DMEA Form 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

OFFICIAL DOCKET FILE

DMEA NO. 4704

Application (Denied
(Withdrawn
(After disposition, delete items not applicable)

Contract (Terminated - not Certified
(Cancelled
(Terminated - Certified
(Royalty Agreement

This is the official contract file containing all official records of the project. The records contained in the files are checked and are arranged in this order:

Left Side

Interim Royalty Audits
Reports of Royalty Review
Certification of Discovery
Certificate of Audit (Final)
Interim Audit(s)
Report of Review
Termination Notice or Agreement
Recision Notice
Assignment of Contract
Contract Amendments (latest on top)
Contract with all exhibits and annexes
Owner's Consent to Lien
Subordination Agreement
Leases and assignments of leases
Application and attachments
(3) Envelope for maps

Right Side

Project summary
Work completed analysis
All other material is filed in chronological order with correspondence including the following reports as checked:

Final Field Team Report (Tab)
Operator's Final Report
(2R) Interim Reports
(2R) Operator's monthly reports and all attachments (latest on top)
On-site Exam Report(s) (Tab)
(4) Settlement Sheets

When the volume of records is expected to warrant additional folders, or when convenience of reference warrants separate folders for certain records, they should be set up in this order:

Left Side

Folder No. 2: (In chron. order) Interim Summary Reports by W. O. Engineers

Right Side

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

Folder No. 3: Maps (Use pocket folder or envelope. Fold maps with title block out and show reference to related document or correspondence.)

Folder No. 4: Settlement Sheets

Folder No. 5: Drill Logs

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

OFFICIAL FILE COPY
DMEA
RECEIVED APR 15 1957

DATE	INITIALS	CODE
4/15	C	220
4/16	Cheny	700

April 10, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA-4704 (Uranium) Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming

Enclosed, to be made a part of the application, are the original and two copies of the following:

1. Letter, dated April 1, 1957, from Eugene W. Grutt, Jr., AEC, which reports the chemical assay results of three samples; radiometric assays for which were submitted with the application.

2. Letter, dated April 7, 1957, from J. L. Starnes, transmitting Item 1 above.

One copy of the enclosed correspondence is being included with the copy of the application retained in our file. Also enclosed is a copy of our reply to Mr. Starnes' letter of April 7, advising the approximate date as to when he may expect an examination of his property.

By J. W. Townsend
Alternate Acting Executive Officer

Enclosures

2 copies returned to Reg. III

OFFICIAL FILE COPY
DMEA
RECEIVED APR 15 1957

DATE	INITIALS	CODE

224 New Customhouse
Denver 2, Colorado

April 10, 1957

Mr. Joel L. Starnes
P. O. Box 52
Lusk, Wyoming

Re: Docket DMEA 4704 (Uranium), Joel L. Starnes
(Silver Cliff Mine), Niobrara County, Wyoming

Dear Mr. Starnes:

The chemical assay results which were forwarded by your letter of April 7, 1957 have been sent to our Washington Office, DMEA, to be made a part of your application.

In answer to your inquiry as to when you might expect an examination of your property, an inspection of an Applicant's property is usually made 30 to 60 days following the date of receipt at this office of a complete application. Requests for additional information, increased work load, and property inaccessibility all tend to lengthen this time estimate.

You are assured, however, that sufficient prior notice of the impending inspection will be sent you so that arrangements may be made accordingly.

Very truly yours,

Original signed by
J. W. TOWNSEND

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

MHM/vj

cc: Sec. Opr. Comm. (2)
E. N. Harshman
J. F. Shaw (2)
Docket
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED APR 15 1957

DATE	INITIALS	CODE

DMEA
DEPARTMENT OF THE INTERIOR
APR 9 - 1957
REGION III
DENVER, COLORADO

April 7, 1957
J. L. Starnes
P.O. Box 52
Lusk, Wyoming

Defense Minerals Exploration Administration
224 New Customhouse
Denver, Colorado

Subject: DMEA 4704

Gentlemen:

I am forwarding the chemical results of samples F-45521 through F-45524 to you for your verification. The radiometric results were enclosed with my application.

I would be interested in knowing when I might expect the Field Team on their visit to the property.

Very truly yours,

J. L. Starnes

J. L. Starnes

Dont know about 10 ahead of him
EMH

WO

UNITED STATES
ATOMIC ENERGY COMMISSION
CASPER BRANCH, DENVER AREA OFFICE
P.O. BOX 1891
CASPER, WYOMING

DMEA
DEPARTMENT OF THE INTERIOR
APR 9 - 1957
REGION III
DENVER, COLORADO

April 1, 1957

IN REPLY REFER TO:
CBO:EWG:et

Mr. J. L. Starnes
Box 52
Lusk, Wyoming

Dear Mr. Starnes:

Following are the chemical assays recently returned to us from Denver:

Field No.	cU%
F-45521	1.96
F-45523	.078
F-45524	.046

eU% assays had previously been submitted to you. These were samples collected by Howard Geslin of this office.

Very ~~truly~~ yours,

Eugene W. Grutt, Jr.
Chief, Casper Branch Office

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DMEA
RECEIVED APR 15 1957

DATE	INITIALS	CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

March 25, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 28 1957

DATE	INITIALS	CODE

Memorandum

To: Secretary to the Operating Committee, ~~DMEA~~

From: DMEA Field Team, Region III

Subject: Application for DMEA Aid (Uranium) Joe L. Starnes (Silver Cliff Mine) Niobrara County, Wyoming

Enclosed are the original and two copies of the subject application and its letter of transmittal dated March 18, 1957, from Joe L. Starnes. One copy of the application is being retained in our file.

Also enclosed for return to the applicant when checked against the lease forms submitted under Docket 3735 are the original lease forms pertaining to the property proposed for subordination.

The applicant proposes to explore a mineralized target area by sinking approximately 150 feet and drifting 400 feet at a total estimated project cost of $30,742.76. You will note that $2,488.04 of this amount may be construed as rehabilitation work.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures

EMH

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 28 1957

DATE	INITIALS	CODE

DMEA
DEPARTMENT OF THE INTERIOR
MAR 20 1957
REGION III
DENVER, COLORADO

March 16, 1957
Joel L. Starnes
P.O. Box 52
Lusk, Wyoming

DefenseMinerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

Gentlemen:

I am herewith resubmitting new and additional information pertaining to past application under Docket 3735.

It is my understanding that such action could save some time on everyones part rather than my submitting a new application.

I am forwarding the original lease forms with the required four copies. I would appreciate your returning them to me when the copies are checked against the originals. The copies are not as clear as I would have wished them to be.

Thanking you I remain,
sincerely yours,

Joel L. Starnes

Joel L. Starnes

PHOTOCPY.
WO (2)
DOCKET APPL.

WO.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

DMEA

DEPARTMENT OF THE INTERIOR
MAR 20 1957
REGION III
DENVER, COLORADO

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

Not to be filled in by applicant

Docket No. 4704
Metal or Mineral URANIUM
Date Received 3-28-57
Estimated Cost $30,742.76
Participation (Government %)

RECEIVED MAR 28 1957 DMEA

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Joel L. Starnes, P.O. Box 52, Lusk, Wyoming

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

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

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

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

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract All lands covered by accompening lease agreements. Lincoln and Butler Lease, 25 acres, recorded in Book 156 on page 56, Lusk, and the recently obtained lease from the Town of Lusk, recorded in Book 163 on page 345, Lusk, comprising about 71 acres.

(*b*) State any mine name by which the property is known. Silver Cliff

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

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

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

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

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

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

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

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

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

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

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

(*c*) The work will start within 10 days and be completed within 9 months from the date of an exploration project contract.

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

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

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

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

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

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

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

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

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

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

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

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated [redacted], 195[redacted]

[redacted]

By [redacted]

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

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

4-A.

This application is entered with additional information obtained after applicants previous application for assistance was rejected.

Applicants previous application under " Docket Number 3735 " was entered March 28, 1955 and rejected on August 11, 1955.

Applicant has renovated the lower tunnel workings and has obtained additional property.

The accessibility of all mine workings for examination purposes are excellent. Roads have been constructed to all portals and a dozer is at hand to remove any snow. Electric power and lights are installed through the lower tunnel workings and the winz. Track has been layed through the lower workings. The lower tunnel workings are timbered and a change room and a shelter house have been constructed at the lower tunnel portal.

4-B.

Two shipments have been removed since last application. These shipments were from the upper workings and would have no bearing on the applicants present exploration program.

4-C.

The property was drilled by the Bureau of Mines in 1952 and it was the general opinion that the primary uranium mineralization was nonexhistent or too sporadic in occurrence to be of prime interest.
I have recently obtained new information from old workings that I have renovated and also from new workings that contradicts certain previous reports regarding the primary uranium mineralization of this property.

I beleive a major channel whereby through hydro-thermal activity, ascending primary uranium solutions did course and deposit has been uncovered. Pitchblende and autonite are present for identification within a friable schist but not in sufficient quanity to produce good commercial ore. All present workings are above the water table.

I beleive the uranium minerals through water action within the acidulous rock dispersed and decended leaving only remnant remains. These remains appear at times as chimneys or shoots.

The width of abnormal radio activity in the tunnel level is two feet or better. Here samples averaging 0.86 to 1.48% U_3O_8 can be obtained. Sinking 47 feet in the winz the width of abnormal radio activity is better than 50 feet with many rather tight parallel slips. The length of abnormal radio activity on the tunnel level is now exposed for better than 60 feet.

I sincerely beleive the target to be the primary mineralization below the water table with some thought of locating a zone of secondary enrichment near the table itself.

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4-C. contd.

Considering all phases of exploration I would prefer to sink within the mineralized area from the bottom of the winz and to drift with the mineral. Drifting in the applicants opinion would more thoroughly expose any exhisting chimneys or pipes and the information obtained would be more reliable for any continued program.

