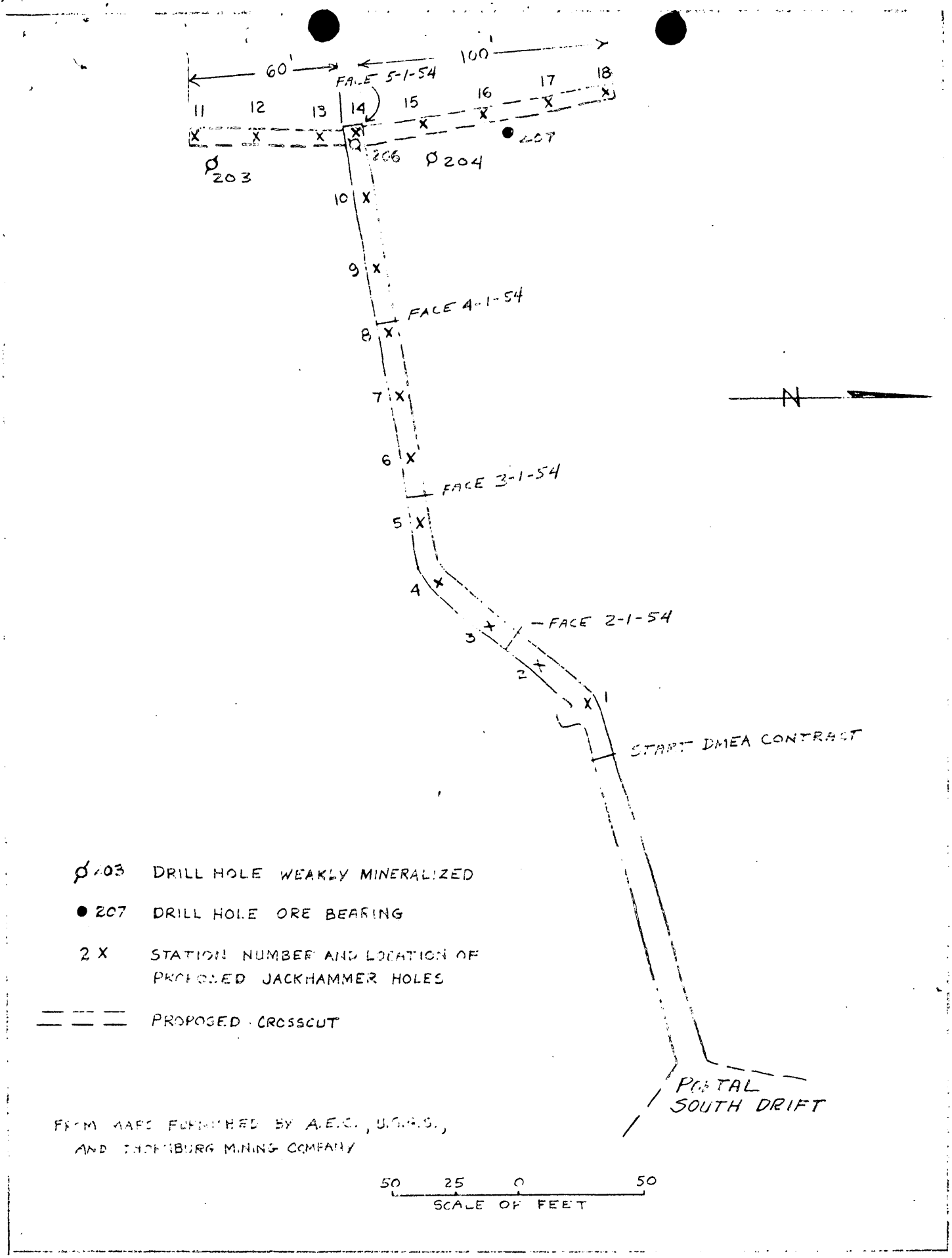
It is recommended that the contract be amended to include the first 5 items listed in this memorandum with consideration given to the suggested minor changes of items 3 and 4.

W. Dave

for Russell R. McLellan

RRM/iei

cc: 7
USGS



RECOMMENDED CROSSCUTTING AND JACKHAMMER EXPLORATION, SOUTH DRIFT, SHINARUMP CLAIMS, THORNBURG MINING CO., GRAND COUNTY, UTAH, DMEA 3060, CONTRACT IDM-E638

THORNBURG MINING COMPANY
160 South Main Street
Grand Junction
Colorado

AIR MAIL

Mr. W. H. King
Executive Officer
Defence Minerals Exploration Administration
224 New Custom House
Denver, Colorado

Dear Mr. King:

Reference is made to Docket No. DMEA-3060, the exploration Project Contract between DMEA and the THORNBURG MINING COMPANY. Please consider this an official request to amend the Contract as follows:-

The amendments requested apply to the South Drift. Reference is made to "Stage 1, paragraph (b)" of the Contract where drill hole "DI 200" is used. Change this notation to DI 206. There is no drill hole number DI 200. Other changes requested in this paragraph make the amended paragraph (b) read:-

"STARTING FROM A POINT IN THE SOUTH ADIT JUST NORTH OF THE MAIN SOUTH MINE WORKINGS, DRIFT APPROXIMATELY 90 FEET IN A SOUTHEASTERLY DIRECTION, THEN TURN THE DRIFT AND CONTINUE FOR A FURTHER 260 FEET TO INTERSECT THE PROJECTION OF DRILL HOLE DI 206. ON COMPLETION OF THIS DRIFT WORK, A TOTAL OF APPROXIMATELY 400 FEET OF SAMPLE DRILLING SHALL BE DONE. THE HOLES SHALL BE SPACED AT 25-FOOT INTERVALS OR AT OTHER INTERVALS ACCEPTABLE TO THE GOVERNMENT ALONG THE DRIFT AND DRIVEN UPWARD AND DOWNWARD. EITHER VERTICAL OR INCLINED AND TO SUCH A DEPTH ACCEPTABLE TO THE GOVERNMENT THAT WILL PROJECT STRATA ABOVE AND BELOW THE DRIFT. THE UNEXPENDED PORTION OF THE 350 FEET (260' PLUS 90') OF DRIFTING AUTHORIZED TO ARRIVE AT PROJECTED POSITION OF DH 206 MAY BE EXPENDED TO EXTEND THE DRIFT IN A WESTERLY DIRECTION TO FURTHER EXPLORE THE MINERALIZATION INDICATED BY DRILL HOLE DI 206. EACH HOLE SHALL BE LOGGED RADIOMETRICALLY BY USE OF A RUBBER HOSE TO PUSH THE PROBE UP THE HOLE. CUTTINGS FROM ALL SAMPLE HOLES DRILLED DURING STAGES 1 AND 11 SHALL BE SAVED FOR RADIOMETRIC OR CHEMICAL TESTING".

Reference is made to "Stage 1, paragraph (c)" of the Contract. It is felt by Government Engineers and Geologists that the 25-foot raise mentioned in the Contract and to be driven near the present face of the South Drift is unnecessary. The Thornburg Mining Company agrees. It is, therefore, requested that paragraph "(c)" of Stage 1 be deleted and the following paragraph substituted.

"(c)"

AT A POINT NEAR THE PROJECTED POSITION OF DRILL HOLE DI206 OR 21 FEET BACK FROM THE PRESENT FACE OF THE SOUTH DRIFT, DRIVE HORIZONTAL OR SLIGHTLY INCLINED CROSS CUTS, NORTHERLY AND SOUTHERLY, A DISTANCE NOT TO EXCEED AN AGGREGATE OF 120 FEET. TO INTERSECT THE AREA CUT BY DRILL HOLES DI 204, DI 207 AND DI 203. THE UNEXPENDED PORTION OF THE 400 FEET OF SAMPLE DRILLING AUTHORIZED UNDER "STAGE 1, PARAGRAPH (b)" OF THE CONTRACT MAY BE EXPENDED IN EXPLORATORY DRILLING UPWARD AND DOWNWARD FROM THE CROSS-CUTS AT LOCATIONS AND TO THE EXTENT ACCEPTABLE TO THE GOVERNMENT".

It is further requested that the effective date of these amendments be made retroactive to May 1, 1954.

Very truly yours

Vance Thornburg

Thornburg Mining Company

Leo J. Coady

Leo J. Coady, Consultant

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

May 10, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3060 (uranium), Contract Idm-E638, Thornburg Mining Company, Grand County, Utah

Enclosed are 11 copies of a memorandum report by R. T. Chew, III, W. I. Finch, and H. S. Johnson covering the above docket.

E. M. Hauchman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLO.

May 7, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region IV

From: R. T. Chew, III, W. I. Finch, and H. S. Johnson, Colorado Plateau District Office

Subject: Docket DMEA 3060 (Uranium), Contract Idm-E638, Thornburg Mining Company, Grand County, Utah

Reference is made to a memorandum by Finch and Johnson, dated April 13, 1954, memoranda by the Executive Officer, dated April 15 and April 28, 1954, and memorandum by R. R. McLellan, U. S. Bureau of Mines, dated April 22, 1954, all relative to work being performed in the south drift under the subject contract.

The drift in question was mapped by Chew and R. D. Sample on April 21, 1954. A map of the wall of the inner part of the drift was made at the same time.

The ore in the Seven Mile area can be divided, vertically into three different zones. The lowest zone occurs in the basal siltstone of the Triassic Chinle formation; the middle zone overlies a limestone conglomerate marker bed about 15 feet above the basal siltstone; the highest ore zone occurs in a siltstone about 25 feet above the basal siltstone. The middle ore zone is the weakest. The beds strike N 15° E. and dip 8° NW.

The portal of the drift is in the lowest ore zone and the first portion of the drift follows this lowest horizon northwest down dip for 125 feet. This portion was not driven under this contract though the remainder of the drift was driven under this contract. The drift then becomes level or nearly so and the remainder of the first section and the southwesterly trending second section tests the lowest horizon. The average dip for the first section of the drift is five degrees. The section with the southwesterly trend is level. The inner section dips about one degree northwest and thus crosses the bedding. The wall map accompanying this memorandum shows where the middle ore zone is crossed. The upper zone had not been reached by the drifting at the time this map was made and there was no anomalous radioactivity at the face.

The limestone conglomerate shown on the wall map underlies the middle ore zone. A scintillometer traverse of the wall was made as part of the mapping and the readings are shown in mr/hr on the map. The readings divided by two give a very rough approximation of the equivalent uranium where the readings were made. Using this approximation, ore-grade material (more than 0.102 U_3O_8) occurs along the upper contact of the limestone conglomerate for about 25 feet in the central portion of the wall. A small pod of ore-grade material also occurs at the bottom of the limestone conglomerate about 30 feet west of the east end of the map. Very little, if any, of the ore-grade material is one foot or more thick. The rest of the rock exposed in the wall is not ore grade, though it is abnormally radioactive. The scintillometer readings verify that an ore zone has been crossed.

It was our original intent that the drift be driven following the lowest ore horizon down dip. Jack-hammer holes were recommended to test the overlying ore horizons. However, Exhibit "A" of the contract does not specifically state that the drift shall follow the lower horizon though it is specifically stated that the jack-hammer holes shall be driven upwards to test the upper ore horizons. The operator has driven his drift to penetrate all three of the ore horizons and to reach drill hole DI-206 at the elevation of the ore as shown in the drill log. This ore is in the upper ore zone. With the drift driven in this manner, the raise at the drill hole is unnecessary and the drill holes to test the other horizons must be revised as some of these horizons are underfoot for part of the length of this drift. Ore discovery by drilling below the drift will be underfoot and some additional drifting will be necessary to recover it.

No adequate map of the Seven Mile area with the drill holes accurately located exists. No map accompanying this memorandum was supplied by the operator, though the wall map thereon was made by Chew and Sample. Base for the plan map was provided the operator by the Atomic Energy Commission. This map does not agree with that made by Finch in his report on the Seven Mile area for the Geological Survey. Chew's map of the drift agrees with that of the operator, but location of the drill holes from data contained in the official AEC report of the drilling does not coincide with the drill holes shown on the operator's map. The operator states that drill hole DI-206 shown on the map has not been found, though his drift is shown as intersecting it.

The operator believes he has complied with the terms of the contract as written and feels that the level drift explores the three possible ore horizons as well if not better than an inclined drift with raise would have done. Although we were originally in favor of the inclined drift, we agree that the level drift, with up-and-down jack-hammer holes as needed, will adequately test the three possible ore horizons. An amendment is in order, however, to eliminate the proposed raise and to revise the specifications for the jack-hammer holes.

We recommend that Exhibit "A" Stage I, paragraphs (b) and (c) of the contract be amended to meet the following requirements:

1. No further Stage I drifting in the south drift.

2. No raise be driven at drill hole DI-206. This raise is now unnecessary because the drift face as of May 1, 1954 (see accompanying map), is at the elevation originally proposed for the top of the raise.

3. A crosscut be driven in a direction approximately N. 10° W., level, for a maximum distance of 100 feet, beginning at the face as of May 1, 1954.

4. A crosscut be driven in a direction approximately due south, level, for a maximum distance of 60 feet beginning at the face as of May 1, 1954. It is not expected that either of these crosscuts will actually intersect any of the drill holes. The recommended directions and distances are compromises based on the several maps available. Where the occurrence of ore minerals is spotty, as it is in the upper ore horizon, it is felt that a test in the vicinity of a drill hole containing ore is just as adequate as the actual intersection of the hole itself.

5. The jack-hammer drilling should be done according to the following schedule. Location of drilling stations is shown on the accompanying map, and all holes are vertically up or down.

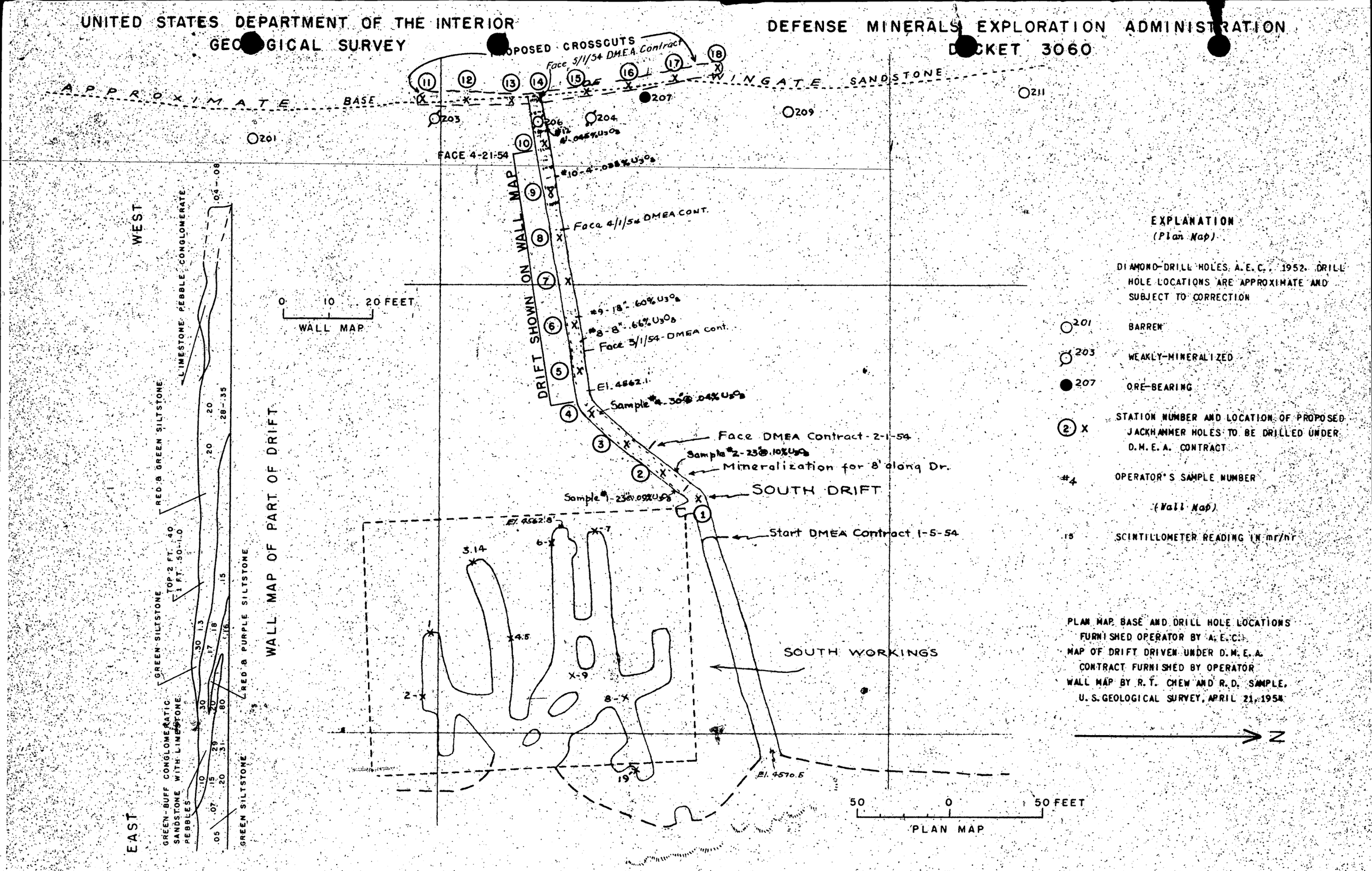
Station No.	Direction	Length	Total Footage
1-2	up	25 feet	50 feet
3	up	20	20
	down	5	5
4	up	15	15
	down	10	10
5	up	10	10
	down	15	15
6	up	20	20
	down	15	15
7	up	10	10
	down	15	15
8	up	10	10
	down	25	25
9	up	5	5
	down	25	25
10	up	5	5
	down	25	25
11-18	up	10	80
	down	25	200
	Total footage recommended		560 feet

This drilling will test all three known ore horizons. In addition, the extra footage at stations 6, 8, and 11 through 18 is designed to test the Chinle for 10 feet above the highest ore zone now known. Testing of this higher horizon is in the nature of insurance against missing possible additional mineralized rock. The total drilling recommended in the proposed amendment is 160 feet more than allowed in the original contract. However, approximately $1,776.00 is made available by the elimination of the raise and the unused drift footage under Stage I. It is recommended that a part of the saving be used for the additional drilling.