4-C. This action could be compared with the cost and the satisfaction of drilling to formulate any specific program of exploration. The applicant feels that an accompaning or combined proposed drilling program would at this time confuse the situation or possibly burden the applicants goal. This course of action could be discussed with the field team after their inspection of the property.

4-D.

The accessibility of the property is stated in 4-A. The distance to shipping is 74 miles to Edgemont, South Dakota. Supply and residence points are at hand.

4-E.

Timber and mine supplies have to be transported into Lusk. All other items are at hand.

5-B.

The applicant wishes to follow the mineral down and below the water table and to drift with the mineral therefrom. From water table surveys in the immediate area the applicants program is designed to establish this contact and to explore for a good commercial deposit. Accompaning sketches and cross sections included describe such features as contacts, veins, and the outlined work.

5-D.

The applicant is well experienced with all phases regarding the property and the work. The applicant desires to work and to also supervise such action.

6.

Estimate of costs are listed on accompaning paper.

(6). **Preliminary work needed on the property prior to sinking.**

1. Leveling exhisting track and cleaning water ditch.
2. Enlarging and re-timbering winz entrance.
3. Enlarging and re-timbering headframe and bin.
4. Enlarging and re-timbering exhisting 47 feet of winz.

Labor:		
	4 men, $1.87 per hour, $388.96 per week, 4 weeks, - - - - - -	$1555.84
Materials:		
	Timber -	$ 300.00
	Gas and oils -	150.00
	Electric power -	40.00
	Powder, fuse, and caps -	65.00
	Drill steels -	37.20
		$ 592.20
Rentals:		
	Drill -	$ 80.00
Overhead Expense:		
	Insurance and taxes -	$ 260.00
	Total estimated cost of preliminary work. - - - - - - - - -	$2488.04

(6). Sinking to a maximum depth of 150 feet from bottom of winz.

Labor:

4 men, $1.87 per hour, $388.96 per week, $1555.84 per month, 4 months - -	$6223.36
1 man, $1.50 per hour, $ 78.00 per week, $ 312.00 per month, 4 months - -	$1248.00
Total estimated labor - -	$7471.36

Materials:

Hoist line -	$ 65.00
2 mine cars -	200.00
Blower and vent line -	400.00
Timber -	600.00
Air line, valves, and fittings - - - - - - - - - - - - - - - -	153.00
Pump discharge line -	200.00
Wiring and fixtures -	210.00
Water line -	80.00
Gas and oils -	800.00
Electric power -	160.00
Powder -	315.00
Fuse and caps -	90.00
Drill steels -	65.10
	$3338.10

Rentals: (4 months).

Compressor -	$1440.00
Tram car -	500.00
Electric pump and assembly - - - - - - - - - - - - - - - - - -	240.00
Drill -	320.00
Total estimated cost of materials - -	$2500.00

Overhead Expense:

Insurance, taxes, and bookkeeping - - - - - - - - - - - - - -	$400.00
Sampling -	105.00
	$505.00

Total estimated cost - -	$13814.46
Total estimated cost per foot - -	$ 92.10

(6). Drifting 400 feet along the vein at the most suitable level.

Labor:

4 men, $1.87 per hour, $388.96 per week, $1555.84 per month, 4 months - -	$6223.36
1 man, $1.50 per hour, $ 78.00 per week, $ 312.00 per month, 4 months - -	$1248.00
Total estimated labor - -	$7471.36

Materials:

Vent line -	$ 185.00
Air line -	350.00
Wiring and fixtures -	200.00
Jackleg and mounting -	185.00
Gas and oils -	800.00
Electric power -	160.00
Powder -	604.80
Fuse and caps -	214.00
Drill steels -	65.10
Track -	430.00
Ties and crow -	75.00
Flat sheets -	200.00
	$3468.90

Rentals:(4 months).

Compressor -	$1440.00
Tram car -	500.00
Electric pump and assembly - - - - - - - - - - - - - - - - - -	240.00
Drill -	320.00
Total estimated cost of materials - -	$2500.00

Overhead Expenses:

Insurance, taxes, and bookkeeping - - - - - - - - - - - - - -	$ 400.00
Sampling -	200.00
Engineering report -	200.00
Incidental expenses -	200.00
	$1000.00

Total estimated cost - -	$14440.26
Total estimated cost per foot - -	$ 38.10

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(6). **EQUIPMENT NOW ON PROPERTY AND WHICH WILL BE FURNISHED BY APPLICANT FOR ANY USE THE EQUIPMENT IS SUITABLE TO.**

120' Ingersol Rand Compressor
500' 2" Airline, fittings, valves, tanks
800' 2½" Tubing and connections, valves
600' #2 (3) phase waterproof electrical cable
600' #8 weatherproof electrical wire and fixtures
Sullivan gear hoist with reversing 7½ H.P. motor
Switches and fuses
Muck buckets, timber car, dolly car, and ore cars.
1" G.D. S-55 hammer drill and steel
1" G. D. stoper and steel
Short jackleg
7/8" #754 Swede hammer drill and steel
30' 7/8" Swede extension steel
50' 2½" Rubber airline
100' 5/8" Rubber airline
Water tank, pressure tank, and filter tank
30 gallons of rock drill oil
Kohler light plant
Portable belt conveyor loader
2 dump trucks and trailers
Bulldozer
Hand tools
Some heavy timbers, nails and saws
700' Track
Building and house trailer
Powder, fuse and caps, spitter wire
Counters
Lamps and carbide
Light charger and battery charger
Stoves and fuel oils
Chains, ropes, cables, and shivs
Dumping plate
Station bells
Blower fans, 150" 12" line
Hats, boots, etc.,

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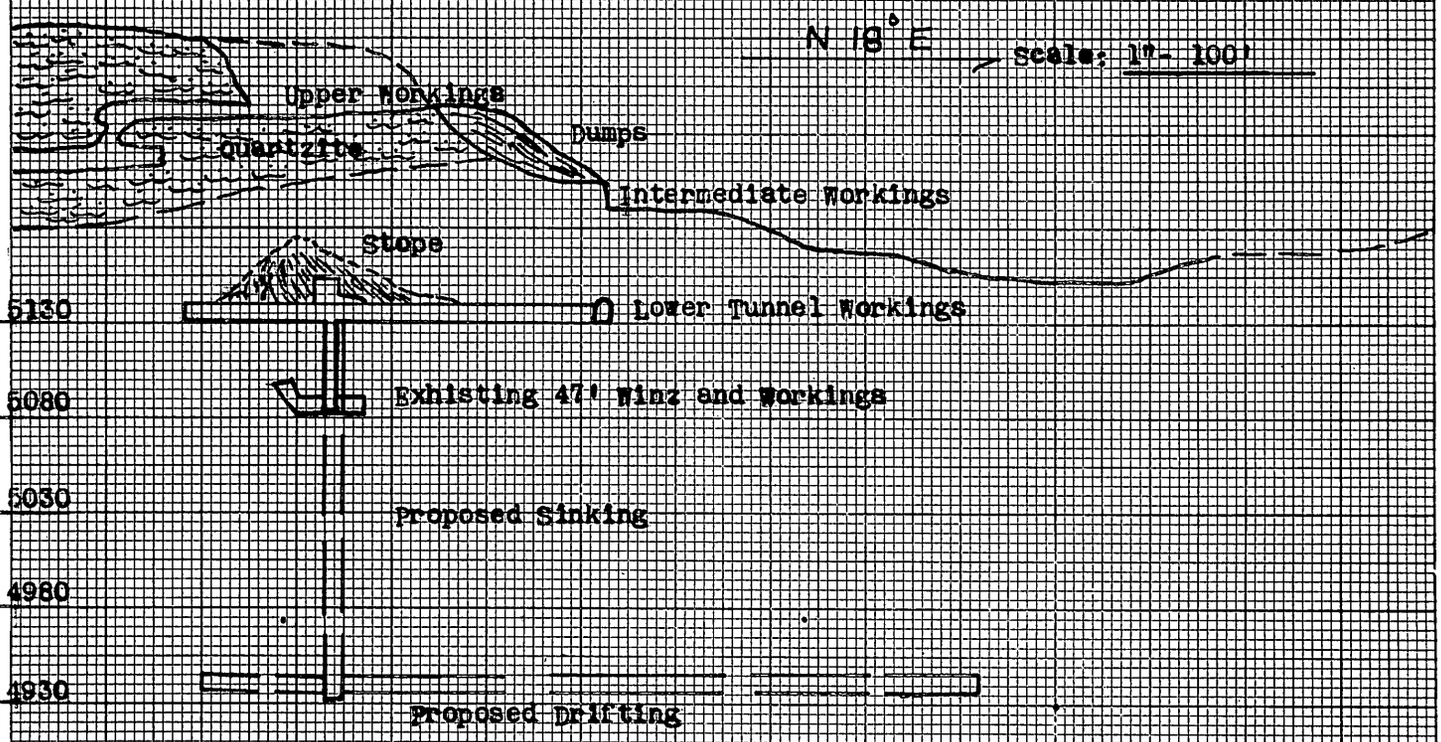
CHARLES BRUNING COMPANY, INC NO. 673 CONSTRUCTOR'S CROSS SECTION
10 x 10 to half inch.

From: LONGITUDINAL PROJECTION ALONG THE
SILVER CLIFF FAULT
R.M.E. 1002



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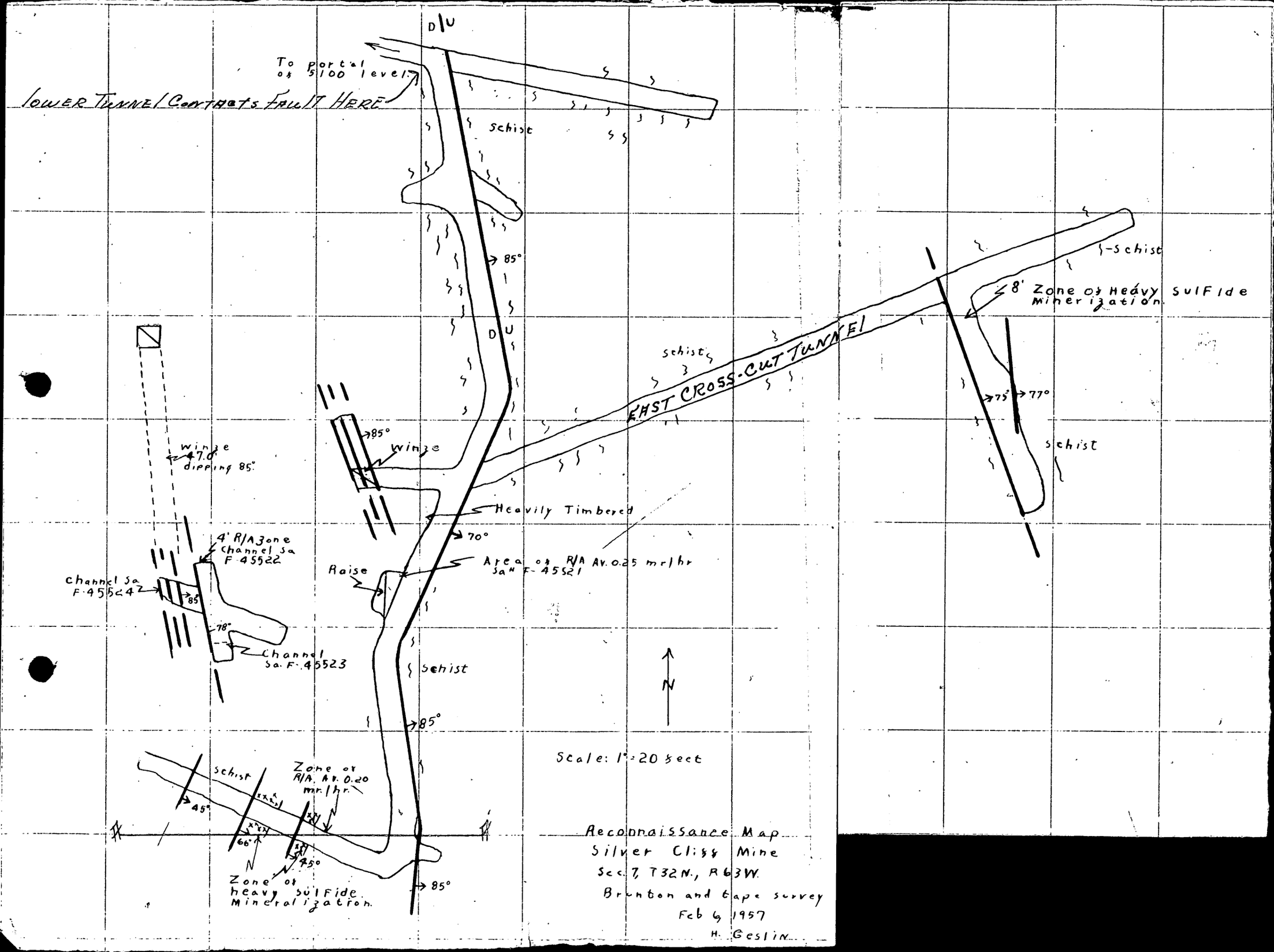
D U
To Portal of 5100 level.
Lower Tunnel Contacts Fault Here
Schist
85°
D U
East Cross-Cut Tunnel
Schist
Schist
8' Zone of Heavy Sulfide Mineralization.
75°
77°
Schist
85°
Winze
Winze 47.0' dipping 85°
Heavily Timbered
70°
4' R/A Zone Channel Sa F 45522
Area of R/A Av. 0.25 mr/hr Sa# F-45521
Raise
Channel Sa F 45542
85°
78°
Channel Sa. F. 45523
Schist
N
85°
Scale: 1" = 20 feet
Schist
Zone of R/A. Av. 0.20 mr/hr.
45°
66°
45°
Zone of heavy sulfide Mineralization.
85°
Reconnaissance Map
Silver Cliff Mine
Sec. 7, T32N., R63W.
Brunton and tape survey
Feb 4 1957
H. Geslin

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RECEIVED MAR 28 1957

DATE	INITIALS	CODE

UNITED STATES
ATOMIC ENERGY COMMISSION
CASPER BRANCH, DENVER AREA OFFICE
P.O. BOX 1891
CASPER, WYOMING

IN REPLY REFER TO:
EWG:mh

March 7, 1957

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DMEA
RECEIVED MAR 28 1957

DATE	INITIALS	CODE

Mr. Joe L. Starnes
P. O. Box 52
Lusk, Wyoming

Re: Your letter dated March 5

Dear Mr. Starnes:

Your letter addressed to Howard Geslin has been referred to this office for reply.

We have made radiometric assays of the samples collected by Mr. Geslin. Following are the results:

	Sample No.	CBO - eU
Tunnel	F-45521 -	1.912 -
	22 -	.034 -
	23 -	.064 -
Winz	24 -	.048 -

We expect to receive chemical analyses on two or three of these samples. When such analyses are available you will be sent an information copy.

Yours very truly,

Eugene W. Grutt, Jr.

Eugene W. Grutt, Jr., Chief
Casper Branch Office

NATURAL RESOURCES RESEARCH INSTITUTE
MONTANA SCHOOL OF MINES

REPORT OF ANALYSIS

Date July 16, 1956

No. 11379 (2398) Material Project

Submitted by E. A. Maxwell Date Received June 9, 1956

Walden, Colorado Analyzed for Uranium

Address

		U_3O_8				1.33%		
	Sample taken from bottom of winz while drifting away from winz. The mineral was a light brown material in a series of parallel slips.							

Analyzed by Nelson McKaig, Jr. Analysis Completed 13 July, 1956

Signed Nelson McKaig, Jr. Analysis Reported 16 July, 1956

Chemical Engineer

CL1-10

PRAIRIE PUBLISHING CO.—58525

CHEMICAL & GEOLOGICAL LABORATORIES

521 South Center St. P. O. Box 279
Casper, Wyoming

ANALYTICAL REPORT

From E. A. Maxwell Product Uranium ore
Address Walden, Colorado Date July 9, 1956
Other Pertinent Data

Analyzed by GAW Date July 13, 1956 Lab No. 11104

MINERAL ANALYSIS

U_3O_8, % by weight

Sample	Radiometric	Chemical
No.1 Right wall	1.20	1.41

Zone of R/A in
Stope Above Tunnel
Level. 25"

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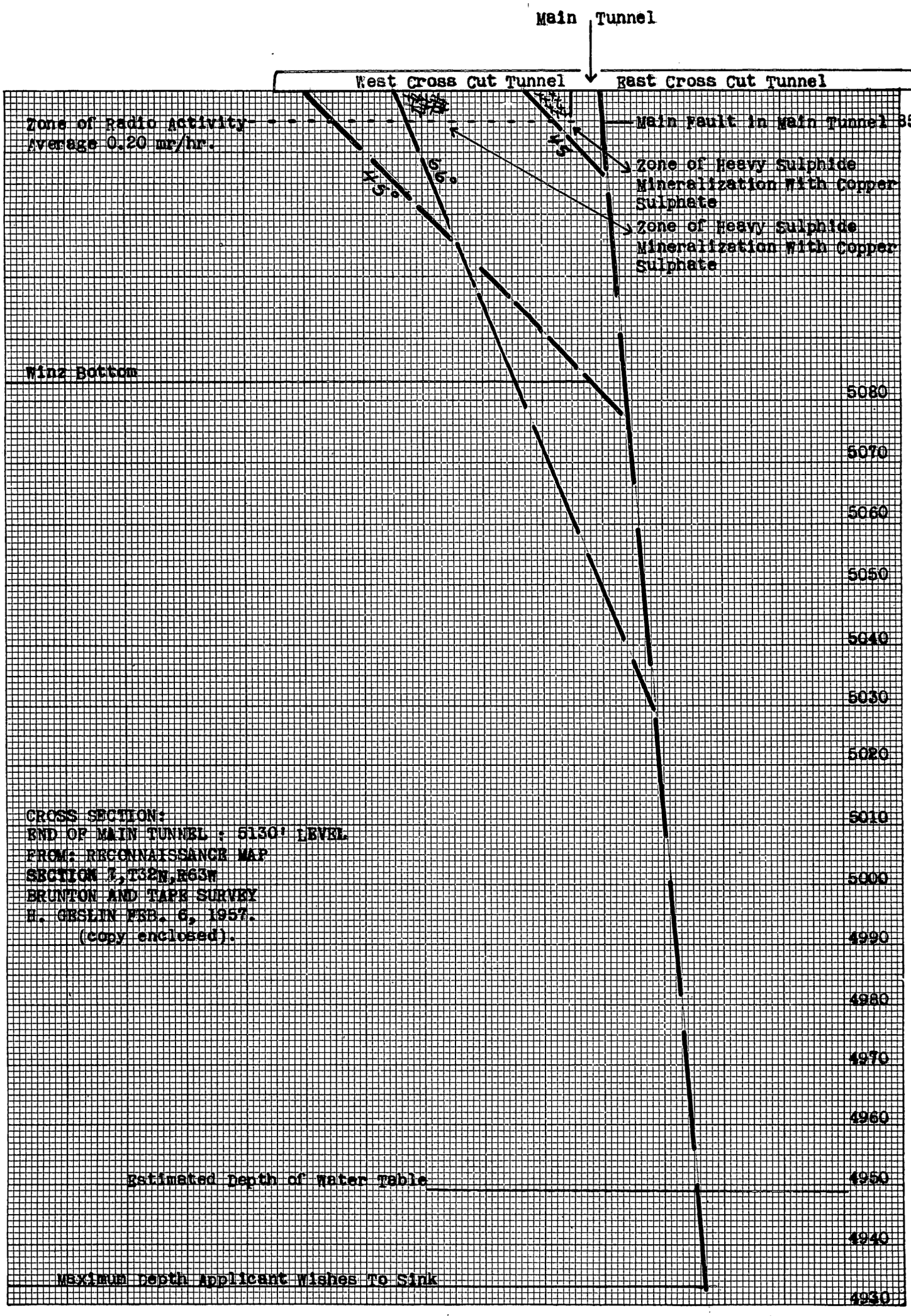
DMEA
RECEIVED MAR 28 1957

DATE	INITIALS	CODE

CHARLES BRUNING COMPANY, INC NO. 673 CONSTRUCTOR'S CROSS SECTION
10 x 10 to the half inch.