6. A transit survey be made of the area covered by this contract so that an accurate map can be made. The survey should include mapping of drill holes, all mine workings, roads and a suitable series of elevations. These data are not now available from a single source and cannot be composed from the several sources because of discrepancies that cannot be resolved. Some of the funds made available from the elimination of the raise and additional drifting can be used for this survey.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
DOCKET 3060



PLAN MAP AND PARTIAL WALL MAP OF DRIFT AT SHINARUMP NO.1 MINE (South drift), GRAND COUNTY, UTAH
DRIVEN UNDER D.M.E.A. CONTRACT Idm-E638 (Uranium)

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN - 4 1954

224 New Customhouse
Denver 2, Colorado

December 30, 1953

REGISTERED

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3060 (Uranium), Contract IDM-E 638, Thornburg Mining Co., Grand County, Utah

Enclosed are the original and two copies of Contract IDM-E 638. Copies of this contract have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

W. H. King

Enclosures

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

DMEA-3060

Murphy
Ellis
Selfridge
[illegible]

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[illegible]t: [illegible]29[illegible]
[illegible]om: [illegible]
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22[illegible], [illegible] 2, [illegible]

[illegible]

[illegible]l.

George C. Selfridge (By [illegible])
[illegible]

FMMurphy/gla/dh
12/8/53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs:H.D.Keiser, Rm. 3641
A.P.Butler, Jr., Rm.3212, GSA
Ellis
Murphy
Confirmation to Region IV

SENT
DEC 9 1953
Clerical Service Section

R.C.S.
12-9-53

Mr. G.C. Selfridge
12-7-53
4:10 P.M.
MBS

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 8 - 1953

BUR MINES DN 235 12-7-53 2-07 PM

CHAIRMAN, OPERATING COMMITTEE, DMEA

REFERENCE DOCKET 3060, CONTRACT IDM-E638, THORNBURG MINING COMPANY. OUR MEMORANDUM OF NOVEMBER 24,1953 RELATIVE TO CHANGE IN EXHIBIT A OF PROPOSED CONTRACT. PLEASE TELETYPE ADVICE RELATIVE TO OUR REQUEST.

W H KING

Denver, Colo.

DEC 8 8 25 AM '53
BUREAU OF MINES
MAIL ROOM
WASHINGTON D.C.

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

DEC - 4 1953

Mr. [illegible] King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3060 (Uranium)
Contract No. Adm-630
Thornburg Mining Company
Grand County, Utah

Dear Mr. King:

Reference is made to your memorandum dated November 24, 1953, requesting permission to rewrite the cost of chemical assays, which is the last item in Exhibit "A" of the subject ore bond contract.

At the time we wrote the contract we were informed that the cost of a uranium chemical assay ranged from $2.00 to $3.00, so used the higher figure. However, we now note that the current price is $5.00. Accordingly, as this contract is drafted on a unit cost basis, we suggest that you rewrite the item as follows:

120 uranium chemical assays @ $5.00 each 3/ $600.00

3/ Includes cost of transportation to and from laboratory.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

Concur:

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

D. M. Larrabee (JHB)
Member, Geological Survey

FMMurphy/db
12-1-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs: H. D. Keiser, Rm. 3641
A. P. Butler, Jr., Rm. 3212, GSA
Ellis
Murphy

Murphy
Ellis
DeKane
Martin
Larrabee
Selfridge
Johnson
Mitchell

12-4-53

11/30/53 gla

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

Defense Minerals Administration
RECEIVED
NOV 27 1953

224 New Customhouse
Denver 2, Colorado

November 24, 1953

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 3060, Contract Idm-E638, Vance Elton Thornburg, Thornburg Mining Company, Grand County, Utah (Uranium)

Reference is made to Exhibit A of Contract Idm-E638, Vance Elton Thornburg. Six copies of the contract signed by the Administrator, DMEA, were transmitted to this office by the Acting Chairman, Operating Committee, for our approval and transmission to the operator for signature.

Exhibit A, title "Estimated Cost of the Project", contains the following:

"200 Uranium chemical assays @ $3.00/ea. 3/ $600.00"

"3/ Includes cost of transportation to and from laboratory."

The current price of a uranium assay is $5.00. We request permission to rewrite the above portion of Exhibit A as follows:

"Uranium chemical assays, 3/ total cost not to exceed $600.00"

"3/ Request for reimbursement must be accompanied by paid invoice."

W. H. King

W. H. King

RECEIVED
NOV 30 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

700

FILE COPY
SURNAME:

Murphy
Ellis
Talbert
Martin
H. Johnson

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

NOV 13 1953

Mr. W. H. King
Executive Officer
DMEA Field Team, Section 15
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. [illegible]-3066 (Original)
Thurburg Mining Company
Shinarump Group, Seven-Mile Area
Iron County, Utah

Dear Mr. King:

Enclosed with attachments are the original and five copies of the captioned proposed contract signed by the Administrator for the Government.

If the terms and conditions of this proposed contract meet with the approval of your office and the applicant, insert in Article 2 the time within which the work shall commence. After the signature of the operator has been obtained, kindly distribute the copies in the usual manner.

If any part of the proposed contract does not have either your approval or that of the operator and cannot be resolved within your delegated authority, the original and all copies of the contract are to be returned to this office with the proposed changes for determination.

The application was for a total amount of $[illegible]. The field team recommended additional work, including hand-held sample drilling and a 25-foot raise with 100 feet of crosscut exploration from the raise, at an estimated total cost of $[illegible]. In the present proposed contract is drafted on a unit cost basis, consideration has been taken of possible salvage value of material, hence the total cost of the contract is estimated at $[illegible].

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee

Enclosures 6

J. H. Hedges
Member, Bureau of Mines

D. M. Larrabee
Member, Geological Survey

Ellis Murphy

M Murphy/db/cls
11/5/53
11/12/53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs. A. F. Butler, Jr., Rm. 3212, DMA
H. J. Keiser, Rm. 3641

R.C.G.
11-13-53

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

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 29 1953

224 New Customhouse
Denver 2, Colorado

October 27, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Thornburg Mining Company, Docket No. DMEA 3060

Enclosed are copies of Amended Notice of Location on the Shinarump No. 1, Shinarump No. 1A, Shinarump No. 3, Shinarump No. 4, the Vance Thornburg, and the Gara No. 1 Mining claims.

The enclosed location notices were submitted to this office by the Thornburg Mining Company for the use of the Washington office in preparing an exploration project contract.

The transmittal letter explains that the North 150' of Shinarump No. 1 claim, as amended, composes Shinarump No. 1 Fraction as appears on the application Docket No. DMEA 3060.

W. H. King
W. H. King

Enclosures

Note: The North 150' of "Shimarump #1" as amended composes "Shimarump #1 Fraction" as appears on c[redacted]pplication - Docket DM.E[redacted]060

AMENDED LOCATION NOTICE

NOTICE IS HEREBY GIVEN, That "This notice is filed pursuant to the provision of S: 1397 (Public Law 250 - 83rd Congress) and for the purpose of obtaining the benefits thereof." Vance Thornburg, d.b.a. Thornburg Mining Co. citizen of the United States, having complied with all the requirements of the Laws of the United States and the State of Utah, relating to mining claims, and with the local laws, customs, rules and regulations of the unorganized Sevenmile Mining District, hereby made and file this Amended Location of the Shimarump No 1 Lode, claiming by right of discovery, location, primal appropriation and possession 1500 by 600 feet, linear and horizontal measurement on this vein or lode of quartz, or other rock in place bearing Copper ; uranium and other valuable minerals, along the course of said vein, with all dips, variations and angles, together with 300 feet in width on each side of the middle of said vein at the surface, and all veins, lodes, ledges, mineral deposits, mineral and surface ground within the line of said claim, 275 feet of said lode running N 70° 35' E and 1225 feet running S 70° 35' W from the Initial Point and Discovery Stake. Said Initial Point and Discovery Stake being situated upon said lode or vein, within the line of said claim in the unorganized Sevenmile Mining District, County of Grand, State of Utah. Said claim being particularly described by actual field notes of survey this 10th day of Sept., 1953, as follows, to wit:

Beginning at the Initial Point and Discovery Stake, at which this Notice is posted, with Magnetic Variation at 15 Degrees 30 Minutes East, thence N 70° 35' E 275 ft. to the east end center stake, thence S 19° 25' E 300 ft. to the S.E. cor. no 1.; thence S 70° 35' W 1500 ft. to the S.W. cor. no 2.; thence N 19° 25' W 300 ft. to the west end center stake; thence N 19° 25' W 300 ft. to the N.W. cor. no 3.; thence N 70° 35' E 1500 ft to the N.E. cor. no 4.; thence S 19° 25' W 300 ft. back to the point of beginning on the east end center stake.

This location and discovery stake is situated S 60° 40' W 1520 ft. N 19° 25' W 300 ft. and S 70° 35' W 275 ft. from the 1/4 cor. of sections 27 and 34, T 24 S, R 20 E, S.L. B+M.

THIS AMENDED LOCATION is made in conformity with the Original Location, made Feb. 8 1948, recorded Feb 14 1948, in Book 9 J, Page 140, of Quartz Claims, in the office of the Recorder of said County, and is made for the purpose of appropriating all ground within the boundaries hereinbefore described. and of more definitely describing the locus and boundaries of said Lode, correcting any irregularities, informalities or errors, and supplying any defects which may have existed in the Original Location, or the record thereof, hereby waiving no rights acquired under and by virtue of said Original Location.

Date of Amended Location, Sept 10, 1953.

Entry No. 213068
Filed Sept 11 1953 2:15 P.M.
Recorded Book 11 Page 188
Fee 1.30
Emma M Walton
Grand County Recorder
Abs. Book

Thornburg Mining Co.
by Garth W. Thornburg

AMENDED LOCATION NOTICE

NOTICE IS HEREBY GIVEN, That This notice is hereby posted pursuant to the provisions of S.L. 1897 (Public Law 250, 52nd Congress) and for the purpose of claiming the rights thereof. Owen Thornburg d.b.a. Thornburg Mining Co.

citizen of the United States, having complied with all the requirements of the Laws of the United States and the State of Utah, relating to mining claims, and with the local laws, customs, rules and regulations of the unorganized Sevenmile Mining District, hereby made and file this Amended Location of the Shinarump No 1 A Lode, claiming by right of discovery, location, primal appropriation and possession 1500 x 600 feet, linear and horizontal measurement on this vein or lode of quartz, or other rock in place bearing copper, uranium and other valuable minerals, along the course of said vein, with all dips, variations and angles, together with 300 feet in width on each side of the middle of said vein at the surface, and all veins, lodes, ledges, mineral deposits, mineral and surface ground within the line of said claim, 1425 feet of said lode running S70° 35' W and 75 feet running N70° 35 E from the Initial Point and Discovery Stake. Said Initial Point and Discovery Stake being situated upon said lode or vein, within the line of said claim in the unorganized Sevenmile Mining District, County of Grand, State of Utah. Said claim being particularly described by actual field notes of survey this 10th day of Sept., 1953, as follows, to wit:

Beginning at the Initial Point and Discovery Stake, at which this Notice is posted, with Magnetic Variation at 15 Degrees 30 Minutes East, thence N 70° 35' E 75 ft. to the east end center stake, thence S 19° 25' E 300 ft. to the S.E. cor. no 1; thence S 70° 35' W 1500 ft. to the S.W. cor. no 2; thence N 19° 25' W 300 ft. to the west end center stake; thence N 19° 25' W 300 ft. to the N.W. cor. no 3; thence N. 70° 35' E 1500 ft. to the N.E. Cor. no 4; thence S 19° 25' E 300 to the east end center stake or point of beginning.

This location or discovery stake is situated S 60° 40' W 1520 ft. N 19° 25' E 900 ft. and S 70° 35' W from the 1/4 cor secs. 27 and 34, T 24 S, R 20 E S.L.B+M.

THIS AMENDED LOCATION is made in conformity with the Original Location, made Feb 8 1948, recorded Feb 14 1948, in Book 95, Page 140, of Quartz Claims, in the office of the Recorder of said County, and is made for the purpose of appropriating all ground within the boundaries hereinbefore described. and of more definitely describing the locus and boundaries of said Lode, correcting any irregularities, informalities or errors, and supplying any defects which may have existed in the Original Location, or the record thereof, hereby waiving no rights acquired under and by virtue of said Original Location.

Date of Amended Location, Sept 10, 1953.

Entry No. 213067
Filed Sept 11 1953 2:10 P.M.
Recorded Book 11 Page 187
Fee 1.30
Emma M Dalton
Grand County Recorder
Abs. Book

Thornburg Mining Co.
by Garth W. Thornburg

AMENDED LOCATION NOTICE

NOTICE IS HEREBY GIVEN, That "This notice is filed pursuant to the provision of S-1397 (Public Law 250, 83rd Congress) and for the purpose of obtaining the benefits thereof" — Vance Thornburg d.b.a. Thornburg Mining Co. citizen of the United States, having complied with all the requirements of the Laws of the United States and the State of Utah, relating to mining claims, and with the local laws, customs, rules and regulations of the unorganized Sevenmile Mining District, hereby made and file this Amended Location of the Shinarump No 3 Lode, claiming by right of discovery, location, primal appropriation and possession 600 by 1500 feet, linear and horizontal measurement on this vein or lode of quartz, or other rock in place bearing Copper, Uranium and other valuable minerals, along the course of said vein, with all dips, variations and angles, together with 300 feet in width on each side of the middle of said vein at the surface, and all veins, lodes, ledges, mineral deposits, mineral and surface ground within the line of said claim, 880 feet of said lode running N 45° 30′ E and 620 feet running S 45° 30′ W from the Initial Point and Discovery Stake. Said Initial Point and Discovery Stake being situated upon said lode or vein, within the line of said claim in the unorganized Sevenmile Mining District, County of Grand, State of Utah. Said claim being particularly described by actual field notes of survey this 10th day of Sept., 1953, as follows, to wit:

Beginning at the Initial Point and Discovery Stake, at which this Notice is posted, with Magnetic Variation at 15 Degrees 30 Minutes East, thence N45°30′E 880 ft. to the east end center stake, thence S44°30′E 300 ft. to the S.E. cor. No 1.; thence S45°30′W 1500 ft. to the S.W. cor. no. 2.; thence N. 44°30′W. 300 ft. to the west end center stake,; thence N. 44°30′W 300 ft. to the N.W. cor. no. 3.; thence N 45°30′E 1500 ft. to the N.E. cor. no. 4.; thence S 44°30′E 300 ft. back to the east end center stake

This location or discovery stake is situated N. 45°30′E 175 ft. and 300 ft. N 44°30′W. from location of Shinarump No 4.

THIS AMENDED LOCATION is made in conformity with the Original Location, made Feb. 26 1949, recorded March 24 1949, in Book 9J, Page 235, of Quartz Claims, in the office of the Recorder of said County, and is made for the purpose of appropriating all ground within the boundaries hereinbefore described. and of more definitely describing the locus and boundaries of said Lode, correcting any irregularities, informalities or errors, and supplying any defects which may have existed in the Original Location, or the record thereof, hereby waiving no rights acquired under and by virtue of said Original Location.

Date of Amended Location, Sept 10, 1953.

Entry No. 213069
Filed Sept 11 1953 2:20 P.M.
Recorded Book 11 Page 189
Fee 1.30
Emma M Dalton
Grand County Recorder
Abs. Book

Thornburg Mining Co.
by Earth W. Thornburg

Entry No. 213164. Filed Sept 25/53 9 a.m.
Book 11 page 264 Fee 1.00
Emma M. Walter, Recorder

AMENDED NOTICE OF LOCATION

STATE OF Utah
County of Grand } ss. **Know All Men By These Presents:**

That Vance Thornburg d.b.a. Thornburg Mining Co.

the undersigned, has this 25th day of September, 1953, amended, located and claimed, and by these presents do amend, locate and claim, by right of discovery and this amended location certificate 1500 x 600 linear feet and horizontal measurement on the Vance Thornburg lode, vein, ledge or deposit, along the vein thereof, with all its dips, angles and variations, as allowed by law, together with 300 feet on the north side, and 300 feet on the south side of the middle of said vein at the surface, so far as can be determined from present developments; and all veins, lodes, ledges or deposits and surface ground within the lines of said claim, 270 feet running N 60° 30' E from center of discovery and 1230 feet running S 60° 30' W from center of discovery said discovery being situate upon said lode, vein, ledge, or deposit, and within the lines of said claim in unorganized Sevenmile (in coal) Mining District, County of Grand and State of Utah, described by metes and bounds as follows, to-wit:

Beginning at ~~Corner No. 1~~ This location and discovery N 60° 30' E 270 ft. to the east end center stake, thence S 50° 00' E 300 ft. to the S.E. cor. no 1, Thence S 60° 30' W 1500 ft. to the S.W. cor. no 2, thence N 50° 00' W 300 ft. to the west end center stake, thence N 50° 00' W 300 ft. to the N.W. cor. no 3., thence N 60° 30 E 1500 ft. to the N.W. cor. no 4, thence S 50° 00' E 300 ft. to the east end center stake or place of beginning.

This location and discovery is situated N 44° 30' W 50 ft and S 60° 30' W from the N.W. corner of Shinarump No 3 claim.

This being the same lode originally located on the 1st day of July, 1951, and recorded on the 31st day of July, 1951, in Book 9K, Page 171, in the office of the Recorder of Grand County, this further and amended certificate of location is made without waiver of any previously acquired rights, but for the purpose of correcting any errors in the original location, description or record, or validity.*

Said lode was discovered the 1st day of July, A. D. 1951

ATTEST: Garth W. Thornburg

Date of Posting Amended Notice of Location, Sept 25, A. D. 1953

Date of Recording Amended Notice of Location, ..., A. D. 19.....

Thornburg Mining Co. (Seal)
by (Seal)
Garth W. Thornburg (Seal)
(Seal)
(Seal)
(Seal)

*This notice is posted and filed pursuant to the provisions of Public Law 250—83rd Congress, Chapter 405—1st Session, S. 1397, and for the purpose of obtaining the benefits thereof.

AMENDED LOCATION NOTICE

NOTICE IS HEREBY GIVEN, That "This notice is filed pursuant to the provision of S-1397 (Public Law 250, 83rd Congress) and for the purpose of obtaining the benefits thereof". - Vance Thornburg, d.b.a. Thornburg Mining Co. citizen of the United States, having complied with all the requirements of the Laws of the United States and the State of Utah, relating to mining claims, and with the local laws, customs, rules and regulations of the unorganized Sevenmile Mining District, hereby made and file this Amended Location of the Sara No1. Lode, claiming by right of discovery, location, primal appropriation and possession 600 by 1500 feet, linear and horizontal measurement on this vein or lode of quartz, or other rock in place bearing Vanadium, Copper, Uranium and other valuable minerals, along the course of said vein, with all dips, variations and angles, together with 300 feet in width on each side of the middle of said vein at the surface, and all veins, lodes, ledges, mineral deposits, mineral and surface ground within the line of said claim, 1460 feet of said lode running southerly and 40 feet running northerly from the Initial Point and Discovery Stake. Said Initial Point and Discovery Stake being situated upon said lode or vein, within the line of said claim in the unorganized Sevenmile Mining District, County of Grand, State of Utah. Said claim being particularly described ~~by actual field notes of survey~~ this 10th day of September, 1953, as follows, to wit:

Beginning at the Initial Point and Discovery Stake, at which this Notice is posted, with Magnetic Variation at Degrees Minutes East, thence northerly 40 feet to the north end center stake, thence 300 feet easterly to N.E. corner No1.; thence 1500 feet southerly to the S.E. corner No2.; Thence 300 feet westerly to the south end center stake; thence 300 feet westerly to the S.W. corner No3.; thence 1500 feet northerly to the N.W. corner No 4; thence 300 feet easterly to the north end center stake.

This claim is located west of the claims Shinarump No 1A and Shinarump No 4 and is contiguous with said claims

THIS AMENDED LOCATION is made in conformity with the Original Location, made Sept. 10 1951, recorded Sept. 10 1951, in Book 9 K, Page 272, of Quartz Claims, in the office of the Recorder of said County, and is made for the purpose of appropriating all ground within the boundaries hereinbefore described. and of more definitely describing the locus and boundaries of said Lode, correcting any irregularities, informalities or errors, and supplying any defects which may have existed in the Original Location, or the record thereof, hereby waiving no rights acquired under and by virtue of said Original Location.

Date of Amended Location, Sept. 10, 1953.

Entry No. 213070
Filed Sept 11 1953 at 2:25 P.M.
Recorded Book 11 Page 190
Fee 1.30
Emma M Dalton
Grand County Recorder
Abs. Book

Thornburg Mining Co.
by. Garth W. Thornburg

Entry No. 213479 Oct 9, 1953
Bk 11 page 548
Fee 1.00 Emma M. Dalton

AMENDED NOTICE OF LOCATION

STATE OF Utah
County of Grand } ss.

Know All Men By These Presents:

That Vance Thornburg & Co. Thornburg Mining Co.

the undersigned, has this 9th day of October, 1953, amended, located and claimed, and by these presents do amend, locate and claim, by right of discovery and this amended location certificate 1500 by 600 linear feet and horizontal measurement on the Shinarump No 1 lode, vein, ledge or deposit, along the vein thereof, with all its dips, angles and variations, as allowed by law, together with 300 feet on the northwest side, and 300 feet on the southwest side of the middle of said vein at the surface, so far as can be determined from present developments; and all veins, lodes, ledges or deposits and surface ground within the lines of said claim, 115 feet running N 70° 35' E from center of discovery and 1385 feet running S 70° 35' W from center of discovery said discovery being situate upon said lode, vein, ledge, or deposit, and within the lines of said claim in unorganized Seamside (Moab) Mining District, County of Grand and State of Utah, described by metes and bounds as follows, to-wit:

Beginning at ~~Corner No. 1~~ this discovery and location stake, thence N 70° 35' E. 115 ft. to the east end center stake, thence S 19° 25' E. 300 ft. to the S.E. cor. no 1, thence S 70° 35' W 1500 ft. to the S.W. cor. no 2, thence N. 19° 25' W 300 ft. to the west end center stake, thence N 19° 25' W 300 ft. to the N.W. cor. no 3, thence N 70° 35' E. 1500 ft. to the N.E. cor. no 4, thence S 19° 25' E. 300 ft. back to the east end center stake.

This location or discovery stake is situated 300 ft. N 19° 25' W from the N.E. cor no 4 of the Shinarump No 1A mining claim.

This being the same lode originally located on the 20th day of July, 1949, and recorded on the 20th day of Aug., 1949, in Book 9J, Page 310, in the office of the Recorder of Grand County, this further and amended certificate of location is made without waiver of any previously acquired rights, but for the purpose of correcting any errors in the original location, description or record, or validity.*

Said lode was discovered the 20th day of July, A. D. 1949

ATTEST: Garth W. Thornburg

Date of Posting Amended Notice of Location, ..., A. D. 19.....

Date of Recording Amended Notice of Location, ..., A. D. 19.....

Thornburg Mining Co. (Seal)
by (Seal)
Garth W. Thornburg (Seal)
(Seal)
(Seal)
(Seal)

*This notice is posted and filed pursuant to the provisions of Public Law 250—83rd Congress, Chapter 405—1st Session, S. 1397, and for the purpose of obtaining the benefits thereof.

10/29/53 gla

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 29 1953

THORNBURG MINING COMPANY

~~JOB WORDEN BUILDING~~
U. S. Bank Building

GRAND JUNCTION, COLO.

October 26th, 1953

Mr. Ernest Wm. Ellis, Chief
Rare & Misc. Metals Division
U. S. Department of the Interior
Defense Minerals Exploration Admn.
Washing 25, D. C.

Dear Sir:

Due to the absence of Mr. Thornburg I will endeavor to answer your letter of October 7th.

Relative to your Docket No. DMEA-3060 (Uranium), Shinarump Group, Seven-Mile Area, Grand County, Utah, please be advised that all claims involved in said application which are in conflict with gas and oil leases have been cleared by our compliance with the provisions under Public Law 250, 83rd Congress.

Photo copies of Amended Locations recordings (Public Law 250) have been mailed to the office of Mr. W. H. King, Denver, Colorado. This action, to the best of our knowledge, should supersede the necessity of the validating lease with the Atomic Energy Commission.

We appreciate your suggestion concerning the inclusion of Corral No. 1 claim but due to some litigation concerning title we are not in position to authorize it to be included at this time. We hope to be in positon, if deemed necessary, to include it by amendment at a later date. However, as we see the program, in reality this claim will not be benefited by the exploration work.

Very truly yours,

J. T. Tunnell, Office Mgr.

JTT/g

cc: Mr. W. H. King
222 New Customhouse
Denver 2, Colorado.

Defense Min
OCT 29 1953

U. S. Bank Building

October 26th, 1953

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

Subject: Docket Number DMEA-3060
Re: Exploration Assistance
Shinarump Group, etc.

Dear Sir:

We are enclosing herewith photo copies of the claims involved in the above stated DMEA. As you will note these amended locations are in compliance with the provisions under Public Law 250, 83rd Congress.

As a futher explanation please be advised that the North 150' of Shinarump #1 claim, as amended, composes Shinarump #1 Fraction as appears on our application Docket DMEA-3060.

Very truly yours,

Thornburg Mining Company

By
J. T. Tunnell, Office Mgr.

JTT/g

cc: Ernest Wm. Ellis, Chief
Rare & Misc. Metals Division
U. S. Dept. of the Interior
DMEA, Washington 25, D. C.

10/16/53 gla

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

October 15, 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, DMEA Docket 3060, Thornburg Mining Company, Shinarump Group, Grand County, Utah.

I have reviewed the subject report and discussed it with Joseph O. Hosted, representative of the Atomic Energy Commission.

I concur with the Field Team in its recommendation that exploration aid in the amount of $42,238.00 (Government participation $38,014.20) be approved.

The report has been forwarded to the Chief, Minerals Division, Bureau of Mines, in accord with the routing slip attached thereto.

H. D. Keiser

H. D. Keiser

10/14/53 gla

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. Wm. Ellis, DMEA Member, Uranium Commodity Committee

DATE: October 12, 1953

Defense Minerals Administration
RECEIVED
OCT 16 1953

FROM : Arthur P. Butler, Jr., USGS Member, Uranium Commodity Committee

SUBJECT: Field Team Report, DMEA Docket 3060 (Uranium), Thornburg Mining Company, Grand Junction, Colorado, applicant; Shinarump Group of Claims Seven-Mile Area, Grand County, Utah

The Field Team Report covering proposed exploration at the property identified in the subject has been reviewed.

Proposal and Field Team Recommendations

As a result of examination of the Shinarump Group the Field Team has recommended exploration in two stages to search for additional ore at or near the base of the Chinle as follows:

Stage 1. From North Workings drift southerly for 275 feet, cross cut southeasterly for 100 feet, and drill 225 feet of jackhammer hole in 15 feet holes from bottom of drift to explore for possible ore in underlying horizon.

From South Workings drift westerly for 350 feet, raise 25 feet to intersect overlying ore-bearing stratum, cross cut 60 feet north and south from the raise, and drill 400 feet of jackhammer hole upwards for 25 feet from main drift to explore overlying ore-bearing stratum.

Stage 2. Extend North Workings main drift an additional 225 feet if heading is in mineralized rock; extend South Workings main drift an additional 250 feet if heading is in mineralized rock; and do supplementary jackhammer drilling in both extensions, as in Stage 1.

In the event that one of the extensions were not warranted by results in Stage 1, 100 feet of exploratory drift would be driven westerly from Prospect No. 4.

A representative of the exploration staff, Grand Junction Operations Office, AEC, accompanied the examining team and concurs with the recommendation.

Comment

Examination of the property by the Field Team has shown that uranium ore-bearing rock occurs at two stratigraphic levels separated by 15 to 25 feet in the lower 30 feet of the Chinle formation. Uraninite is the principal uranium mineral that has been recognized.

Ore of the lower stratigraphic level, has been mined from the South Workings and consists of a very fine-grained uranium mineral in siltstone. Within the limits of mineralized rock, ore-grade rock is rather uniformly distributed. Ore of the upper level consists of grains and masses of uraninite, forming high-grade concentrations irregularly distributed in thinly bedded siltstone and discontinuous lenses of limestone-pebble conglomerate. Locally the masses of uranium minerals are sufficiently concentrated to permit mining the whole layer as ore.

Ore bodies on the property have produced about 1600 tons of ore containing 0.40 percent of U_3O_8. Drilling by the Atomic Energy Commission suggests that a few thousand tons of additional ore are present. Further exploration by drilling is not feasible because of rugged terrain and consequent depth of hole that would be required.

Although the plan of exploration as summarized above and set forth in more detail in the report appears logical, and warranted by evidence suggesting the possible presence of possible ore bodies of undefined size, the basis for deciding on the suitability of Stage 2 work at either locality is not entirely clear to the reviewer. In the vicinity of the South Workings, the upper level is to be explored by a raise and cross cuts, but authorization for Stage 2 is recommended only if the lower level heading is in mineralized rock. If it is barren but the upper level is promising, it would seem that the additional 250 feet of Stage 2 drifting might with good reason be allowed for exploring the upper level instead of the lower level. Similarly it seems to me that Stage 2 work in the vicinity of the North Workings might be justifiable if either the heading of the southeasterly cross cut or that of the main drift were favorable and not be contingent only upon the favorableness of the main drift face at completion of Stage 1. This alternative was discussed orally with R. P. Fischer and he had no serious objection to such modification of the plan.

Recommendation

I concur with the general plan of exploration proposed by the Field Team and their recommendation that Government assistance be granted to the extent of the Government's proportionate share of the total cost of $42,238.00. I suggest, however, subject to final approval by the Field Team, that favorable indications on either level of the South Workings and either the cross cut or main heading of the North Workings be allowed as the bases for warranting Stage 2 work.

Arthur P. Butler, Jr.

Copies to: E. Wm. Ellis (2)

FILE COPY 700
SURNAME:

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

OCT - 7 1953

Murphy
Ellis
Kestman

Mr. Vance Elton Thornburg, d/b/a
Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado

Re: Docket No. DMEA-3060 (Uranium)
Shinarump Group
Seven-Mile Area
Grand County, Utah

Dear Mr. Thornburg:

We have been advised that some of the mining claims mentioned in the above-docketed application are in conflict with an oil and gas lease, but that you have applied for a validating lease which the Atomic Energy Commission has processed and forwarded to you for signature. A signed copy of this validating lease should be forwarded to this office.

In the opinion of our Field Team, the Corral No. 1 claim, owned by your company, and which is situated just north of the Shinarump No. 3 claim, may be benefited by the proposed exploration work. Will you kindly authorize this office to include this claim along with the others mentioned in your application as subject to royalty payment, giving location and recording data of the claim? If your title to the Corral No. 1 claim is not clear, we will not hold up processing your application to include it at this time, as it could be included later by an amendment to the proposed contract.

When we have received the above requested data, we will continue with the processing of your application.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Chief
Rare & Misc. Metals Division

FMMurphy/gla
10-6-53
cc to: Adm. Reading File
Docket
Messrs. H. D. Keiser, Rm.3641
A. F.Butler, Jr., Rm. 3212, GSA
Ellis
Murphy
DMEA Field Team, Region IV (2)

Estimated Cost of Project

1345 feet of drifting, crosscutting, and raising @ 29.60 [1]/ft (rounded to) $39,810.00

1500 feet Jackhammer or stoper testholes @ $1.00 [2]/ft. 1500.00

200 Uranium chemical assays @ $3.00 each. [3] 600.00

$41,910.00

Government Participation at 20% (rounded to) $7,720.00

1) Includes sampling and roof bolting or timbering where necessary.

2) Includes [and] radioactive probing, collecting samples, and logging holes.