OFFICIAL FILE COPY
D M E A
RECEIVED MAR 28 1957

DATE	INITIALS	CODE

State of Wyoming, }
County of Niobrara } ss.

This instrument filed for record at 1:05 o'clock P.M., on 9th. day of March A.D., 1955, and duly recorded in Book 156 on Page 56.
Harold E. Rogers, County Clerk and Ex-Officio Register of Deeds. By
Deputy.

LEASE

183059

THIS INDENTURE, Made and entered into this 28 day of February, 1955, by and between HELEN F. LINCOLN and BUTLER CORPORATION, parties of the first part, hereinafter called the Lessors, and JOEL L. STARNES, party of the second part, hereinafter called the LESSEE, WITNESSETH:

THAT WHEREAS, Lessors are the owners of certain real property situate in the County of Niobrara, State of Wyoming, containing mineral deposits; and Whereas, said BUTLER CORPORATION is a defunct Wyoming corporation, and that Kathryn Lambert and Henry Seybold are the last acting and sole surviving Directors of said corporation, and statutory trustees; and

WHEREAS, the Lessee proposes forthwith upon execution of this lease to make application for loan from an agency of the United States Government and to explore and mine the minerals in and underlying said lands; and

WHEREAS, Lessors are willing to enter into a lease agreement with Lessee and have represented that they have full authority so to do.

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars, by the Lessee to the Lessors in hand paid, the receipt of which is hereby acknowledged, and in consideration of the promises, covenants, and agreements hereinafter set forth, the Lessors have, and by these presents do, lease and demise unto the Lessee the following described property, situate in the County of Niobrara, State of Wyoming, to-wit:

Commencing at a point on the East boundary line of the SW¼NE¼, Section 7, Township 32 North, Range 63 West of the 6th P.M., which point is a distance of 400 feet from the Northeast corner of said 40-acre tract; thence in a Southwesterly direction across said 40-acre tract to a point on the West boundary line of said tract 400 feet North of the Southwest corner of said 40-acre tract; thence South to the southwest corner of said 40-acre tract; thence East to the Southwest corner of Block 5, Silver Cliff Addition to the Northeast corner of said Block 6; thence North along the East boundary line of said 40-acre tract to the point of beginning, containing 15.3 acres, more or less;

Also,

Beginning at the northwest corner of Outlot "C", Silver Cliff Addition to the Town of Lusk, Niobrara County, Wyoming, which said corner is on the north and south center line of Section 7 North of and distant 400 feet from the legal center of said Section, thence north 10 feet to the center filament of Running or Niobrara Creek, thence downstream, following said Norbrara Creek to the South right of way line of the Chicago and Northwestern Railway and 50 feet distant from the center of said railway track as now constructed across Section 7 aforesaid; thence northeasterly along said right of way line to the east line of the SW¼NE¼ of said Section 7, and 9.5 feet south of the northeast corner (an iron pin) of said SW¼NE¼ of said Section 7; thence along the east line of said SW¼NE¼, south 0 degrees 15 minutes west 390.5 feet to the northeast corner of Outlot "C"; thence southwest to the point of beginning, containing 9.6 acres more or less, all in Section 7, Township 32 North of Range 63 West of the 6th P.M.

9.6

TO HAVE AND TO HOLD unto said Lessee, his heirs, executors, administrators, and assigns, for and during the term of one year, commencing at noon on the 10th day of January, 1955, and ending at noon on the 10th day of January, 1956.

Lessors covenants and agree to and with the Lessee as follows:

1. The Lessee shall have the right and option to renew this lease from year to year upon the same terms and conditions, by notifying the Lessors of his intention so to do, in writing, on or before the 1st day of December in each calendar year, by first-class mail, prepaid, addressed to Helen F. Lincoln, at

and then and there making payment of the sum of $500.00, payable $250.00 to Helen F. Lincoln and $250.00 to the Butler Corporation.

2. It is understood and agreed that the Lessee may obtain loans from an agency of the United States Government, and, in connection therewith, may agree to conduct operations in accordance with regulations from time to time prescribed; it is also understood that the Lessor in such event may be required to have no claim or lien upon the proceeds from the sale of minerals prior or superior to the claim of the lending agency. Lessors agree to at all times recognize claims of the agency of the United States Government under and by virtue of its lending agreement with the Lessee as paramount and superior to claims of the Lessors hereunder.

3. The Lessee shall have the right to contract with others to develop, explore and mine the demised premises, or to sub-contract such work or any part thereof, for the purpose of mining and extracting ores and minerals therefrom, either as a single operation, or jointly and in consolidation with other lands; subject, however, to all of the terms, covenants and conditions hereof.

Lessee covenants and agrees with the Lessors and each of them as follows:

1. To pay to the Lessors an amount equal to ten per cent. (10%) of the sale price of ores extracted and sold from the demised premises, less shipping and milling costs, to be paid 5% to Helen F. Lincoln and 5% to the Butler Corporation. The sale price shall include any bonus payment that may be made by the government, on sale of ore marketed.

2. Royalty payments shall be made on June 30 and December 31. Lessee shall be credited in accounting for royalties with the $500.00 payment made on any renewal or extension of the term hereof, and shall not be obliged to pay royalties otherwise due hereunder until such royalties exceed said sum of $500.00.

3. Lessee agrees to keep true, accurate and correct records and accounts of actual shipping costs, and to submit to lessors duplicate sales records showing the date and point of sale, the name of the purchaser, and the amount paid. The mill return statement shall be sent to Lessors promptly, reflecting each and every shipment.

4. In the event this lease is operated in conjunction with other mining properties, the Lessee promises and agrees to keep accurate, separate accounting of the ore extracted and shipped from the demised premises, and to produce such records for the inspection of Lessors or agents of the Lessors at all reasonable times.

5. To enter upon said premises, and to make immediate application for an exploration and production loan, and to

submit all data and information which may be required in connection therewith. In the event said application is not favorably acted upon on or before June 30, 1955, then and in such event, this agreement shall be null and void and of no further force or effect unless the Lessee shall on or before said date pay to Lessors the sum of $250.00. Lessee promises and agrees to keep Lessors advised from time to time of the status of his said loan application, and Lessors promise and agree to cooperate in gathering and submitting all information which may reasonably be required to evidence the Lessors' title to the demised premises, and authority to enter into this lease agreement.

6. Lessee promises and agrees to keep the premises in a clean and safe condition; to post proper notices upon the premises stating that the Lessors are not liable for debts contracted by the Lessee; to hold the Lessors harmless from all claims, debts, and demands whatsoever arising from accidents to employees and business visitors upon the demised premises; to make and keep available to Lessors proper surveys showing the location of all underground workings upon the demised premises and any adjoining mineral properties; to keep all ores extracted from the premises stockpiled on the demised premises in orderly and minerlike fashion until such time as the same may be shipped or marketed; to permit the Lessors, their agents or attorneys to enter upon said premises at all reasonable times for the purpose of inspection and for measurement or areas from which ores have been mined and removed; to take samples therefrom; to make surveys thereof, and for such other purposes as may be reasonably required to protect the rights and interests of the Lessors.

7. From and after the receipt of proceeds of a production loan, the Lessee agrees to engage actively in mining operations upon the premises, and to continue the same so long as ore can be produced therefrom in commercial quantities, by which the parties mean sold at a profit over and above the costs of

producing and marketing such ore sufficient in amount to yield a fair return to the operator and the Lessors, and to devote no fewer than 2,000 man-hours semi-annually to such mining. The Lessee may conduct the mining operations in the area and in the manner considered by him to be most suitable, but promises and agrees to conduct all operations in an approved, workmanlike fashion, whether underground, pit, or strip mining.

8. Lessee agrees to neither suffer nor permit any tax delinquency upon ores mined and shipped from said premises, but to pay all taxes due thereon, and to charge the Lessors their proportionate share of such taxes in making the royalty accounting hereinabove provided for.

9. Except in connection with the application for exploration and production loan to be made to an agency of the United States, Lessee agrees to permit no person to acquire any interest or possession in, to, or of the demised premises except upon transfer of interest by inheritance, devise, assignment, sale, or succession by operation of law to the right, title, and interest of some one or more of the parties hereto.

10. Upon termination of this Lease, the Lessee agrees to surrender possession of said premises, peaceably, to the Lessors, leaving the demised premises in as good order and condition as the same were entered upon, with all new drifts, tunnels and passages, drained and cleared of loose rock and rubbish, without notice or demand, and to remove all personal property which Lessee may place upon said premises within thirty (30) days after termination hereof; provided that upon termination of this Lease, the Lessors shall have a lien upon tools, machinery and equipment of the Lessee upon the premises to the extent of amounts due as royalties hereunder.