3) Includes [and] prospecting to firm delivery

RECEIVED
NOV 10 1953
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

MF-200 (A)
(February 1952)

DOCKET NO. DMEA 3060

COMMODITY Uranium

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

EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this _____ day of _____, 195__, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Vance Elton Thornburg, dba Thornburg Mining Company
U.S. Bank Building
Grand Junction, Colorado.

hereinafter called the "Operator," as follows: [illegible]

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

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Utah, Seven Mile Area, County of Grand, described as ~~follows~~:[3] set forth in Annex I.

the Operator represents and undertakes:[4]

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

None

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

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

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

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

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay 90 percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $38,010.00 which is 90 percent of $42,233.00 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 check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 9. *Changes and added provisions* _____

_____

_____

_____

_____

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

_____
(Operator)

By _____

By _____

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

_____ [CORPORATE SEAL]

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

EXPLORATION PROJECT CONTRACT
THORNBURG MINING COMPANY
DOCKET NO. DMEA-3060

ANNEX I

The land referred to in Article 2 of the contract form consists of six (6) unpatented mining claims which are recorded in the office of the County Recorder, Grand County, Utah:

Claim		Book No.	Page No.
Shinarump No. 1	(Amended location)	9J	140
Shinarump No. 1 A.	" "	9J	140
Shinarump No. 3	" "	9J	235
Shinarump No. 4	" "	9J	310
Vance Thornburg	" "	9K	171
Gara No 1. (Gara Kristen	" "	9K	272

The above claims are shown on the map entitled, "Claim Map Seven Mile Area Claims, Thornburg Mining Co." showing Proposed Exploration X-cuts which is attached hereto and made a part hereof.

Re: Docket No. DMEA-3060 (Uranium)

EXHIBIT "A"

Description of the Work:

The object of this project is the discovery of uranium ore on two horizons in the Chinle member of the Morrison formation.

The work shall be performed in two stages, the second, dependent on results obtained in the first stage, shall be subject to prior Government approval. The work to be done during each stage is indicated on the attached plan map "Figure 2" and described as follows:

STAGE I - a) From a given point in the present north mine workings, drift 275 feet southward to the vicinity of drill hole DI 221 and then continue 100 feet in a southeasterly direction to the vicinity of drill holes DI 220 and DI 222. Along the 375 feet of drift at intervals of 25 feet, sample holes 15 feet in length shall be drilled downward. These holes shall be probed with radio-metric sampling equipment. Logs shall be kept noting each hole location, the thickness of pertinent strata, color of cuttings, and amount of radio-activity of the various strata encountered.

b) Starting from a point in the short adit just north of the main south mine workings, drift approximately 90 feet in a southwesterly direction, then turn the drift and continue for a further 260 feet to intersect the projection of drill hole DI 200. On completion of this driftwork, a total of approximately 400 feet of sample drilling shall be done. The holes shall be spaced at 25-feet intervals along the drift and driven upward either vertical or inclined and to such a depth that they will prospect

strata for 25 feet vertically above the back of the drift. Each hole shall be logged radiometrically by use of a rubber hose to push the probe up the hole. Cuttings from all sample holes drilled during Stages I and II shall be saved for radiometric or chemical testing.

c) At the point where drift (b) intersects the projection of drift (b) above, intersects the projection of drill hole DI 200, a vertical or slightly inclined raise shall be driven a distance of approximately 25 feet. From this raise crosscuts shall be driven approximately a combined total of 120 feet, northward to intersect drill holes DI 204 and DI 207, and southward to drill hole DI 203.

STAGE II - shall consist of extending drift (a) in Stage I, a further 225 feet in a southerly direction and drift (b) in Stage I, a further 250 feet in a westerly direction. In the event that either the south or west drift work, or both, as outlined for this stage is not approved, then with Government approval 100 feet of drifting in a westerly direction from Prospect No. 4 (shown on maps) and/or further crosscutting or drifting, from the raise, may be done in lieu of this work. In Stage II sample drill holes from the extended drifts shall be drilled and logged in the same manner as outlined in Stage I.

All drifts and crosscuts mentioned in this contract, shall be 5' x 7' in crossection, in clear of timber, and the raise a minimum of 3' x 6' in cross-section clear of timber.

One full-time Superintendent and [redacted] be employed to direct the work outlined under this contract, The Consulting

Engineer who shall devote a minimum of four (4) days per month to this project.

The Superintendent, the Consulting Engineer, the extent and method of sampling, the radiometric testing, the laboratory making the assays, and the starting point and the direction of drifts, crosscuts and raises, are all subject to prior Government approval.

Estimated Cost of Project

1,345 feet of drifting, crosscutting and raising @ $31.40 per foot 1/	$ 42,233.00
Government participation at 90% (rounded to)	$ 38,010.00 ~~[illegible]~~

1/ includes cost of underground exploratory jackhammer drill holes, sampling, assaying and radiometric test work.

Drilling

0
275
100
90
260
250
1250
2250
2500
13475

10/2/53 gla

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

224 New Customhouse
Denver 2, Colorado

September 25, 1953.

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Report of Examination, DMEA Docket No. 3060 (Uranium), Thornburg Mining Company, Shinarump Group, Grand County, Utah.

Enclosed are the original and three copies of the report pertaining to the above application.

We recommend that a contract be entered into with the subject applicant in accordance with the enclosed report provided the applicant submits copies of validating oil and gas leases AT (05-1) - OG 16 and AT (05-1) - OG 67, if he has not already sent them to you.

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

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

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
10-5-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado
September 18, 1953

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Mineral Resources Branch, Mining Division, Region IV

Subject: DMEA 3060, Thornburg Mining Company (Uranium) Shinarump group, Grand County, Utah

Submitted herewith are the original and ten copies of the "Summary, Conclusions, and Recommendations" by R. P. Fischer and W. I. Finch, Geological Survey, and Russell R. McLellan, Bureau of Mines, and of McLellan's engineering report on the above docket.

McLellan concludes there is a fairly good chance of the discovery of mineable ore bodies by exploratory drifting, slightly revised from the program requested by the applicants with their approval. Recommendations include drifting from underground mine workings totaling 1,100 feet with 220 feet of crosscutting, a short 25-foot raise, and 1,075 feet of jackhammer drilling all to be done after a preliminary survey is made to establish definite locations of Atomic Energy Commission drill holes with respect to the mine workings. The work is to be done in two separate locations and is set up in two phases for each. The second phase in both instances will require prior authorization by Defense Minerals Exploration Administration representatives. The total over-all cost is estimated as $42,238.00, and Government participation will be $38,014.20.

I approve the conclusions and recommendations.

Dick Fischer in his transmittal of the geologic report mentions three problems concerning the property which we presume will be resolved at the Regional level.

Dick transmitted the brochures on both DMEA 3060 and DMEA 2591 to this office to facilitate preparation of the engineering reports and requested that we, in turn, forward them to you. They are enclosed also and I believe you have MF-103 to accompany DMEA 3060.

One copy of the geologic report with transmittal memorandum, Fischer to Koschmann, is enclosed also.

W. M. Traver

W. M. Traver

enclosures

WMT/kp

cc 10
DMEA 3060
DMEA Chron

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

August 31, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3060, Thornburg Mining Company, Shinarump group of claims, Grand County, Utah

Enclosed are 11 copies of a geologic report by W. I. Finch and R. P. Fischer of the U. S. Geological Survey covering the above docket.

It has been recommended that DMEA prepare a contract for exploration.

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (11)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 360
GRAND JUNCTION, COLORADO

August 28, 1953

gch 11/6/53

Memorandum

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

From: R. P. Fischer
Colorado Plateau District Office

Subject: DMEA 3060, Thornburg Mining Co., Shinarump group of claims, Grand County, Utah

Transmitted herewith are ~~ten~~ 11 copies of a geologic report on the Shinarump group of claims, Seven-mile area, Grand County, Utah. The Thornburg Mining Co., owner has applied (DMEA 3060) for assistance in exploring for uranium. They propose to drive two drifts, each 600 ft. long, at an estimated total cost of $37,210.00.

The attached report was prepared by W. I. Finch and myself, and it is based on a field examination made jointly on July 24 with R. R. McLellan, Bureau of Mines, E. V. Reinhardt, AEC, and Vance and Garth Thornburg, the applicants.

Because there appears to be a reasonable chance of finding minable ore by exploratory drifting, it is recommended that DMEA prepare a contract for exploration. A general plan of exploration is suggested. It consists of a maximum of 1,200 feet of drifting and cross-cutting, one short raise, and several hundred feet of exploratory jackhammer drilling, and is planned in two stages. Details of the plan can be prepared by McLellan after consideration of some engineering problems presented in this report. The general plan of work suggested is acceptable to the applicant. E. V. Reinhardt, AEC, concurs with this recommendation.

Three problems regarding the applicants' property have been encountered. None of them appear to affect seriously the exploration work proposed, and for that reason no attempt has been made to resolve completely these problems, but attention is called to them on the chance that the Defense Minerals Exploration Administration may wish to resolve these before executing a contract.

Reviewed by
DMEA OPERATING COMMITTEE

10-5-53
(date)

1) Ground north of the Shinarump group of claims is covered by another group of claims in which the applicant holds some interest, although the title is, apparently, not clearly established. One of these claims, the Corral No. 1, has yielded a small production, but is idle at the present time because of the question of property ownership. The status of these claims with respect to a lien placed against the property in the event of a discovery resulting from DMEA exploration perhaps merits consideration.

2) The claim boundaries shown on the map accompanying the applicant's brochure are similar to, but not identical with, claim maps in AEC files. Actually the AEC map showing the results of exploration differs in detail from the AEC maps accompanying the AEC validating the oil and gas leases.

3) The applicant's brochure states that part of the Shinarump group of claims is covered by the validating oil and gas lease AT (05-1)-OG 16, and the other parts of the claim are clear of conflict. The lack of conflict is, apparently, in error and was evidently discovered after the application was submitted, as the Thornburg Mining Company has applied for another validating oil and gas lease AT (05-1)-OG 67. This lease was processed by AEC and sent to the applicant for signature, but the applicant has not returned the completed lease contract. Thus part of the claims still appear to be in conflict with an oil and gas lease. This office will advise the applicant of the apparent conflict. The area of the lease covers part of the ground in which exploration is planned.

R. P. Fischer

R. P. Fischer
Acting District Supervisor

Enclosures ~~10~~ 11

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

GCL
11/6/53

DMEA 3060, Thornburg Mining Company

Shinarump Group

Grand County, Utah

Uranium

R. P. Fischer, Geologist
Geological Survey

W. I. Finch, Geologist
Geological Survey

R. R. McLellan, Mining Engineer
Bureau of Mines

September 18, 1953

DMEA 3060

THORNBURG MINING COMPANY
SHINARUMP GROUP
GRAND COUNTY, UTAH

Summary, Conclusions, and Recommendations

By R. P. Fischer
Geologist
Geological Survey

W. I. Finch
Geologist
Geological Survey

and

R. R. McLellan
Mining Engineer
Bureau of Mines

DMEA 3060

THORNBURG MINING COMPANY
SHINARUMP GROUP
GRAND COUNTY, UTAH

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By R. P. Fischer, W. I. Finch, and R. R. McLellan

The Thornburg Mining Company of Grand Junction, Colo., has applied to the Defense Minerals Exploration Administration for assistance in exploring for uranium on the Shinarump group of claims, Seven-mile area, Grand County, Utah. The company proposed to drive two exploratory drifts, each 600 feet long in the ore-bearing base of the Chinle formation. The total cost of the work was estimated by the applicants as $37,210.00.

On the basis of a field examination by the writers, plus information obtained from detailed studies by W. I. Finch and from a report of Atomic Energy Commission diamond drilling, it is concluded that there is a reasonable chance of finding one or more uranium ore bodies of mineable grade and thickness on the Shinarump group of claims. Because of the habits of the deposits, and the terrain in the area, exploratory drifting is believed to be the most practicable means of exploration.

In order to fully utilize the Atomic Energy Commission drilling data, a slight modification of the applicants' program is suggested. The recommended revised program includes about 1,100 feet of drifting, 220 feet of crosscutting, 25 feet of raising, and 1,075 feet of underground exploratory jackhammer holes. The crosscutting and drilling

are acceptable to the applicants. The work is planned in two stages for the two separate mine workings and can be completed in approximately 7 months' time. The total cost is estimated to be $42,238.00, Government participation 90 percent or $38,014.20.

UNITED STATES DEPARTMENT OF THE INTERIOR

DOUGLAS MCKAY, SECRETARY

11/6/53

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM

REGION IV

DMEA 3060 (Uranium)

Shinarump Group of claims, Seven-mile area,

Grand County, Utah

Geologic Report

By

W. I. Finch and R. P. Fischer, geologists,
U. S. Geological Survey

July 1953

DMEA DOCKET 3060 (Uranium)

SHINARUMP GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH

INTRODUCTION AND SUMMARY

The Thornburg Mining Company, owner of the Shinarump Group of claims, Seven-mile area, Grand County, Utah has applied (Docket 3060) to the Defense Minerals Exploration Administration for assistance in exploring for uranium. The claims are about 10 miles northwest of Moab and approximately one-half mile west of highway U. S. 160 (fig. 1).

The applicants' propose to drive two drifts, each 600 ft. long. The total cost for this work is estimated by the applicants to be $37,210.00.

An examination of these claims was made by the writers and by R. R. McLellan, U. S. Bureau of Mines; E. V. Reinhardt, U. S. Atomic Energy Commission; and Vance and Garth Thornburg, the applicants, on July 24. This report is based on this examination, plus information obtained from detailed studies by the senior author and a draft of a report prepared by R. F. Droullard, U. S. Atomic Energy Commission, on the results of AEC drilling on these claims.

Because there appears to be a reasonable chance of finding mineable ore by exploratory drifting on these claims, it is recommended that DMEA prepare a contract for exploration with the Thornburg Mining Company. A maximum of about 1,200 ft. of drifting, including some cross-cutting, plus one short raise and several hundred feet of exploratory jackhammer drilling, is suggested. The work is planned in two stages. The general plan of work suggested is acceptable to the applicant. E. V. Reinhardt, AEC, concurs with this recommendation.

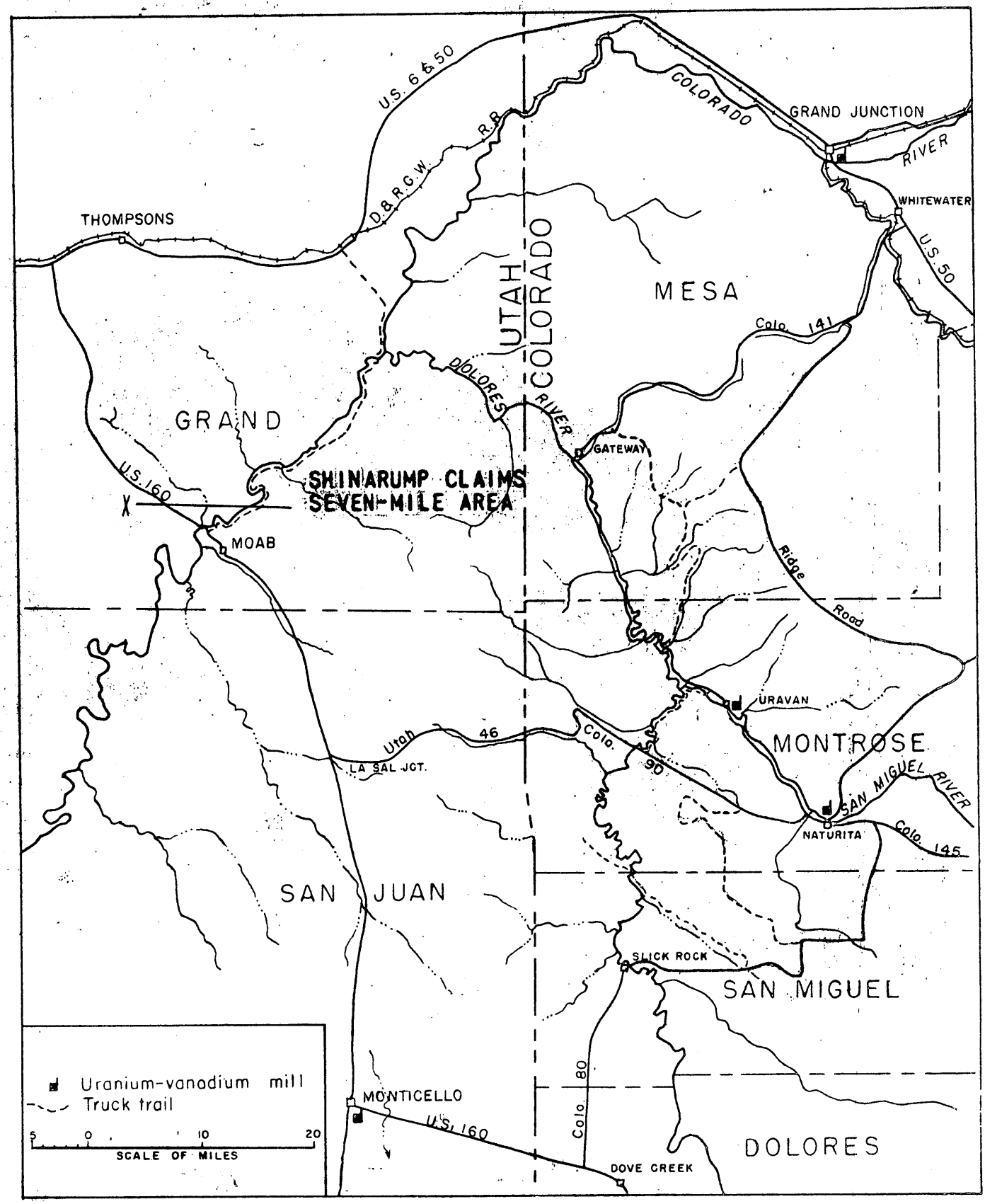

Figure 1. INDEX MAP OF PART OF THE COLORADO PLATEAU SHOWING THE APPROXIMATE LOCATION OF THE SHINARUMP CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH

APPLICATION AND PROPERTY

The application submitted by the Thornburg Mining Company is almost identical with an application (Docket 2591) submitted by the Excalibur Uranium Corporation May 30, 1952, although cost estimates are somewhat different. The DMEA field team recommended that the Excalibur application be held until the results of diamond-drill exploration, planned by the Atomic Energy Commission, could be studied. Before the AEC exploration was completed, the Excalibur Company withdrew the application.

The present application (Docket 3060) is identical in plan with the earlier application and does not include information regarding the results of AEC exploration, nor does it show the advancement of mine headings made during the past year. Because of the results of the AEC exploration, and the additional mining that has been done during the past year, the applicants' proposal cannot be accepted without modification. The plan recommended herein is similar to that proposed by the applicant, however, and is planned to test essentially the same ground.

GEOLOGY

Rocks exposed in the area of the Shinarump group of claims consist of sedimentary beds of Triassic and Jurassic ages. The known uranium deposits are in the basal part of the Traissic Chinle formation. The Chinle lies on the Moenkopi formation and is overlain by the Wingate sandstone.

The Chinle formation crops out in a steep slope and the Wingate forms a vertical cliff. Because of the topographic development of the area, it is difficult and costly to prepare drill-hole sites along the Chinle slope, and drilling behind the Wingate cliff would be very deep. The drilling done by AEC (fig. 2) was done from a bulldozer road cut at the base of the Wingate cliff.

Several hundred feet east of the Shinarump group of claims the Morrison formation is exposed at the surface on the down-thrown site of a fault having a displacement of more than 1,000 ft. West of the fault the beds dip about 8° in a westerly direction, whereas, east of the fault the beds are essentially flat lying. Although some geologist consider the fault as being the feeding channel that introduced the uranium-bearing solutions to the Chinle, there is no obvious relation between the localization of ore bodies and structures resulting from regional deformation, and the proposed exploration is not guided by structural features.

The Chinle formation is about 250 to 300 ft. thick. It consists of siltstone, shale, and sandstone, with some lenticular beds of limestone-pebble conglomerate. The upper half of the Chinle is dominantly red and the lower half is partly gray and partly red. Remnants of plant fossils are scattered throughout the lower part of the formation. These consist of logs of small fragments of wood, some of which are silicified and some are carbonized. Some of the woody material, especially that which is carbonized, is richly replaced by uranium minerals.

Although radioactivity is reported in places in the lower 150 ft. of the Chinle (Droullard, 1953), all of the known deposits of commercial size and grade are restricted to the lower 30 ft. of the formation. The basal part of the formation is essentially equivalent stratigraphically to the Shinarump conglomerate, which elsewhere in Utah and Arizona contains important deposits of uranium. The lithology of the lower part of the Chinle is also similar to the Shinarump conglomerate, although it lacks the coarse sandstone and the quartz-pebble conglomerate that is characteristic of the true Shinarump, and it contains more limestone than does the Shinarump.

The lithologic character of the lower part of the Chinle is described in detail, from the basal beds upward, because of their relations to the known uranium deposits and their influence in guiding exploration.

The lowest lithologic unit of the Chinle is a siltstone. It obtains a maximum thickness of 10 ft. in the vicinity of the south workings (fig. 2), where it carries the known ore. Laterally from these workings it thins, ranging from 5 to 8 ft. in most places, but in some places it is absent. Where it is known to be mineralized, as at the south workings, or at the No. 4 prospect (see fig. 2), it is gray in color, but it is dominantly red a short distance away from the known deposits.

The second recognizable unit in the Chinle is a limestone-pebble conglomerate. It is lenticular and contains some discontinuous lenses of siltstone and shale. It ranges from 2 to 15 ft. in thickness and probably averages about 8 to 10 ft. thick. Immediately above the south workings, and at the No. 4 prospect, this conglomerate bed is only 2 feet thick.

On the basis of observations here and in other deposits in the vicinity of the Shinarump group of claims, it is possible that a sub-normal thickness of this conglomerate had some influence in localizing ore deposits in the underlying sandstone. This relationship may be useful in guiding exploration, although the relations are not yet well enough established to be positive. The limestone-pebble conglomerate contains uranium at its top just north of the south workings and at the Corral No. 1 prospect.

Above the limestone-pebble conglomerate is an ill-defined zone of siltstone and discontinuous lenses of limestone-pebble conglomerate. It is thinly and irregularly bedded, dominantly gray, although mottled red in places, and is at least 10 to 15 ft. thick. This stratigraphic unit contains numerous fragments of fossil wood, at least in places, and some of these richly replaced. The ore that has been mined from the north workings (fig. 2) has come from a thin layer of limestone-pebble conglomerate near the middle of this zone. In addition, most of the uranium-bearing samples that were obtained from the AEC drill holes came from this stratigraphic zone; the uranium in these samples probably is concentrated in fossil-wood fragments.

The rest of the lower half of the Chinle is dominantly siltstone. It is mainly red but in part gray. This unit is 75-100 ft. thick.

ORE DEPOSITS

Although radioactivity is reported in places in the lower 150 ft. of the Chinle formation (Droullard, 1953), the only known deposits of commerical size and grade are in the basal 30 ft. of the formation, as shown in sections in figure 2. Uraninite is the only primary mineral that has been recognized. That which is observed forms small grains, or masses, in the rock, and most of these probably replace fossil wood. Some of the sandstone type of ore may contain uraninite or some other uranium mineral that is so finely disseminated as not to be visible to the unaided eye. A few secondary uranium minerals are sparsely developed at and near the outcrop. There are no gangue minerals, except a few scattered grains of copper and iron sulfides. Ore of minable grade can be distinguished only by its radioactivity or by assaying, except where uraninite forms grains large enough to be visible. The mining that has been done has been guided to a large extent by geiger counters.

Deposits on the Shinarump group of claims were discovered at the outcrop during the late forties and have been mined intermittently since 1949. The recorded production is shown in the following table:

Table 1

Recorded ore production, Shinarump group,

Grand County, Utah, 1949-May 1953

Claim	Dry tons	U_3O_8 Pounds	U_3O_8 Percent	V_2O_5 Pounds	V_2O_5 Percent	Approximate range in Percent in $CaCO_3$
Shinarump No. 1	1,092*	9,132	0.41	3,500	0.16	5-6
Shinarump No. 3	322	3,178	0.49	650	0.10	9-56
Shinarump No. 1 or 3	212	729	0.17	?	?	.20
Total average	1,626	13,039	0.40	4,150	0.13	

* Includes a small but unknown amount of ore from some deposit in Morrison formation, added to shipments to keep $CaCO_3$ content below penalty grade; this Morrison ore probably added some of the reported V_2O_5.

The deposit in the south workings is in the lower 5 ft. of the basal sandstone bed of the Chinle formation. The ore ranges in thickness from 1 to 3 feet and it forms an irregularly tabular body that essentially follows the bedding but in places cuts across the beds. The uranium minerals are finely disseminated in the sandstone and visible grains of uraninite are sparse. Apparently the ore mined was fairly uniform in grade throughout the south workings, although in a few places there were small masses or horsts of barren or low-grade rock. It is possible that the northernmost drift in the mine cut the northern edge of the ore body, for the walls in that drift are barren (fig. 2). Likewise, the short adit just north of the mine is in barren rock. As the barren rock on the north side of the mine is red in color, in contrast to the gray color of the ore-bearing rock, it is possible that rock color may be useful in guiding exploration in this stratigraphic zone.

The ore bodies in the north workings is in a limestone-pebble conglomerate and siltstone about 20 feet above the base of the Chinle. Uranium in this ore body occurs as small grains and masses of uraninite, most of which probably replaced fossil wood. These grains are sufficiently disseminated through the beds to permit mining this layer; nevertheless, the grains are so erratically distributed that a single sample, such as core from a drill hole, might not give a representative sample of the ore body. This habit makes it difficult to interpret the samples from the holes that were drilled in the vicinity of the north workings.

Some of these holes yielded thin samples of high-grade material. It seems reasonable to assume that these samples represent merely masses of uraninite cut by the drill rather than thin layers of richly mineralized material. If this assumption is true, it is possible that the ground tested by the drill holes contains ore of mineable thickness and grade even though the samples do not clearly indicate an ore body. AEC estimates a reserve of a few thousand tons of ore in the area of these drill holes. Unquestionably, exploration by drifting in a deposit of this type will yield more information than does drilling, and it is possible that some shipping-grade material will be obtained in driving the drift.

Table 2

Assay data, Atomic Energy Commission Drilling

Shinarump Group, Grand County, Utah

Drill Hole No.	Collar Elev.	Depth to Base of Sample	Thickness	U_3O_8 Percent	$CaCO_3$ Percent
203	4843.5	287.5	0.4	0.18	23.4
204	4838.2	276.1	0.7	0.08	23.4
204	4838.2	287.8	0.1	0.11	57.5
205	4839.1	279.3	0.6	0.31	68.5
206	4839.7	277.0	0.2	0.07	16.0
206	4839.7	280.6	0.7	0.10	18.9
207	4837.2	276.7	0.2	2.32	25.1
207	4837.2	287.2	0.3	0.31	32.5
208	4832.7	265.0	0.5	0.12	15.4
208	4832.7	266.3	0.5	0.09	12.2
216	4584.6	65.7	0.3	23.53	58.9
216	4584.6	66.2	0.2	31.09	53.3
216	4584.6	66.9	0.7	0.33	64.2
216	4584.6	67.2	0.3	0.89	63.1
217	4581.4	49.3	0.3	0.31	19.1
217	4581.4	56.8	0.4	0.53	49.7
217	4581.4	57.6	0.1	0.17	31.4
219	4581.5	66.05	0.05	0.91	42.7
220	4772.6	238.4	0.1	0.07	7.7
222	4771.8	239.3	0.2	0.33	40.2
224	4639.1	126.5	0.2	0.10	32.7
224	4639.1	126.8	0.3	0.96	24.5
225	4638.5	122.8	0.2	1.79	76.9
226	4638.2	116.3	0.3	0.28	38.7
226	4638.2	120.7	0.1	0.30	39.3
227	4635.8	111.2	0.3	2.58	56.3
227	4635.8	111.7	0.2	0.25	62.4

Diamond-drill holes put down by AEC are shown on figure 2, and the assays of the core are shown in table 2. Although it is difficult to interpret the results of this drilling because of the lack of a definite marker bed, and because of the distribution habit of the uranium in the rock, the following conclusions appear to be reasonable.

1) No large ore body of high-grade ore has been cut in the drill holes and likely no large ore body is present in the area.

2) Nearly half of the holes, however, yielded sample showing some uranium, suggesting that mineralized rock is rather widely distributed in the area.

3) On the basis of observed distribution of uranium in the ore bodies that have been mined, even the drill holes that show only thin samples might be in masses of ore large enough and thick enough to mine.

4) It is even possible that some of the holes that are reported as barren may have passed through ore bodies, but failed to cut rock containing grains of uraninite, although this is unlikely.

5) Although four drill holes west of the south workings (drill holes DI 203, 204, 206 and 207) yielded mineralized samples, these samples appear to come from the interval of mixed sandstone and conglomerate 15 to 25 ft. above the base of the Chinle. Thus, it appears the ore body in the south workings, which is in the basal 5 feet of the Chinle, ends between the workings of the drill holes. The mineralized beds in the drill holes, however, are essentially at the same stratigraphic position as the ore body in the north workings, and, thus, these holes might be a mineable mass similar to the body in the north workings.

6) The stratigraphic range of the mineralized material, as shown by drilling and mine workings, is as much as 25 to 30 ft. and will require special consideration in any exploration and mine development planned in the future.

APPLICANT'S PROPOSAL

The applicant proposes to drive two exploratory drifts, each 600 ft. long. One drift is to extend westward from the south workings, and the other to extend southwestward from the north workings. The proposed drifts shown on the map accompanying the applicant's brochure are the same as those shown on the application of the Excalibur Company (Docket 2591) submitted May 1952. Since the Excalibur application was submitted, however, the north workings have been extended in a southwesterly direction at least 100 ft.; thus the applicant's proposal cannot be accepted precisely as submitted, but the plan of exploration appears sound in principle, and the exploration suggested below follows the applicant's general plan. This general plan of exploration has been discussed with Garth Thornburg, representing the company, and is acceptable to him. Details of this exploration must be based on the solution of some engineering problems, and these details will have to be worked out by R. R. McLellan. As the accuracy of the map (fig. 2) is not known, perhaps precise footage figures of the drifting necessary to complete the first stage of the proposed work cannot be determined until an accurate transit survey of the property is made.

SUGGESTED EXPLORATION

Exploratory drifts extending westward from the area of the south workings and southward from the north workings would test mineralized material that is reported by the applicant to be marginal, and would pass through ground shown by AEC drilling to be mineralized. It is suggested that the work in each drift be done in two stages, each exploratory drift being stopped at the end of the first stage if the drifts are in rock that is barren or essentially so in the opinion of DMEA field representatives.

The drift from the north workings should be driven approximately S. 10° E. to the vicinity of drill hole DI 221, which is reported barren. From DI 221 a cross-cut should be driven southeastward about 100 feet to the vicinity of DI 220 and 222, which are reported to be in mineralized rock. Jackhammer holes should be drilled every 25 feet along the drift to a depth of about 15 feet to test the underlying beds, which contain the deposit in the south workings. The color of the cuttings from the hole should be noted and the holes should be probed with gamma-ray equipment. If the color of the cuttings are essentially red, the hole should be considered as unfavorable. Careful records of the location of the holes, color of rock, and thickness and amount of radioactivity should be kept. A total of 225 feet of hole will be required in stage 1. This constitutes stage 1 of exploration from the north workings.

If the drift at DI 221 is barren or essentially so in the opinion of the DMEA field representatives, exploration from the north workings would be terminated on completion of the cross-cut (completion of stage 1). If, on the other hand the drift is in mineralized material, the drift should be extended S. 15 W. about 225-250 feet, making a total of 600 feet of drifting and cross-cutting from the north workings. Testing of the lower horizon with jackhammer holes would require 150 feet of hole.

From the south workings the applicant proposed to drift westerly from the short adit just north of the mine. This site was selected as the mine itself is caving near the portal and presents a mining hazard. Unfortunately, however, the short adit is in barren ground, and geologic evidence along the north side of the mine suggests that the proposed site is north of the ore deposit. This presents a problem that must be resolved after considering the engineering and geologic factors.

The geologic objectives of the work are to test for a possible westward extension of the deposit developed in the south workings and to test the mineralized beds in the vicinity of drill holes DI 203, 204, 206, and 207. From the geologic standpoint alone, it would be desirable to extend the exploratory drift westerly from one of the headings in the mine.

If it should be more feasible from an engineering standpoint, however, to drift from the short adit north of the mine, this drift should be swung in a more southerly direction to intersect the westward projection of the deposit exposed in the mine and then swung westerly to the target area in the vicinity of drill holes DI 203, 204, 206, and 207. The exact point of hitting this target area can be selected by the engineer.

From this drift, jackhammer holes should be drilled upward about every 25 ft. These holes can be vertical or inclined but should be long enough to test 25 ft. of beds lying above the drift. Samples of cuttings from these holes should be saved for radiometric or chemical testing, and the holes should be logged radiometrically by use of a rubber hose to push the probe up the hole. A few hundred feet of hole will be required for this work.

From the point where the drift intersects the target area in the vicinity of drill holes DI 203, 204, 206, and 207, a raise should be made about 20 to 25 ft. to reach the stratigraphic position of the mineralized material cut in these drill holes. From this raise, each of the holes should be tested by cross-cutting to them.