It is mutually agreed

1. That upon the violation of any covenant or condition herein contained the party claiming right to terminate for breach shall send to the other party written notice setting

forth the particular matter or matters for which default is declared, and giving the other party 30 days' notice of election to terminate in the event default as specified in said notice shall not, in the interim, have been fully cured. If the Lessee, pursuant to such notice, is required to quit the premises, he shall within 10 days from the time of receipt of such notice set forth whether he asserts any counterclaim or demand against Lessors arising out of the lease agreement, and, if he fails so to do, it shall be conclusively presumed that no such counterclaim or demand exists.

2. If during the term hereof, the Lessors shall fail to pay taxes, or to discharge any lien upon the property which would in any manner affect the right of the Lessee to remain in possession, the Lessee may, at his election, after notice to the Lessor pay and discharge such taxes or liens and become subrogated to the rights of the holder or holders, and apply royalties then accrued or to become due thereafter to reimbursement of monies advanced for said purposes; or, after notice to the Lessors he may, as assignee of such encumbrance, acquire rights in and to said property adverse to those of the Lessors and upon enforcement thereof, may become the owner of the demised premises as though no attornment had taken place.

3. It is agreed and understood that the Lessee may sell and assign his interest hereunder upon the condition and with the understanding that at the time of such sale and assignment the Lessee shall pay to the Lessor an amount equal to ten per cent (10%) of the sale price, covering all items involved in the transaction except the personal property and equipment belonging to the Lessee. Lessors upon such payment agree to consent to the assignment of this lease during the term of this lease or any extension or renewal hereof.

4. It is agreed that time is the essence of this agreement,

and that no waiver of breach of any of the covenants or conditions hereof shall be deemed to be a consent to future and subsequent default.

(3) It is further understood and agreed that the provisions hereof shall be binding upon the parties hereto, their heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF the parties hereto have executed this instrument as of the day and year first above written, the Lessors by their hands and seals as to the individual owners, and the legal representatives as to the corporate owner, and the Lessee by his hand and seal.

Conveying right + 50% of royalty rights

Helen F. Lincoln SEAL
HELEN F. LINCOLN

BUTLER CORPORATION, a defunct Wyoming Corporation

By _____

And _____
The Last Acting and Sole Surviving Directors of said Butler Corporation, and statutory trustees

LESSORS

_____ SEAL
JOEL L. STARNES

Lease payment
Bk. 156 Pg. 56

NUMBER

99-187

Lease payment
Bk. 156 Pg. 56

NUMBER

99-187
1061

Pay to the order of BUTLER CORPORATION; MARY SEYMOLDT and MRS. SUE JONES, as joint tenants, with right of survivorship.

LUSK, WYOMING, November 30, 19 56

TWO HUNDRED FIFTY and no/100 $ 250.00 DOLLARS

LUSK STATE BANK AT LUSK
LUSK, WYOMING

By _____
Joel L. Starnes Trustee

STATE OF WYOMING)
COUNTY OF NIOBRARA) ss

Before me this day personally appeared HELEN F. LINCOLN, known to me to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as her free and voluntary act and deed; that she is a single woman; and that she executed said instrument for the uses and purposes therein set forth.

Given under my hand and seal this _____ day of _____, 195____.

My commission expires: _____

_____
Notary Public

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss

Before me this day personally appeared Kathryn Lambert known to me to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as statutory trustee of Butler Corporation, a defunct corporation; that she is one of the last acting and sole surviving directors of said corporation; and that she executed the foregoing instrument on behalf of said corporation as her free and voluntary act and deed as such trustee.

Given under my hand and notarial seal this _____ day of _____, 195____.

My commission expires:

_____
Notary Public

STATE OF ~~WYOMING~~ CALIFORNIA)
COUNTY OF LOS ANGELES) ss

Before me this day personally appeared Mary Seyboldt known to me to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as statutory trustee of Butler Corporation, a defunct corporation; that she is one of the last acting and sole surviving directors of said corporation; and that she executed the foregoing instrument on behalf of said corporation as her free and voluntary act and deed as such trustee.

Given under my hand and notarial seal this _____ day of _____, 195____.

My commission expires:

_____
Notary Public

STATE OF COLORADO)
City and County of Denver) ss

The foregoing instrument was acknowledged before me this _____ day of January, 1955, by JOEL L. STARNES.

Witness my hand and Notarial seal.

My commission expires:

_____
Notary Public

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 28 1957
DATE | INITIALS | CODE

(Redacted) This instrument filed for record at 11:5 o'clock A.M.
STATE OF WYOMING) 17th day of October A. D. 1956 and duly recorded in
)SS: Book 163 on page 345.
COUNTY OF NIOBRARA) County Clerk and Ex-Officio Register of Deeds.

MINING LEASE FOR ALL MINERALS EXCEPT HYDROCARBONS

1191-420

THIS LEASE AGREEMENT, made and entered into, this _____ day of _____ 1956, by and between the TOWN OF LUSK, a Municipal Corporation of Lusk, Niobrara County, Wyoming, hereinafter referred to as Lessor, and _____ of _____ hereinafter referred to as Lessee, WITNESSETH:

That the said lessor, in consideration of the rents, royalties and other benefits reserved or payable to the lessor as provided for herein, has leased, let and demised, and by this instrument does lease, let and demise exclusively unto the lessee for the term of years hereinafter stated, all of the following described lands and premises situate, lying and being in the County of Niobrara, State of Wyoming, to-wit:

> A tract of land lying and being in the NW¼NE¼ and NW¼ of Section 7, Township 32 North, Range 63 West of the 6th P.M., Niobrara County, Wyoming, and more particularly described as follows:
>
> Beginning at a point where the Chicago and Northwester Railway Company right-of-way intersects the East line of the NW¼NE¼ of said Section 7, thence Northerly along the East boundary line of said NW¼NE¼ of said Section to the Northeast corner of the NW¼NE¼ of said Section 7, thence in a Westerly direction along the North line of said Section 7 a distance of 1986.8 ft.; thence in a Southerly direction (along a line parallel to and 1691.4 ft. distant from the West boundary line of said Section 7: a distance of 1986.8 ft. to the North right-of-way line of the Chicago and Northwestern Railway Company right-of-way line; thence in a northeasterly direction along the north boundary line of said Chicago and Northwestern Railway Company right-of-way to the point of beginning; said tract of land containing 70.9 acres, more of less.

Reserving, however, unto the said Lessor the right to lease the surface of such lands not so needed for mineral development, for grazing purposes. This mining lease covers and includes all of the lands in which lessor owns any mineral rights (excluding oil and gas) included in or comprising a part of, or in any way pertaining to that tract of land, above described, the accurate and legal description of which lands may be obtained from the records in the office of the County Assessor and and County Treasurer of said County and from the record chain of title to said lands as reflected by the records of the office of the County Clerk, Niobrara County, Wyoming, to all of which records reference is hereby made for all purposes of this agreement, and the description of lands contained in said records is by such reference incorporated into and made a part of this agreement.

It is expressly agreed and understood that lessee herein is not authorized to explore for or produce oil and gas from said lands but that all other minerals

of every nature and kind are included in this mining lease, and lessee shall be and is authorized to explore for, mine, produce and market all minerals which may be discovered and produced from said lands other than oil and gas and their related liquid hydrocarbon substances.

TERM: This lease is for a term of, and said lands are leased, let, demised and granted unto the said lessee for said mining purposes, for a term of TEN YEARS after date hereof, and so long thereafter as mining operations are carried on on said lands with reasonable diligence, or minerals are produced from said lands, or any part thereof, and the rents and royalties herein reserved to said Lessor shall be paid thereon, unless this lease shall be sooner terminated by virtue of any other applicable provision of this lease agreement.

As part of the consideration from lessee to lessor, this lease is granted upon the express condition that within ninety (90) days after date hereof lessee shall commence some work to be done in the nature of geological work, exploratory work or other work on said premises for the purpose of evaluating said lands, or a part thereof, for mining purposes, and any and all such geological or exploratory work shall be carried on in accordance with good mining practices in a good and workmanlike manner and with as little disturbance and damage to the surface of said lands as may reasonably be necessary in balance with good mining practices.

ANNUAL RENTAL: The said Lessee covenants and agrees to pay to said Lessor the sum of _____ DOLLARS upon completion and execution of this lease agreement, the receipt and sufficiency of which is hereby acknowledged by lessor, which SUMS shall operate as the first years rental under this agreement, and lessee shall on or before this date each year, so long as this agreement shall remain in force and effect under its terms, pay to the Town of Lusk the sum of [illegible] FIFTY DOLLARS, which payment shall operate as the annual rental for the consideration of said lease, and by payment of like amounts in like manner, this lease shall continue for a term of TEN YEARS or as long as all conditions as set forth in the "TERM" paragraph of this agreement are met and performed, and shall entitle the Lessee, upon Lessee's full compliance with all other terms, agreements and stipulations herein contained, to possession and use of the herein described leased premises and lands for such mining purposes as herein set forth. Such rental is conditioned on any royalties due said TOWN during such current year;

It is expressly agreed and understood between the parties hereto, that failure to pay such advanced rentals as set forth above shall cancel and terminate this lease on the due-date of said rentals.

It is further agreed and understood between the parties hereto, that the Lessee herein may, upon giving the Lessor thirty days notice, in writing, surrender this lease and upon such surrender all obligations of the lessee to the lessor shall cease, provided however that Lessee shall before such surrender, return the surface of the lands described in this agreement to an as-is of this date condition, leveling the land to a usable surface if requested by said Lessor.

ROYALTY: The said lessee covenants and agrees to pay to the said lessor as royalty eight percent (8%) of the value at the mine of all ore and minerals removed, shipped and marketed from the above described lands (including those described by reference to public records) and in this regard lessee, by acceptance of this agreement, covenants and agrees to keep complete and accurate records and accounts of the quantities of all ore mined and extracted from said lands, of the proceeds resulting from the sale thereof (which proceeds less transportation, milling and other costs incurred after removal from the mine, shall be used as a basis for determining value of such ore and ore minerals at the mine) and to keep said records available to the said lessor at any and all reasonable times as such place as the records of lessee may be kept and the said lessee shall pay to the said lessor the lessor's share of the proceeds from all ore and minerals extracted, shipped and sold from said premises with sixty (60) days after the date upon which the lessee shall receive payment of the proceeds resulting from the sale thereof, and accompany such payment to lessor with a statement showing the quality of ore, the valuation basis thereof, the place to which the same is shipped and sold for which such accompanying royalty payment is made. At the option of lessee, all settlement for royalty shall be made upon the assay value of the mineral in the ore based upon such value at the mine. It is expressly understood and agreed that no part of or portion of any discovery bonus, haulage bonus or other subsidy or allowance shall be included in ore value for the purpose of computing and paying lessor's royalty.

The said lessor covenants and agrees that the said lessee, its agents, successors and assigns, shall have and are hereby given and granted exclusively the right at all times and at any time and from time to time to enter upon the lands committed to this agreement and all of the separate parts and parcels thereof, together with access across all other lands owned or controlled by the said parties lessor in the vicinity of the lands committed hereto, whether such lands be owned

in fee or covered by lease or other right in order to have unrestricted access to the leased premises for the purpose of making studies and surveys thereon and for the purpose of exploring for, mining, producing, processing, transporting and marketing minerals and ore from said lands (excluding oil and gas).

TAXES: It is expressly understood and agreed that Lessor will pay all taxes levied and assessed against said lands, and that Lessee shall pay all taxes levied and assessed upon the minerals produced, saved or marketed from said lands together with all taxes levied or assessed against buildings, structures, equipment, machinery or other property placed upon the lands by the Lessee, whether on the surface or underground.

In making payment of lessor's royalty hereunder, the same may be made by check of lessee drawn on lessee's depository bank and may be mailed to the address of lessor indicated below or to such other address as lessor may furnish lessee from time to time by written notice in advance of the date upon which any such check may be mailed. In addition to the method of payment authorized herein, the said lessor hereby designates as a depository bank the LUSK STATE BANK at Lusk, Wyoming, and hereby authorized the lessee to make any and all payments due lessor by tendering to said bank for credit to the account of lessor therein any and all sums becoming due hereunder, which depositary bank is and shall be deemed to be the agent of lessor.

TITLES: Lessor makes no general warranty of title except lessor does covenant and agrees to defend the title to the lands committed to this agreement against the claims of any and all persons whomsoever claiming by, through or under the undersigned party or parties lessor, it being expressly understood and agreed that this lease agreement including any and all after acquired title, if any, which may be acquired by the parties lessor, or any of them, and shall be deemed to be included in and to have been acquired for the benefit of this lease.

By acceptance hereof lessee is deemed to have agreed that if at the expiration of the primary term of this lease no mineral has been discovered or encountered in paying quantities and there is no apparent reason for carrying on further mining operations, that the said lessee will execute a recordable instrument, which may be recorded by lessor for the purpose of showing that the period and term of this lease has expired without reason for further operations thereon in order that the record title to said lands may be cleared at such time by the recordation of such release instrument.

This agreement is binding upon and shall inure to the benefit of not only the parties hereto but the respective heirs, successors and assigns of all parties but is further expressly understood and agreed that no assignment of any interest in said lands or of the royalty payable to lessor hereunder shall be binding upon lessee unless and until the said lessee or then owner of the lease shall be furnished with notice of such assignment and a certified copy of the recorded original transfer from the owner at least thirty (30) days in advance of any date upon which any royalty payment becomes due, and in the event that there shall be any dispute concerning the title of the said parties lessor or in the event that additional persons may claim any royalty amounts due from lessee to lessor under the terms hereof, lessee shall be entitled to suspend or pay into a suspense account any and all such amounts of royalty as may be subject to dispute without liability for interest or payment unless and until such dispute be settled as among the claimants to same.

Lessor covenants and agrees that the said lessee shall have peaceable possession of said lands and premises for all purposes hereof, and covenants and agrees upon request to land to lessee such abstracts of title, deeds, maps and other papers or documents as lessor may have or may have access to for the purpose of simplifying title investigation by or on behalf of lessee, and the said lessor covenants and agrees to cooperate with the lessee in respect to all operations which may be carried on on said lands, or any part thereof, for the purpose of furthering the development and operation of said lands for mining and mineral purposes.

Cancellation of this mining lease by the parties lessor shall not become effective or operative unless and until notice of such cancellation shall be given to lessee by registered mail, return receipt requested, specifying the particular respect in which lessee is purported to be in default, and allowing the lessee sixty (60) days thereafter in which to make performance in accordance with the requirements hereof.

In the event that the interest of parties lessor in any of the lands committed hereto shall be less that the full and undivided fee ownership of the affected minerals, then and in that event the rents, royalties and other benefits payable to lessor hereunder shall be reduced proportionately and lessor shall be entitled to receive only that proportion of the reserved royalty and other benefits which his or their ownership of such minerals bears to the whole and undivided fee ownership thereof.

THE LESSOR, herein, The TOWN OF LUSK, owns on the above described lands, certain water wells, the water from which is used for the Municipal Water System of said Town; and the LESSEE herein expressly agrees to protect and preserve this source of water for the said TOWN OF LUSK, from all contamination and waste;

SAID LESSOR reserves the right to lease the surface of said lands for grazing purposes and LESSEE shall not unduly interfere with such use of the surface.

IN WITNESS WHEREOF and in accordance with a RESOLUTION duly passed this date, the TOWN OF LUSK has caused this Lease to be executed by its Mayor, attested by its Clerk and its Corporate Seal to be hereto affixed this, the 16th. day of October, 1956.

THE TOWN OF LUSK

by_____ITS MAYOR

_____

APPROVED:

_____

City Attorney

STATE OF WYOMING)
:SS
COUNTY OF NIOBRARA)

On this, the 16th. day of October, 1956, before me personally appeared JOE N. JONES, to me personally known, who, being first duly sworn, did say that he is the MAYOR of the TOWN OF LUSK, a Municipal Corporation; and that the SEAL affixed to said Instrument is the CORPORATE SEAL of the said TOWN OF LUSK; and that the said instrument was signed and sealed on behalf of said TOWN OF LUSK by authority of a Resolution of the Town Council of said Town, a copy of which Resolution is hereto attached; and the said JOE N. JONES acknowledged the said instrument to be the free act and deed of the said TOWN OF LUSK.

WITNESS my hand and notarial seal this 16th. day of October, 1956

_____
Notary Public

My commission expires

BE IT KNOWN: That an Adjourned Meeting of the Town Council of the Town of Lusk, was held at the office of the City Clerk in Lusk, Wyoming the evening of October 16, 1956. The Mayor, all Councilmen and City Clerk J. F. Costlow were present. The following RESOLUTION was presented to the COUNCIL and on motion of Councilman Petersen seconded by Councilman Kaar was adopted by said TOWN COUNCIL as follows:

RESOLUTION

WHEREAS the TOWN OF LUSK is the owner of 71 acres more or less lying and being in the North Half of Section Seven, Township Thirty-two North, Range Sixty-three West; and,

WHEREAS the Town Council of the Town of Lusk caused such lands to be advertised for bids for development of minerals other than oil and gas which CALL FOR BIDS was dated August 8th. 1956 and was published for four consecutive weeks in the LUSK FREE LANCE, a newspaper of general circulation published at Lusk, in said County; and,

WHEREAS J. L. STARNES of Lusk, Wyoming, has submitted a bid on said lands for a ten year lease with a royalty of 8% and with an advance rental of One Hundred Dollars the first year and Three Hundred, Fifty Dollars per year thereafter; and,

WHEREAS such offer and bid was the highest and best bid and offer received for such lease which offer is fair and reasonable therefor;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the TOWN OF LUSK, Wyoming, that the bid and offer of the said J. L. STARNES for such lease be, and it is hereby accepted; and the Mayor of said Town is authorized and directed to enter into a mining lease on said lands with the said J. L. STARNES, such lease to be approved as to form by the City Attorney.

DATED this 16th. day of October, 1956

Mayor

Councilmen

Docket

Ching
Ellis

June 13, 1957

Summary of Proposed Project

Object: Denial of application for exploration aid.

Docket No.: DMEA-4704

Commodity: Uranium

Amount of Application: $30,742.76

Applicant: Joel L. Starnes
P. O. Box 52
Lusk, Wyoming

Property: Lease on approximately 96 acres lying in the north central part of sec. 7, T. 32 N., R. 63 W., 6th P.M., Niobrara County, Wyoming.

Date of Application: March 18, 1957 (received March 28)

Referred to Region III: April 11, 1957

Field Examination made: April 25, 1957

Field Team Report received: June 3, 1957

Work Proposed: A single stage program consisting of rehabilitating the lower adit, enlarging the winze station and winze, sinking the winze an additional 150 feet, and drifting 400 feet along the fault at the most suitable level.

Estimated Costs: (9 months completion)

Preliminary work	$2,488.04	
Sinking winze 150 ft. @ $92.10/ft.	13,814.46	
Drifting 400 ft. @ $38.10/ft.	14,440.26	
TOTAL		$30,742.76

Excerpts from Field Team Report:

The Silver Cliff mine is in an area of steeply dipping Precambrian schists, overlain unconformably by nearly flat Cambrian (?) quartzite. These formations are cut by a high angle fault, the Silver Cliff fault; silver, copper, and uranium minerals occur mainly on the footwall side of the fault, in both the quartzite and the schist.