This work will complete stage one of the suggested exploration from the south workings. If the drift is barren in the target area in the vicinity of the four drill holes, exploration should be terminated on the completion of the raise and cross-cut. If, on the other hand, the drift is in mineralized rock, it should be extended westerly far enough to make a total of 600 ft. of exploratory drifting from the south workings.

This constitutes stage 2 of work from the south workings. Rocks above the stage 2 drift should be tested with jackhammer holes in the same manner as suggested for the stage 1 drift. This extension would constitute stage 2 of exploration from the north workings.

If the exploration outlined above from either the north or south workings should be terminated at the completion of stage 1, it is suggested that 100 feet of exploratory drift be driven westerly from prospect No. 4.

CONCLUSIONS AND RECOMMENDATIONS

On the basis of the ore already developed by mining on the Shinarump group of claims and the indications obtained from AEC drilling, it is concluded that additional exploration on the Shinarump group of claims has a chance of finding one or more uranium-ore bodies of mineable grade and thickness. Because of the habits of the deposits, however, and because of the terrain in the area, exploratory drifting is believed to be the most practicable means of exploration.

For these reasons, it is recommended that the Defense Minerals Exploration Administration enter into a contract with the Thornburg Mining Company to contract for the exploration suggested in this report.

DMEA 3060

THORNBURG MINING COMPANY
SHINARUMP GROUP
GRAND COUNTY, UTAH

gcl
11/6/53

Engineering Report

By Russell R. McLellan
Mining Engineer
Bureau of Mines

DMEA 3060

THORNBURG MINING COMPANY
SHINARUMP GROUP
GRAND COUNTY, UTAH

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ILLUSTRATIONS

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DMEA 3060

THORNBURG MINING COMPANY
SHINARUMP GROUP
GRAND COUNTY, UTAH

ENGINEERING REPORT

By

Russell R. McLellan

INTRODUCTION

The Thornburg Mining Company of Grand Junction, Colo., has applied to the Defense Minerals Exploration Administration for assistance to explore for uranium on the Shinarump group of claims, Seven-mile area, Grand County, Utah. The company proposed to drive two exploratory drifts, each 600 feet in length, for a total cost of $37,210.00, Government participation 90 percent or $33,489.00.

The property was examined on July 24, 1953, by the writer; R. P. Fischer and W. I. Finch of the Geological Survey; E. V. Reinhardt of the Atomic Energy Commission; and Vance and Garth Thornburg, the applicants.

All members of the examining team are in agreement that an exploration project is justified on the Thornburg claims; however, in order to more fully test the ground, a slightly modified program is recommended in which limited footages of crosscutting and raising and several hundred feet of exploratory jackhammer drilling are added to the applicants' proposals. This revision is acceptable to the applicants.

The cost of the modified exploration program is estimated to be $42,238.00, Government participation 90 percent or $38,014.20.

ACKNOWLEDGMENTS

The examining team was aided in the field by Vance and Garth Thornburg and by L. Filener, mine superintendent for the Thornburg Mining Company. Considerable information was contributed by the Atomic Energy Commission in connection with their diamond drilling program on the property.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Shinarump claims are about 10 miles by road northwest of Moab, Utah, and about 1/2 mile west of U. S. Highway 160, Green River Mining District (Seven-mile area), Grand County, Utah (fig. 1). The mine portals and dumps are visible from the highway.

The mine is readily accessible for year-round operation. Supplies and equipment are available at Moab, Utah, or at Grand Junction, Colo., 108 miles away.

Labor is fairly plentiful in the area and living accommodations are available at Moab. Electric power is not installed at the mine. Water for mining purposes must be hauled from the Colorado River about 8 miles away. The nearest milling facilities are at Monticello, Utah, 67 miles to the south.

HISTORY AND PRODUCTION

The deposits on the Shinarump claims were discovered in 1949 and have been mined intermittently since that date. The following table shows the recorded production from 1949 to May 1953:

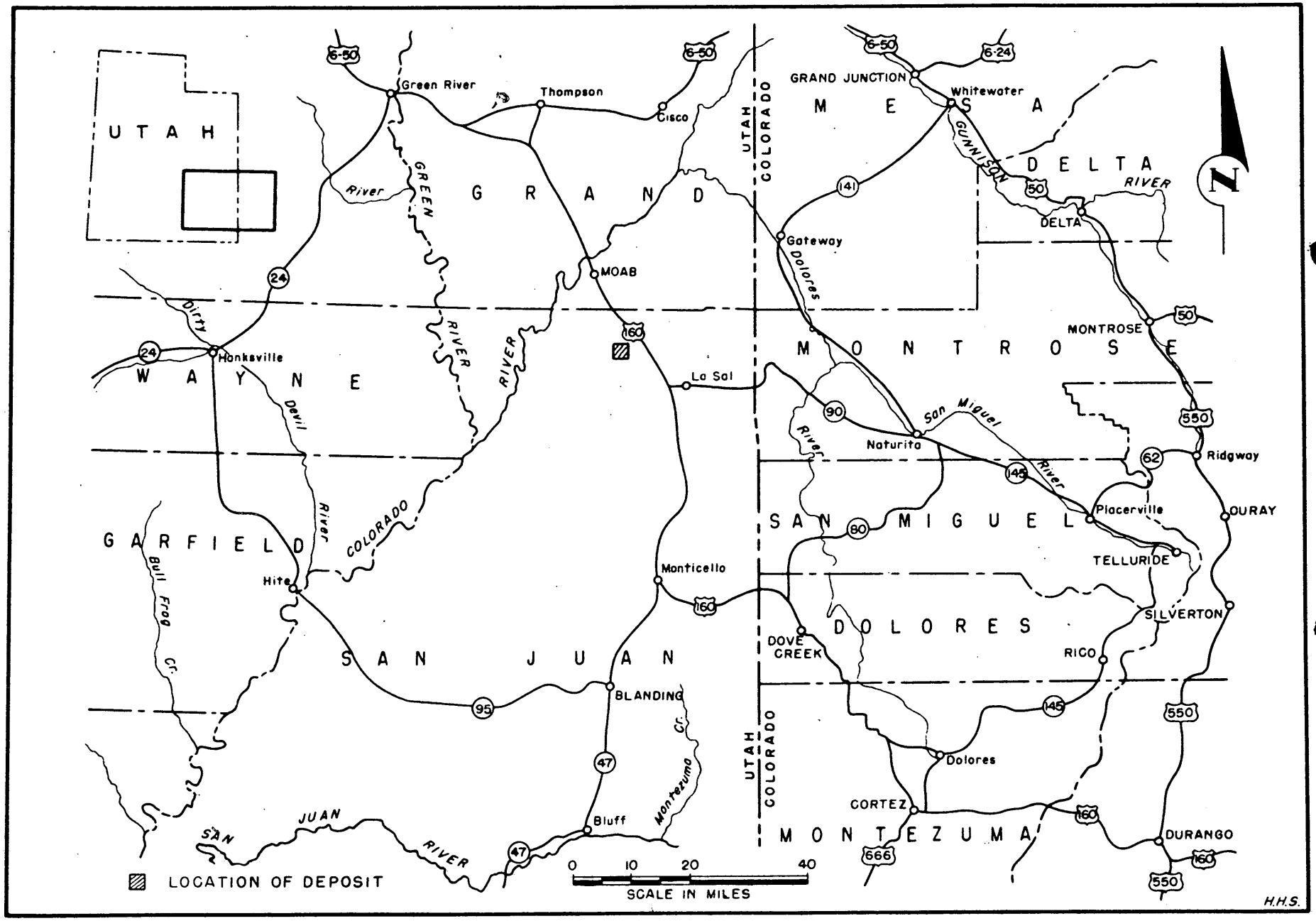


FIGURE 1. - LOCATION MAP, THORNBURG MINING COMPANY SHAMROCK GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY UTAH. (DELA [illegible])

Claim	Dry tons	U_3O_8 Pounds	U_3O_8 Percent	V_2O_5 Pounds	V_2O_5 Percent	Approximate range in Percent of $CaCO_3$
Shinarump No. 1	1,092*	9,132	0.41	3,500	0.16	5-6
Shinarump No. 3	322	3,178	0.49	650	0.10	9-56
Shinarump No. 1 or No. 3	212	729	0.17	?	?	0.20
Average	1,626	13,039	0.40	4,150	0.13	

*Includes an unknown amount of ore from a deposit in the Morrison formation.

OWNERSHIP AND EXTENT

The following claims, owned by the Thornburg Mining Company, are included in the application and are recorded in the office of the County recorder, Grand County, Utah:

Claim	Book No.	Page No.
Shinarump No. 1	9K	288
Shinarump No. 1A	9K	289
Shinarump No. 3------	(9J	235
	(9K (Amended location)	168
Shinarump No. 4------	(9J	310
	(9K (Amended location)	168
Vance Thornburg	9J	171
Gara No. 1* ---------	(9J	600
	(? (Amended location)	?

*Gara No. 1 was located originally as Gara Kristin, Book 9J, page 600.

DESCRIPTION OF THE DEPOSITS

The deposits discovered to date on the Shinarump claims are in the basal 30 feet of the Chinle formation which crops out in a steep slope and is overlain by a thick section of Wingate sandstone. The Wingate forms a vertical cliff above the Chinle slope.

Finch and Fischer of the Geological Survey have determined that the deposit in the south workings is about 20 feet lower stratigraphically than the deposit in the north workings. The two workings are approximately 1,200 feet apart (fig. 2). Ore in the south workings ranges from 1 to 3 feet in thickness at the base of the Chinle and probably was comparatively uniform in grade throughout the deposit. Ore in the north workings is about 20 feet above the base of the Chinle and appears to be more erratic in grade and occurrence. Here, the radio-active zone ranges from a few inches to several feet in thickness and contains small, isolated pods of extremely high-grade ore. The uranium in both deposits is believed to be in uraninite which occurs as disseminated grains and occasionally as small masses. The deposits are unique for the reason that the ore seldom can be distinguished from the surrounding barren rock except with the use of a Geiger counter.

Due to the erratic occurrence of the ore, there is considerable doubt as to the value of attempting to diamond drill the area except upon an extremely closely spaced grid pattern. Such a pattern is impossible in this area due to the vertical cliffs and great thickness of Wingate sandstone. The deposits are best suited for exploration by drifting and crosscutting.

MINEABLE ORE RESERVES

Due to the erratic occurrence of the ore, the applicants have limited the ore reserve to "a few hundred tons." However, the Atomic Energy Commission estimates a reserve of several thousand tons on the basis of drill holes completed near the workings (fig. 2 and Table 2, Geological Survey report).

PRESENT STATUS

Development and Exploration

The deposits on the Shinarump claims have been developed by two groups of workings about 1,200 feet apart. About 310 feet of drifting and 65 feet of crosscutting comprise the north workings. One small drift 40 feet in length is 150 feet west of the main adit. A small amount of open cut mining was done near the portal of the larger workings. About 500 feet of drifts and a 50-foot by 70-foot open cut comprise the main operation of the south workings. A drift 90 feet in length was driven in barren rock about 100 feet north of the main adit.

Exploration to date consists of hundreds of feet of bulldozer cuts along the Chinle outcrop and numerous diamond drill holes drilled by the Atomic Energy Commission. Thirty-one of the drill holes are near the workings as shown on figure 2 which also shows the other development and exploration features on the property.

Mining and Milling Equipment and Other Facilities

Mining was in progress on the date of the examination. The company was utilizing a 315 C.F.M. portable compressor, 2 jackleg drills, 1 diesel-powered shuttle car, and adequate pipe, hose, tanks, and tools to carry on a small mining operation.

No milling equipment or other facilities are on the property and ore production is trucked to Monticello, Utah, for processing.

PROJECT PROPOSALS, WITH COSTS

The applicants proposed to drive one exploratory drift 600 feet in length southward from the north workings, and a second drift 600 feet in length westward from the south workings. The cost was estimated to be $37,210.00, Government participation 90 percent or $33,489.00.

By utilizing the data obtained as a result of the Atomic Energy Commission diamond drilling, the following modified program is recommended:

(1) Tie in the mine workings and the drill holes with an accurate transit survey.

(2) Exploration from north mine workings (fig. 2):

Stage I - Drift 275 feet southward on a bearing of approximately S. 10° E. to the vicinity of drill hole DI 221. Crosscut 100 feet southeastward to the vicinity of holes DI 220 and DI 222. At the completion of the drift and crosscut, 225 feet of jackhammer holes should be drilled at intervals of 25 feet and to a depth of 15 feet along the floor of the drift and crosscut to test the underlying beds. Color of the cuttings should be noted -- essentially red cuttings indicate unfavorable ground. All holes should be probed with gamma-ray equipment, and careful logs should be kept noting the location, color of cuttings, and thickness and amount of radioactivity.

Stage II - This stage will be approved by Defense Minerals Exploration Administration field representatives only if the drift of stage I encounters mineralization. If mineralization is encountered, the drift should be extended S. 15° W. about 225 to 250 feet or until a total of 600 feet of drifting and crosscutting is

accomplished in the two stages. About 150 feet of jackhammer holes at 25-foot intervals, 15 feet deep, will be necessary to test the lower horizon in stage II.

(3) Exploration from the south workings (fig. 2):

Stage I - Start in the short adit just north of the mine to avoid caving entry of main workings and drift about 90 feet S. 46° W. to intersect the westward projection of the ore deposit. Then swing westward for a distance of about 260 feet to intersect drill hole DI 206. Approximately 400 feet of jackhammer holes should be drilled upward at intervals of 25 feet. Each hole, whether vertical or inclined, should be long enough to test 25 feet of beds above the drift. Samples of cuttings should be saved for radiometric or chemical testing, and each hole should be logged radiometrically by use of a rubber hose to push the probe up the hole.

At the point where the drift intersects hole DI 206, a 20 to 25-foot raise should be driven to reach the stratigraphic position of the mineralized material cut in holes DI 203, DI 204, DI 206, and DI 207. From the raise a 60-foot crosscut should be driven northward to intersect holes DI 204 and DI 207, and a 60-foot crosscut should be driven southward to intersect hole DI 203.

Stage II - This stage will be approved by Defense Minerals Exploration Administration field representatives only if the main drift of stage I from the south mine workings encounters mineralization in the favorable horizon in the vicinity of the four drill holes.

If mineralization is encountered, the drift should be extended westward about 250 feet for a total of 600 feet of drifting from the south mine workings. About 300 feet of jackhammer holes should be drilled in the same manner as outlined in stage I.

(4) In the event that exploration from either the north or south mine workings is terminated at the completion of stage I, it is proposed that 100 feet of drifting be done westerly from prospect No. 4 as shown on figure 2 with the geologic report.

Estimated costs for the project are as follows for a period of 7 months:

Labor and supervision

2 miners at $16.00 per day,	
$346.66 per month, regular time	$ 4,853.00
$104.00 per month, overtime	1,456.00
4 muckers at $12.00 per day,	
$260.00 per month, regular time	7,280.00
$78.00 per month, overtime	2,184.00
2 surface men at $12.00 per day,	
$260.00 per month, regular time	3,640.00
$78.00 per month, overtime	1,092.00
Total labor	$20,505.00

{ 1 muckers 1 shotfirer oper } each heading

{ oper compressors, winder, water? each heading ? water ? }

1 superintendent at $600.00 per month	$4,200.00		
1 consulting engineer, part time, $200.00 per month	1,400.00		
Total supervision		$ 5,600.00	
Total labor and supervision			$26,105.00

Operating materials and supplies

		Salvage Value
Pipe	$ 1,500.00	$250
Track (sublevel crosscut only)	120.00	None
Timber	300.00	None
Roof bolts	1,450.00	None
Explosives	2,200.00	None
Bits and steel	1,000.00	$100
Gas, fuel oil, lubricating oil and grease	3,000.00	
Other	520.00	
Total operating materials and supplies		10,090.00

Operating equipment

Rental:			
1 - 315 C.F.M. compressor at $300.00 per month	$2,100.00		
4 - mine cars (sublevel crosscut only) 1 month	20.00		
2 - blowers, $37.50 per month each	525.00		
Total rentals		$2,645.00	
Depreciation:			
1 - 315 C.F.M. compressor, $5,400.00, $90.00 per month	$ 630.00		
2 - shuttle cars, total value $4,400.00, $73.00 per month	511.00		
2 - jackleg drills complete, $26.00 per month	182.00		
1 - stoper, $10.00 per month	70.00		
1 - pickup truck, $20.00 per month	140.00		
Total depreciation		$1,533.00	
Total operating equipment			4,178.00

Miscellaneous

Sampling and analysis	$ 600.00		
Accounting, part time, $25.00 per month	175.00		
Social Security and Workmen's Compensation	1,090.00		
			1,865.00
Total cost of project			$42,238.00

Summary of Costs

Labor and supervision	$26,105.00
Operating materials and supplies	10,090.00
Operating equipment	4,178.00
Miscellaneous	1,865.00
Total cost of project	$42,238.00
Government participation at 90 percent	$38,014.20
Unit cost per foot for 1,345 feet of drifting, crosscutting, and raising	$31.40* (28.30)?