Existing workings on the property consist of four pits, a shaft, a winze, six levels of drifts, and a small stope.

A previous application (DMEA 3735) covering the property was denied. Since then (1955) the Applicant has reopened the south end of the 5,100 level, driven a short distance west from the main drift on that level, sunk a 47-foot winze at minus 85°, and drifted 20 feet east from the foot of the winze.

A subsidiary fault zone is exposed in the winze crosscut and at the foot of the winze, assays of samples from the subsidiary fault zone range from 0.034 eU to 1.96 (U). The radioactive mineral occurs in friable schist; the material assaying 1.96% U was reported by the Applicant to contain pitchblende and autunite, but no uranium minerals were seen during the examination. Evidence of mineralization in the main fault zone on the 5,100 level is limited to a single sample assaying 0.002% U.

In 1952-53, three holes, Nos. SC 7, 8, and 9 were drilled on the property by the USBM in behalf of the AEC. The holes penetrated a fault zone interpreted as the Silver Cliff fault at elevations of 4,975, 4,978, and 4,933 feet, respectively; probing of the holes showed only very slight radioactivity in this zone. The Applicant questioned the identity of this zone, but the field examiners state that the zone cut by the holes is reasonably near the projected trend of the Silver Cliff fault.

The Applicant's proposal is based on the hypothesis that the Silver Cliff fault was the channel for ascending uraniferous solutions, and therefore, the fault zone and adjacent schist contain commercial primary ore in the unoxidized zone below the water table (estimated at an elevation of 4,950 feet).

However, the field examiners cite evidence to the contrary as follows:

1) The low grade of mineralization shown by assays of samples from the lower levels;

2) Low probe results of drill holes that penetrated the fault below the mine workings; and

3) The probability that the oxidized ores mined (802 tons of 0.98% U_3O_8) from the upper levels are a result of supergene enrichment, and therefore that the primary mineralization below the water table would be of lower grade rather than higher grade. This conclusion is in accord with the previous conclusion of the AEC.

The field examiners and Field Team recommend that the application be denied.

Commodity Member's Comments: (excerpts)

USGS, N. E. Nelson, June 10, 1957:

Apparently ore has been found only in the quartzite in and near the fault, and the conclusions of the examiners as to the probability of primary ore occurring in the fault below the water table are most apt and the request of the Applicant should be denied. However, one could be curious about the ore making possibilities of some of the faults, other than the Silver Cliff, shown on Figure 3, if in their southerly extensions they cut favorable strata in the quartzite cap rock.

USBM, James Paone, June 11, 1957:

Agrees with the Field Team and advises denial of the application.

Div. of Rare & Misc. Metals, F.M. Murphy for Michael Ching, June 13, 1957:

The report of examination indicates that the exploratory work done to date on the subject property refutes the Applicant's theory that higher grade uranium bearing material will be found in the unoxidized zone below the water table. High grade ore was found along the fault near the surface, but work in the intermediate zone shows only low grade mineralization, except for a small blob of high-grade found on the subsidiary fault exposed in the winze. I agree with the field examiners that the subject property has been adequately explored.

Conclusions and Recommendations:

This Division agrees with the conclusions of the field examiners in regard to the potential of the subject property, and concurs in the Field Team's recommendation that application DMEA-4704 should be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Director
Division of Rare and
Miscellaneous Metals

DMEA Form 7
(12-56)

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6/13	Ching	700
6/13	Ellis	700
6/14	Selfridge	130
6/14	Lamb	130
6/14	Nelson	138
"	Johnson	110
"	Mittendorf	1000
6/14	JWP	220
		225

JUN 14 1957

Mr. Joel L. Starnes
P. O. Box 52
Lusk, Wyoming

Re: Docket No. DMEA-4704 (Uranium)
Silver Cliff Mine
Niobrara County, Wyoming

Dear Mr. Starnes:

Your application for aid in an exploration project and other information available to us in Washington concerning the above-named property have been reviewed.

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

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

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

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

MChing/izm 6-13-57
cc to: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224
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Denied 6-14-57

J. L. Starnes
P.O. Box 52
Lusk, Wyoming
June 13, 1957

MR. ERNEST Wm. ELLIS, CHIEF
RARE & MISCELLANEOUS METALS DIVISION
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Re: Docket No. DMEA-4704 (Uranium)
Silver Cliff Mine
Niobrara County, Wyoming

DEAR MR. ELLIS:

I would appreciate knowing the present status of my recent application for assistance and as to when I might expect a possible decision on your part.

I trust my interest in the matter through this request does not inconvenience you in any way for I am aware your present position must present a most burdensome schedule.

Sincerely yours,

J. L. Starnes

Denied June 14, 1957.

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June 11, 1957

4704

uranium

Joel L. Starnes

Silver Cliff mine

Niobrara County, Wyoming

$30,742.76

Ernest William Ellis, DMEA Member
Uranium Commodity Committee
James Paone, Bureau of Mines Member JP
Uranium Commodity Committee

Field Team Report

5/31/57 6/6/57

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IN REPLY REFER TO:

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

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June 10, 1957

Re: DMEA 4704
Joel Starnes
Silver Cliff Mine
Niobrara County, Wyoming
$30,742.76 - Uranium

Memorandum

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

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

Subject: Review of Field Team Report.

The applicant requested assistance in exploring a fault zone below the water table by winzing and drifting. In 1955 the applicant requested assistance in doing work in the same mine. The application DMEA 3735 was denied.

The mine is credited with the production of 802 tons of 0.98% U_3O_8 ore up to 1952. Shipments since probably total 250 tons but the grade is not given.

In 1953, the AEC estimated the ore reserves as:

700 tons at 0.30% U_3O_8.

About 250 tons are believed to have been shipped since that estimate was made. The reserve tonnage was divided between "in place" and "in the dumps" ore. Some ore has been mined and some recovered from the dumps but which dumps is not stated. Presumedly it came largely from the dumps of upper workings in the quartzite as little uraniferous material appears to have been found on the 5100 level and no uranium minerals were seen by the examiners.

Apparently ore has been found only in the quartzite in and near the fault, and the conclusions of the examiners as to the probability of primary ore occurring in the fault below the water table are most apt and the request of the applicant should be denied. However one could be curious about the ore making possibilities of some of the faults, other than the Silver Cliff shown on the mine map, Fig. 3, if in their southerly extensions they cut favorable strata in the quartzite cap rock. The fault correlated with that cut in drill holes SC 7 and SC 8 is an example, if, as I think likely, it is not a split of the Silver Cliff fault as shown on sections A-A' and B-B'.

I concur with the recommendation of denial of the examiners and the Field Team.

N. E. Nelson

N. E. Nelson

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

May 31, 1957

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region III

Subject: Docket DMEA-4704 (Uranium) Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming - Joint Report of Examination

Enclosed are the original and three copies of the Joint Report of Examination on the subject property by E. O. Binyon, USBM, and Walden P. Pratt, USGS.

The field examiners conclude that the probability for making a significant discovery is not sufficiently promising to justify Government participation. Accordingly they recommend that the Applicant's work proposal be denied to which the Field Team concurs.

E. N. Harshman

By E. N. Harshman
Acting Executive Officer

Enclosures

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Reviewed by
DMEA OPERATING COMMITTEE
6-7-57
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

DMEA
DEPARTMENT OF THE INTERIOR
MAY 31 1957
REGION III
DENVER, COLORADO

May 31, 1957

Memorandum

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

From: A. S. Konselman
E. N. Harshman

Subject: DMEA Docket 4704 (Uranium), Joel L. Starnes (Silver Cliff mine), Niobrara County, Wyoming

Enclosed are the original and nine copies of a joint report by Walden P. Pratt, U. S. Geological Survey, and E. O. Binyon, U. S. Bureau of Mines, covering their examination of the subject property.

The applicant proposes to explore for uranium along the Silver Cliff fault in schist wall rocks below the water table. The estimated cost of his program of winzing and drifting is $30,742.76.

The examiners conclude that deposits in the schist wall rocks are very low grade, that they have been explored at depth by three AEC drill holes, and that it is probable that any uranium deposits now present below the water table will be lower in grade than those explored by the applicant above the water table.

It is concluded, and we concur, that the proposed exploration will not result in the discovery of significant uranium ore deposits. Denial of the application for exploration assistance is recommended.

OFFICE MEMORANDUM
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A. S. Konselman
Mining Engineer

E. N. Harshman
Member, Field Team

Enclosures (10)
ENHarshman:mp

TRANSMITTED
MAY 31 1957

Reviewed by
DMEA OPERATING COMMITTEE
6-7-57
(date)

FOR UNITED STATES GOVERNMENT USE ONLY

DMEA
DEPARTMENT OF THE INTERIOR
MAY 31 1957
REGION III
DENVER, COLORADO

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

JOINT REPORT OF EXAMINATION BY FIELD TEAM
REGION III

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RECEIVED JUN 3 1957

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DMEA 4704

Joel L. Starnes

Silver Cliff Mine

Niobrara County, Wyoming

Uranium

TRANSMITTED
MAY 31 1957

Joint Engineering and Geologic Report

Reviewed by
DMEA OPERATING COMMITTEE
6-7-57
(date)

by

Walden P. Pratt, Geologist
Geological Survey

E. O. Binyon, Mining Engineer
Bureau of Mines

May 29, 1957

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History and production	5
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DMEA 4704

JOEL L. STARNES
SILVER CLIFF MINE
NIOBRARA COUNTY, WYOMING

SUMMARY

Joel L. Starnes, of Lusk, Wyoming, has applied for Government assistance in exploring for uranium in the Silver Cliff mine at Lusk. A previous application for DMEA assistance (Docket 3735) was denied in 1955 on the basis of the adequacy of the exploration already performed and the geologic improbability of making a significant discovery. Since that time the applicant has reopened some old workings and sunk an exploratory 47-foot winze.