*Includes cost of jackhammer exploration.

CONCLUSIONS

It is concluded that the Shinarump group of claims is a potential source of uranium ore. Past production and favorable indications encountered by the Atomic Energy Commission drilling justifies an exploration program. The erratic occurrence of the ore, difficult terrain, and the great thickness of sediments above the ore horizon discourage additional surface drilling; therefore, a program of drifting undoubtedly will be the most satisfactory method of exploration.

The applicants' proposals are practical and the costs are not excessive; however, the applicants' proposals should be slightly modified to take advantage of the data obtained from the Atomic Energy Commission diamond drilling.

RECOMMENDATIONS

It is recommended that 1,100 feet of drifting, 220 feet of crosscutting, 25 feet of raising, and 1,075 feet of jackhammer holes be approved as outlined in the Project Proposal section. The project should be prepared on a short form, authorizing a unit cost per foot

of $31.40 for a total of 1,345 feet of drifting, crosscutting, and raising. The unit cost per foot will include the cost of drilling and probing the jackhammer holes and of completing the preliminary survey.

/kp

FILE COPY
SURNAME:

Docket
Murphy
Ellis
Selfridge
Johnson

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

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

JUN 2 6 1953

Re: Docket No. DMA-3060 (Uranium)
Thornburg Mining Company
Seven Mile Area Claims
Grand County, Utah

Dear Mr. King:

The captioned application is referred to your office for a field examination and recommendation based thereon. A copy of the application was retained by your office.

Copies of memoranda from Mr. H. D. Keiser, dated June 17, 1953, and Mr. Arthur P. Butler, Jr., dated June 18, 1953, outlining recommendations and questions to be considered by the Field Team, are enclosed.

The subject application is similar to one submitted in 1952 by the Excalibur Uranium Corporation on the same property. A copy of this application (Docket No. DMA-2591) was retained by your office. The Excalibur Uranium Corporation application was withdrawn by the Applicant before a contract had been signed.

You will note that the time required for completion of the proposed work and the estimates for individual item costs vary considerably in the two applications although they are based on identical exploration work.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

Enclosures

APPROVED:

J. H. Hedges

Member, Bureau of Mines

A. R. Kinkel, Jr.

Member, Geological Survey

FMMurphy/db
6-24-53
cc to: Adm. Reading File
Operating Committee
Docket
Messrs: H. D. Keiser, Rm. 3641
A. P. Butler, Jr., - Rm. 3206, GSA
Ellis
Murphy

FILE COPY
SURNAME:
Docket
Murphy
Ellis
Kinkel
Johnson

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

JUN 2 6 1953

Mr. Vance Milton Thornburg
Thornburg Mining Company
. S. Bank Building
Grand Junction, Colorado

Re: Docket No. [illegible] (Uranium)
Thornburg Mining Company
Seven Mile Area Claims
Grand County, Utah

Dear Mr. Thornburg:

The application for assistance in exploring your property in Grand County, Utah, under the above-captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred for a field examination to the Executive Officer of Region IV at the following address:

Mr. [illegible] Ring
Executive Officer
DMEA Field Team, Region IV
22[illegible] New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

C. O. Mittendorf

Administrator

6-26-53

IMurphy/db
6-26-53
cc to: Adm. Reading File
Docket
Messrs. Ellis
Murphy
DMEA Field Team, Region IV (2)

6/22/53 gla

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : E. M. Ellis, DMA Member
Uranium Commodity Committee

DATE: June 18, 1953

FROM : Arthur P. Butler, Jr., USGS Member
Uranium Commodity Committee

SUBJECT: Application DMA Docket 3060 (Uranium) Thornburg Mining Co., applicant, Grand Junction, Colo.; Shinarump 1-4, Shinarump 1A, Shinarump fraction, and Gara 1, claims, Seven Mile Canyon, area, Grand Co. Utah.

The application for exploration assistance on the property described in the subject above has been reviewed, and discussed with H. D. Keiser, Bureau of Mines member, Uranium Commodity Committee, and J. C. Hosted, Atomic Energy Commission. The map, exhibit "A" indicates that the property is the same as that for which exploration assistance was requested in an application by the Excalibur Uranium Corp. DMA Docket 2591 (uranium). The previous application was subsequently withdrawn. (See memorandum from E. M. Ellis to Operating Control and Statistics Division, December 11, 1952)

Proposal

The applicant proposes to explore uranium-bearing rock in the Shinarump conglomerate by driving two 600-foot adits at a total cost of $37,210.00.

Comment

As this application appears to be essentially identical with that made in DMA Docket 2591 and as no new information is presented, my comments made in a memorandum of July 7, 1952 concerning Docket 2591 are applicable to the present document and reference is made to that memorandum.

Since the application under Docket 2591 was submitted and referred to the Field Team, the Atomic Energy Commission has carried on exploration by drilling. Some of this was on the present applicant's property. No mention of this work is made by the applicant. Details of the results of that drilling are not available here but they would be applicable to evaluation of the application and of the feasibility of drilling. It is possible for example that the results may be useful in determining the position and extent of drifting that may be justified, and ~~to~~ in determining whether or not additional drilling might be preferable to some of the proposed underground work.

The reasons for position, direction, and extent of proposed exploration and relation to possible favorable geologic conditions such as size and distribution of bodies of uranium bearing rock are not made clear in the application.

Recommendation

I recommend that this application be referred to the Field Team for review and evaluation, that the Field Team refer to comments made with respect to Docket 2591, and that they consider the bearing on this application of the results of drilling by the Atomic Energy Commission. I suggest, too, that the Field Team consult with the geologic and engineering staff of the Atomic Energy Commission, Grand Junction to obtain the benefit of maps, other information, and suggestions that that staff may be able to supply.

Arthur P. Butler, Jr

Copy to: E. Wm. Ellis (2)

6/19/53

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

June 17, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
JUN 18 1953

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4640

From: H. D. Keiser, Bureau of Mines Member
Uranium Commodity Committee

Subject: DMEA Docket 3060, Thornburg Mining Co., U. S. Bank Building, Grand Junction, Colorado.

I have reviewed the application included in the subject docket and have discussed it with Arthur P. Butler, Geological Survey Member, and Joseph O. Hosted, representative of the Atomic Energy Commission.

It is recommended that the application be referred to the field team for investigation and report, and that the field team be requested to discuss the application with Mr. Ernest Gordon, Atomic Energy Commission, Grand Junction, Colorado.

H D Keiser
H. D. Keiser

Attachments 2

6/15/53 gla

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

224 New Customhouse
Denver 2, Colorado

June 12, 1953

Memorandum

To: E. W. Ellis, DMEA Member, Uranium Commodity Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA-3060, Thornburg Mining Company (Uranium)

why not 3 ?!

In accordance with our telephone conversation this morning we are enclosing two photo prints of the map to accompany the application for exploration assistance. The map shows the claims owned by the company and the outline of the property involved. This was the only map submitted with the application.

W. H. King
W. H. King

Enclosures

attached maps referred to Mr. Keiser, Bur. of Mines + Mr. Butler, Geo. Survey in connection with review of application

June 12, 1953.: Mr. Ellis called long distance to King, Region IV, requesting that maps and other necessary data be sent in to this office with regards to property. Commodity men cannot make out their comments due to lack of maps.

June 3, 1953

Mr. Vance Elton Thornburg
Thornburg Mining Company
U. S. Bank Building
Grand Junction, Colorado

Subject: DMEA-3060
Re: Exploration Assistance
Shinarump Group, etc.

My dear Mr. Thornburg:

The receipt of your application dated March 23, 1953 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3060 and referred to the Rare and Miscellaneous Division.

Kindly refer to DMEA-3060 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS
Robert E. Adams
Chief, Operations Control
and Statistics Division

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

June 3, 1953

Memorandum

To: Executive Officer, DMEA Field Team, Region VII

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region VII.

DMEA - 3060 - Thornburg Mining Company

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

38226

"EXHIBIT B"

CHANNEL SAMPLES

SAMPLE	WIDTH	U_3O_8	V_2O_5	$CaCO_3$
1	7.5'	NIL	.07	50% +
2	0.8'	.34	.12	50 +
3	1.1'	.27	.07	50 +
4	2.1'	.37	.15	50 +
5	2.8'	NIL	.10	50 +
6	1.4'	.16	.50	50 +
7	7.0'	.01	.10	50 +
8	0.5'	4.45	.70	2.46
9	Specimen	5.45	.70	50 +
10	1.8'	.32	.15	50 +
11	3.0'	.10	.05	50 +
12	0.7'	.19	.05	6.3
13	0.5'	4.07	.30	50 +
14	5.0'	.10	.05	19.0
15	0.4'	2.72	.15	34.5
17	0.3'	.86	.06	50 +
18	0.4'			
19	0.4'			
20	Specimen			
21	0.4'			
22	0.3'			

AEC DIAMOND DRILL RESULTS

HOLE	FROM	TO	FEET	U_3O_8%	AVERAGES
D1-20.3	287.1	287.5	0.4	0.18	
20.4	275.4	276.1	0.7	0.08	
	287.7	287.8	0.1	0.11	
20.5	278.7	279.3	0.6	0.31	
20.6	276.8	277.0	0.2	0.07	3.8' - .02%
	279.4	280.6	0.7	0.10	
20.7	276.5	276.7	0.2	2.32	10.7' - .06%
	286.9	287.2	0.3	0.31	
20.8	264.5	265.0	0.5	0.12	1.8' - .06%
	265.8	266.3	0.5	0.09	
21.6	65.4	65.7	0.3	23.53	
	66.0	66.2	0.2	31.00	1.8' - 7.68%
	66.2	66.9	0.7	0.33	
	66.9	67.2	0.3	0.89	
21.7	49.0	49.3	0.3	0.31	
	56.4	56.8	0.4	0.53	1.2' - .19%
	57.5	57.6	0.1	0.17	
21.9	66.0	66.05	0.05	0.81	
22.0	238.3	238.4	0.1	0.07	
22.2	239.1	239.3	0.2	0.33	
22.4	126.5	126.5	0.3	0.16	0.5' - .64%
	126.5	126.8	0.3	0.96	
22.5	122.6	122.8	0.2	1.79	
22.6	116.0	116.3	0.3	0.08	1.7' - .02%
	120.6	120.7	0.1	0.30	
22.7	110.9	111.2	0.3	2.58	0.8' - 1.03%
	115.5	111.7	0.2	0.25	

WAGON DRILL HOLES / PROBE RESULTS

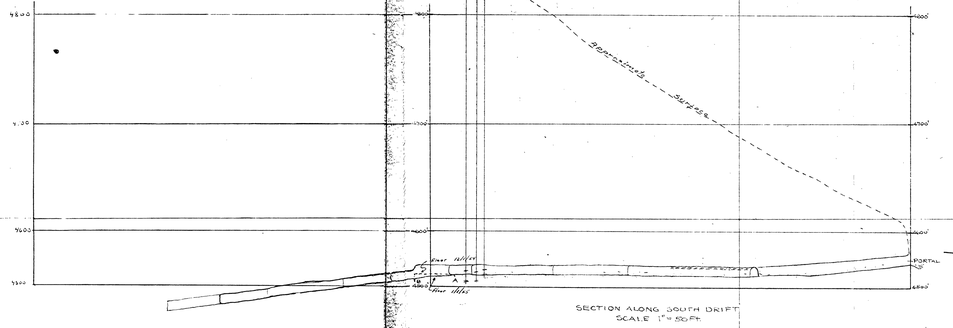
HOLE	FROM	TO	FEET	GEIGER
WD 1	2.5	25.5	0.5	Trace
	2.9	31	1.0	Good
	3.4	34.5	0.5	Trace
2	2.3	34.0	0.8	Fair
	3.0	32.0	1.7	Good
3	3.2	33	1.0	Trace
	3.4	35	1.0	Trace
4	3.3	36	3.0	Trace
5	3.4	36	2.0	Trace
6	3.5	37.5	2.5	Trace
7	36.7	37.8	1.1	Trace
	37.8	38.1	0.3	Good
	38.1	39.7	1.6	Trace
8	36.7	38.5	1.8	Good
9	39.3	43.0	3.7	Fair
10	4.4	4.5	1.0	Fair
11	4.9	5.0	0.1	Fair
12	36	38.7	2.7	Fair

Legend: Samples 39-47 - South Workings

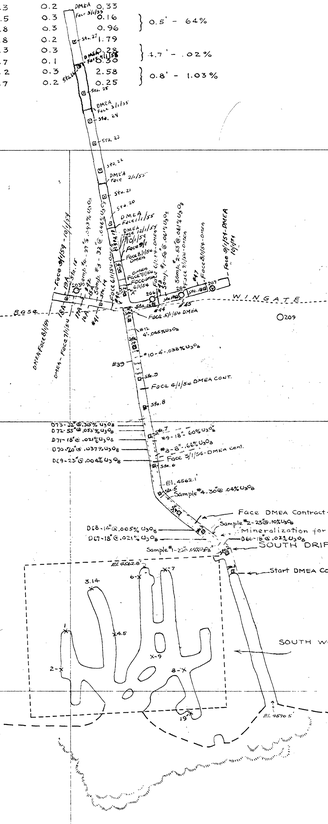
No.	Width'	U_3O_8%
39	3.3	0.225
40	3.9	0.896
41	2.2	0.349
42	3.5	0.427
43	3.3	0.143
44	3.9	0.074
45	3.7	0.349
46	2.5	0.270
47	2.9	1.346
124	2.0	0.355
154	1.1	0.371
174	2.5	0.085
184	2.1	0.036
194	1.8	0.078

North Workings

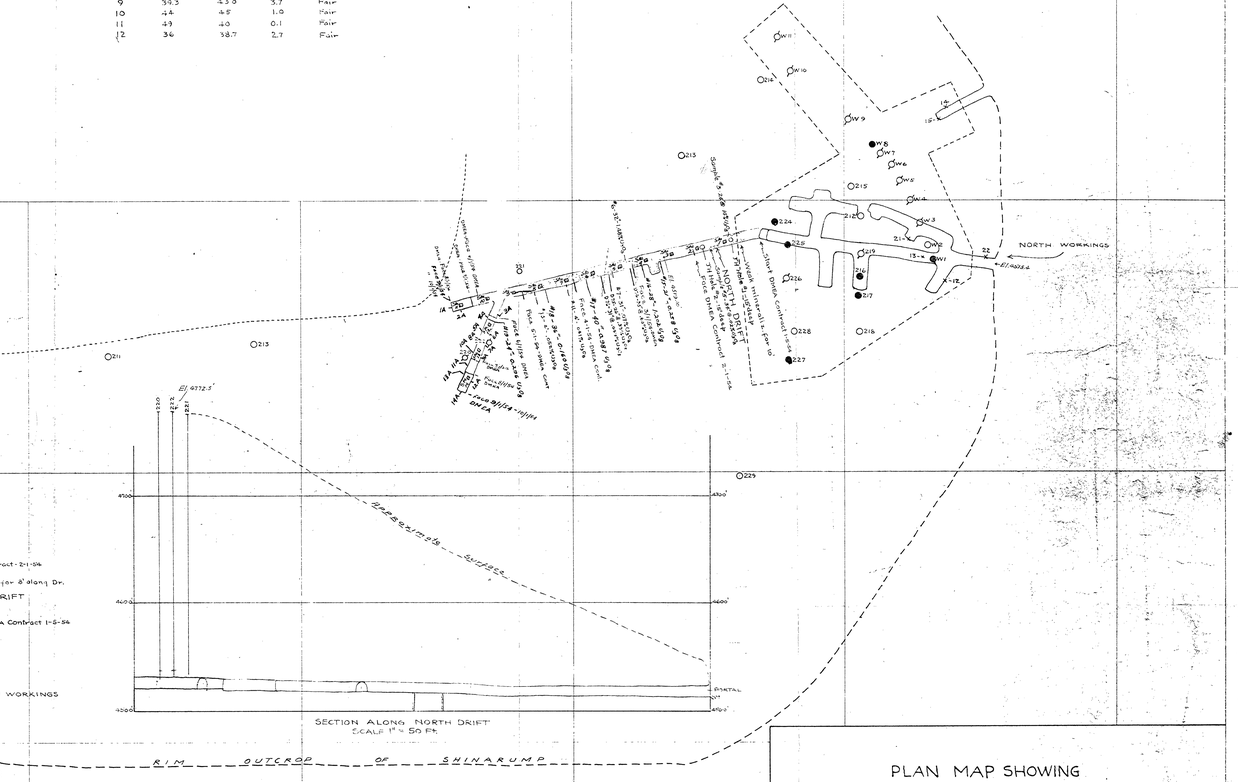
No	Width'	U_3O_8%
14	1.8	0.082
24	1.4	0.201
34	1.1	0.752
44	1.4	0.058
54	2.	0.080
64	2.3	0.376
74	1.5	0.042
84	3.9	0.114
94	1.7	0.969
104	1.0	0.004
114	1.5	0.038
124	3.7	0.039
134	1.5	0.746
144	1.1	0.047



SECTION ALONG SOUTH DRIFT
SCALE 1" = 50 Ft.



SECTION ALONG NORTH DRIFT
SCALE 1" = 50 Ft.



PLAN MAP SHOWING UNDERGROUND WORKINGS AND DRILL HOLES THORNBURG MINING COMPANY SEVEN MILE AREA, MOAB, UTAH

SCALE 1" = 50' 10-15-53 L.J. Coady

Rev. 9-10-54 B.H. Martin
" 10-1-54
3-1-55 G.W. Beecroft

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
OCT. 1956
DOCKET 3060
CONTRACT IOM E638

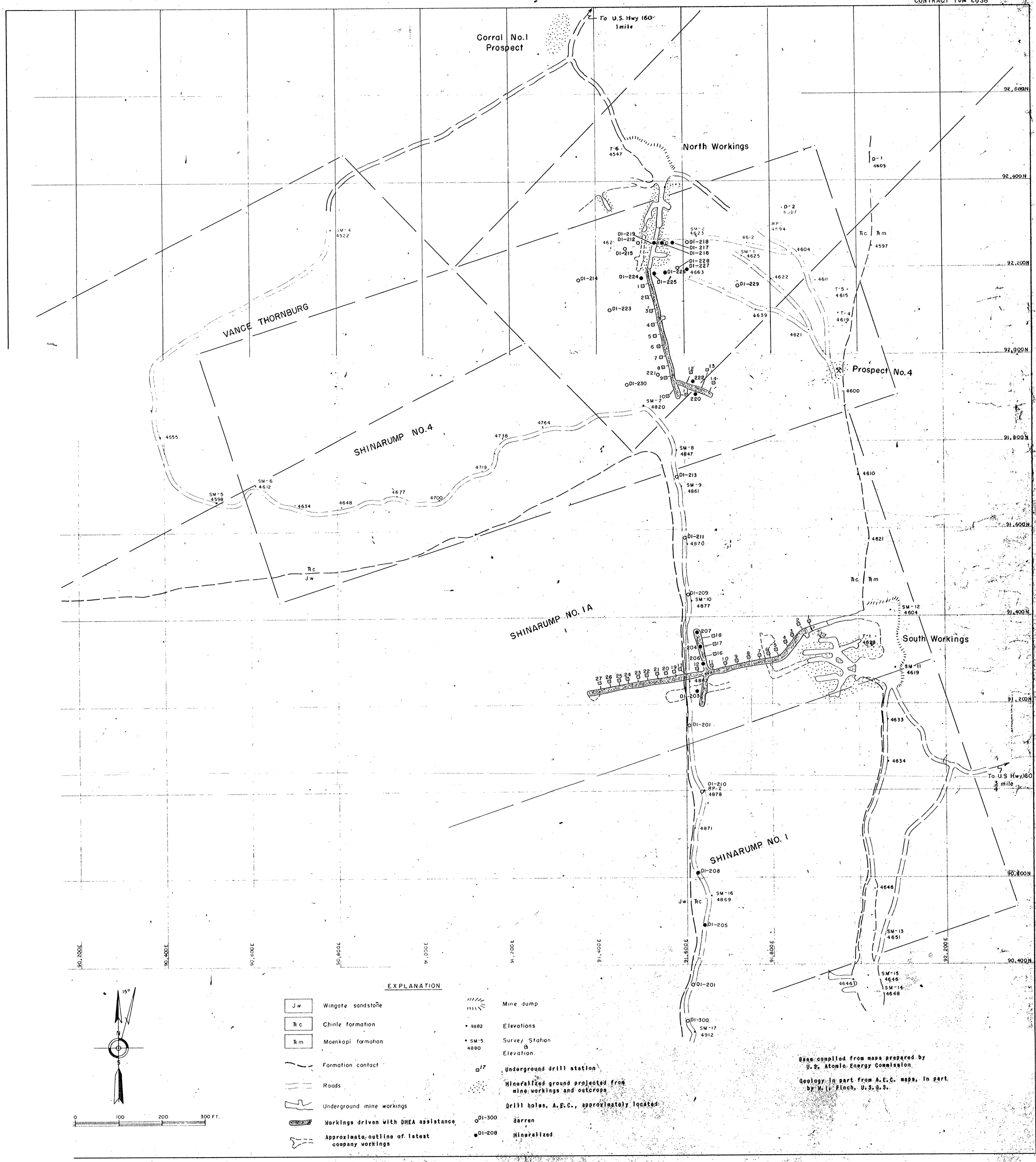


Figure 2.--MAP OF WORK UNDER DMEA 3060, SHINARUMP GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION
APRIL 1956
DOCKET 3060
CONTRACT IDM E638

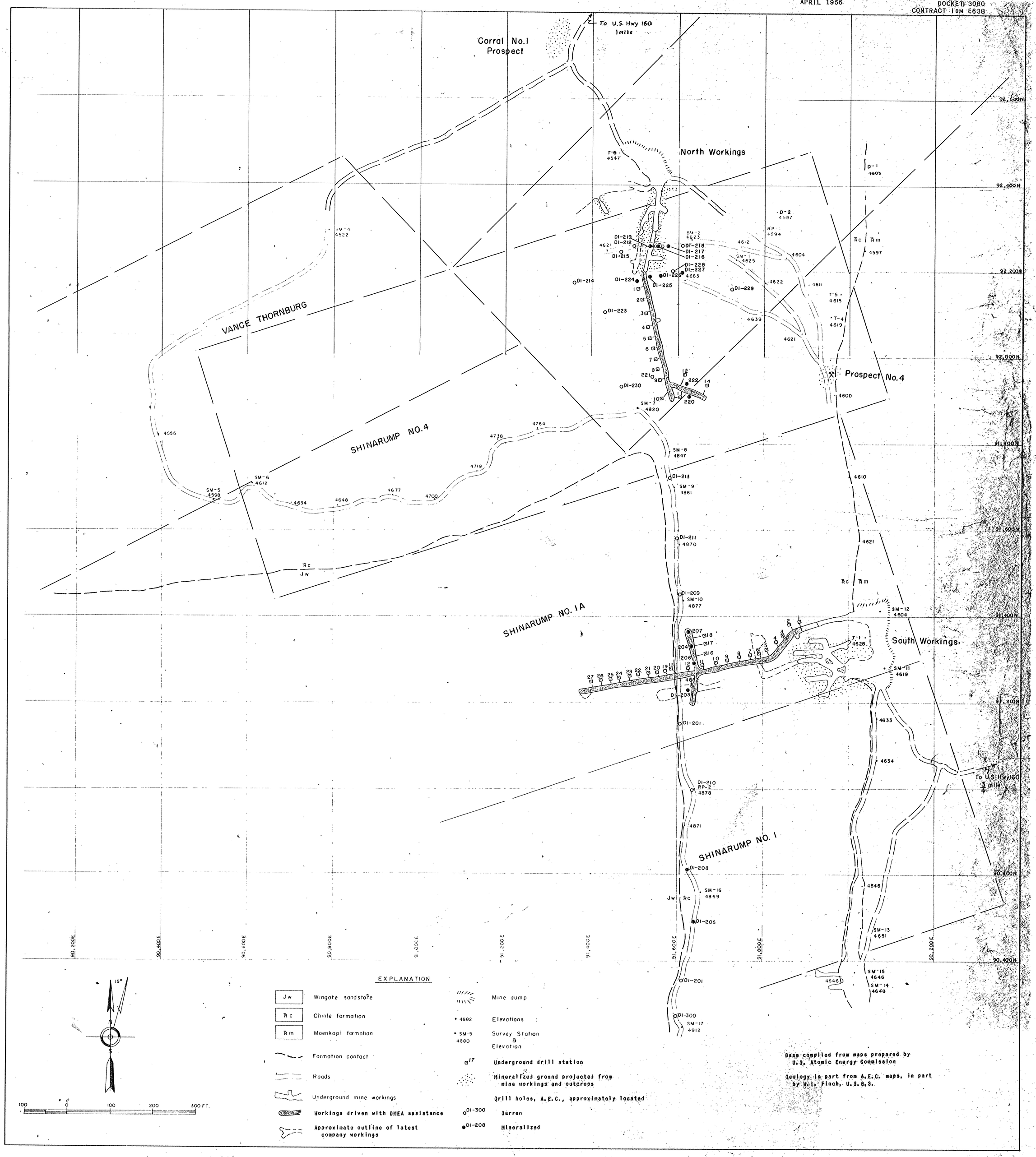


Figure 1. PROGRESS MAP OF WORK UNDER DMEA 3060, SHINARUMP GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH.

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

DOCKET 3060

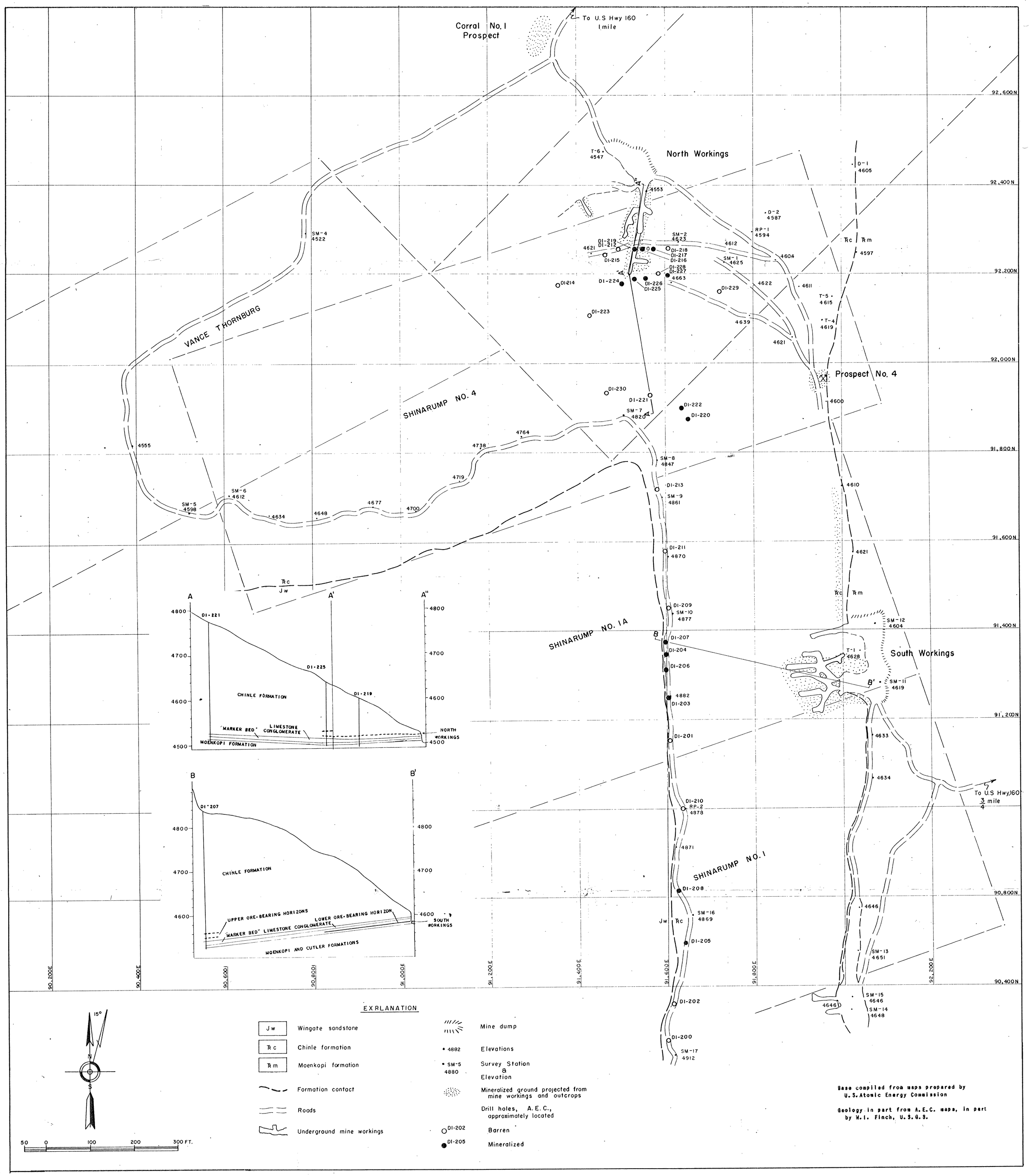


Figure 2. MAP AND GEOLOGIC SECTIONS OF THE SHINARUMP GROUP OF CLAIMS, SEVEN-MILE AREA, GRAND COUNTY, UTAH

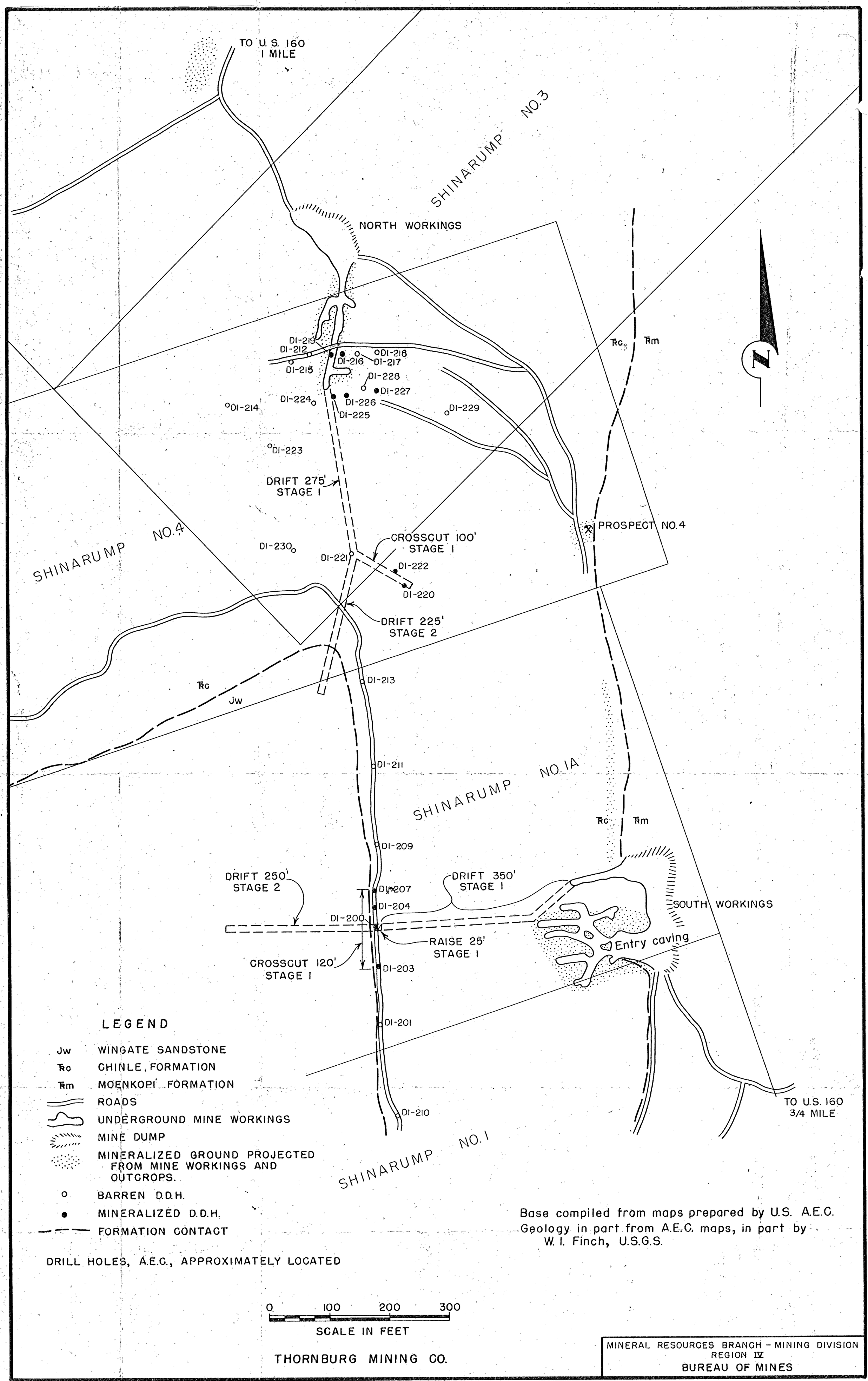


FIGURE 2 - PLAN MAP, SHOWING PROPOSED EXPLORATION, SHINARUMP CLAIMS, GRAND COUNTY, UTAH (DMEA 3060)