The Silver Cliff mine was originally opened in silver-copper ore deposited in and near the Silver Cliff fault, a high-angle reverse fault which cuts flat-lying Cambrian(?) quartzite and the underlying strongly folded Precambrian schists. Uranium ore, chiefly uranophane, was later produced from a zone in the quartzite in the footwall of the fault. In his 1955 program the applicant proposed to explore for uranium in the contact between the quartzite and the schist in the footwall, and to explore the fault below the lowest level of the mine by core drilling. The applicant's present proposal is to explore the fault below the water table (estimated to be 130 feet below the foot of the winze) by sinking the winze an additional 150 feet and drifting 400 feet along the fault, at a total estimated cost of $30,742.76.

The applicant bases his proposed exploration on a few zones of uranium minerals in schist near the Silver Cliff fault in the lower workings, which assay from 0.034 percent eU to 1.96 percent U, and on his hypothesis that the fault zone was the channel for ascending uraniferous solutions and therefore contains commercial primary ore below the water table.

Previous drilling in an AEC program, though not reaching the presumed depth of the water table, did penetrate a fault zone interpreted as the Silver Cliff fault, about 25 feet above the presumed water table; probing of the holes showed only slight radioactivity in this zone. There is no evidence to support the applicant's hypothesis of richer primary mineralization below the water table; on the contrary, it appears probable that the oxidized ores are a result of supergene enrichment, and therefore that the primary mineralization below the water table would be of lower grade rather than higher grade. Because of the low probe results in the AEC drill holes, the relatively low grade of the samples from the lower levels, and the probability that mineralization along the fault zone below the water table is of lower grade rather than higher grade, the examining team concludes that further exploration of the property would not result in the discovery of a significant deposit of uranium ore, and recommends that the application be denied.

INTRODUCTION

On March 28, 1955, Joel L. Starnes, P. O. Box 52, Lusk, Wyoming, applied to the Defense Minerals Exploration Administration for assistance in exploring for uranium in the Silver Cliff mine at Lusk, Niobrara County, Wyoming. The two-stage program proposed at that time, under DMEA Docket 3735, consisted of driving an inclined adit and drilling core holes from a lower level. The application was denied on the basis of the amount of exploratory work already done on the property and the geologic improbability of making a significant discovery.

Since the 1955 application the applicant has done some independent exploration, and on March 18, 1957, applied for aid in a single-stage program that consists of rehabilitating some old workings, sinking a 150-foot winze, and drifting 400 feet from the winze, at a total estimated cost of $30,742.76.

The property was examined on April 25, 1957, by E. O. Binyon, mining engineer, U. S. Bureau of Mines, and Walden P. Pratt, geologist, U. S. Geological Survey, in company with the applicant. The examining team was accompanied by Stanley Kung, Point-4 trainee from Formosa.

This report has been discussed with representatives of the AEC and they agree with the conclusions and recommendations.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Silver Cliff mine is in sec. 7, T. 32 N., R. 63 W., sixth principal meridian, half a mile west of the main street of Lusk, Niobrara County, Wyoming (fig. 1). Lusk, the county seat and a supply center, is at the junction of U. S. Highways 20 and 87, and is a station on the Chicago and Northwestern Railroad. The property can be reached by driving half a mile west from the Ranger Hotel, on 3rd Street, to the end of the street, then through a gate and onto the property.

The mine workings range in altitude from 5,083 feet to 5,275 feet. They are located near the top of Silver Cliff Hill, a prominent topographic feature that rises about 300 feet above the surrounding gently rolling plains. Niobrara Creek, a small permanent stream, crosses the property and is a source of water. No timber suitable for mine use grows on the property. The nearest uranium mill where custom ores can be sold is at Edgemont, South Dakota, 68 miles northeast of Lusk. The climate is moderate and year-round operations are feasible. Electric power at 110 and 220 volts is on the property.

OWNERSHIP AND EXTENT

The applicant holds mining leases on three parcels of land containing about 96 acres. Two contiguous parcels, comprising 24.9 acres, are under lease from Helen F. Lincoln of Lusk, and Butler Corporation, a defunct Wyoming Corporation for which Kathryn Lambert and Mary Seyboldt

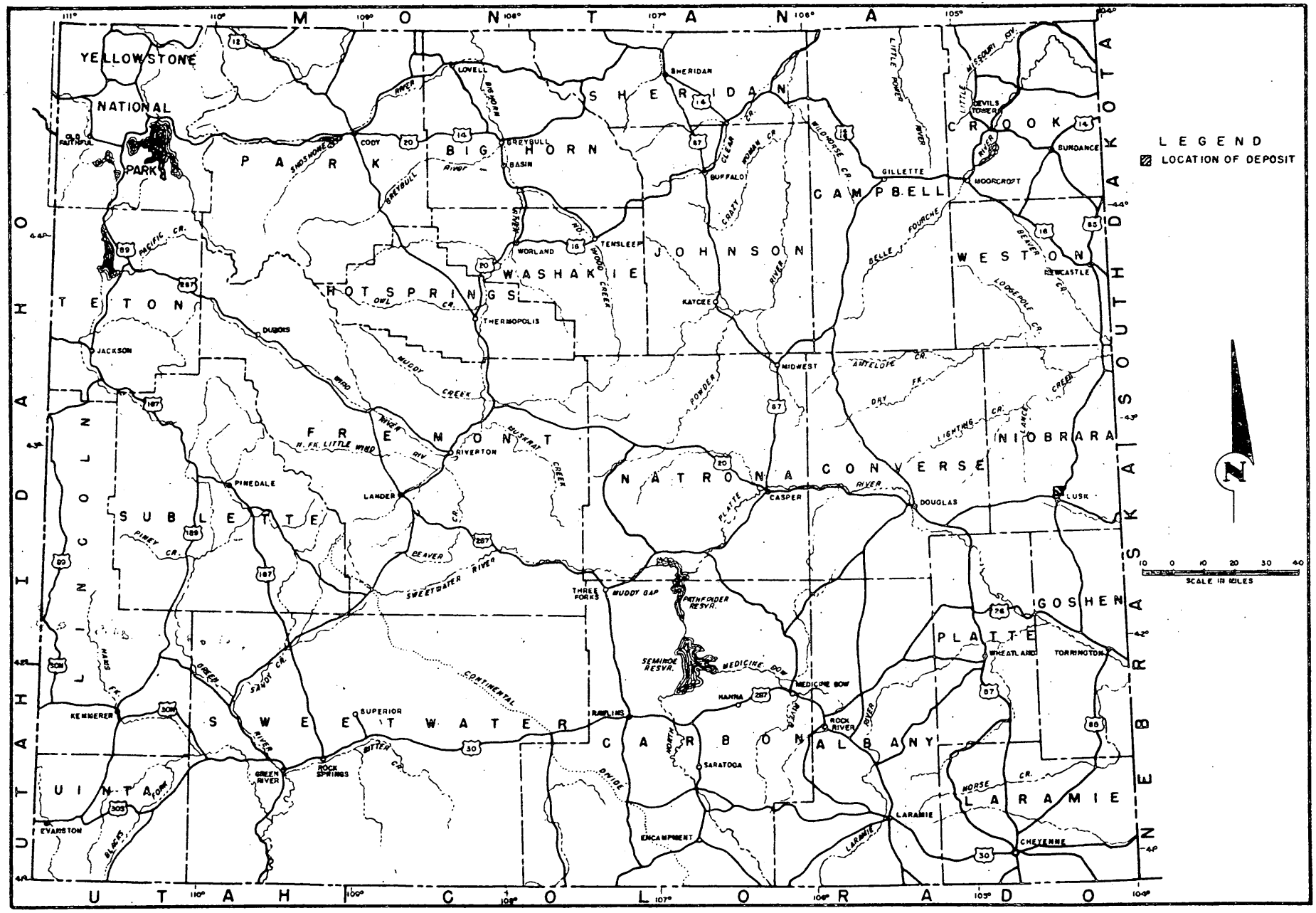

FIGURE 1 - LOCATION MAP - JOEL L. STARNES, SILVER CLIFF MINE, LUSK, NIOBRARA COUNTY, WYOMING - DMEA 4704

signed as the last two surviving directors. These two parcels lie in the SW$\frac{1}{4}$NE$\frac{1}{4}$ sec. 7, T. 32 N., R. 63 W., sixth principal meridian, and include the northernmost part of the Silver Cliff mine workings and the exposed Silver Cliff fault (fig. 2). In addition, the applicant has recently obtained a lease from the Town of Lusk on a 70.9-acre tract lying north of the Chicago and Northwestern Railroad right-of-way. This tract occupies most of the NW$\frac{1}{4}$NE$\frac{1}{4}$ sec. 7 and all of the W$\frac{1}{2}$NE$\frac{1}{4}$NW$\frac{1}{4}$ sec. 7, and extends south to the railroad right-of-way; it covers the concealed probable extension of the Silver Cliff fault. The combined area of the three parcels is 95.8 acres. The property south of the fence line that crosses Silver Cliff Hill is owned by Mrs. Jamesetta Hale, who reportedly will not lease to the applicant.

HISTORY AND PRODUCTION

High-grade silver-copper ore was discovered along the Silver Cliff fault in 1879, and the deposit was mined from 1880 until 1884 by the Great Wyoming Mining and Milling Company. The amount of ore produced during this period is not known, but the size of the workings indicates that it was small. The company built a 400-ton amalgamation mill which was operated intermittently until 1886, when it was dismantled.

Radioactive minerals were first produced between 1918 and 1922 by E. D. Lorimer, who constructed a small mill and reworked the mine dumps for their radium content. A small amount of ore was also mined in the upper tunnel. It is reported that 6 carloads of uranium ore,

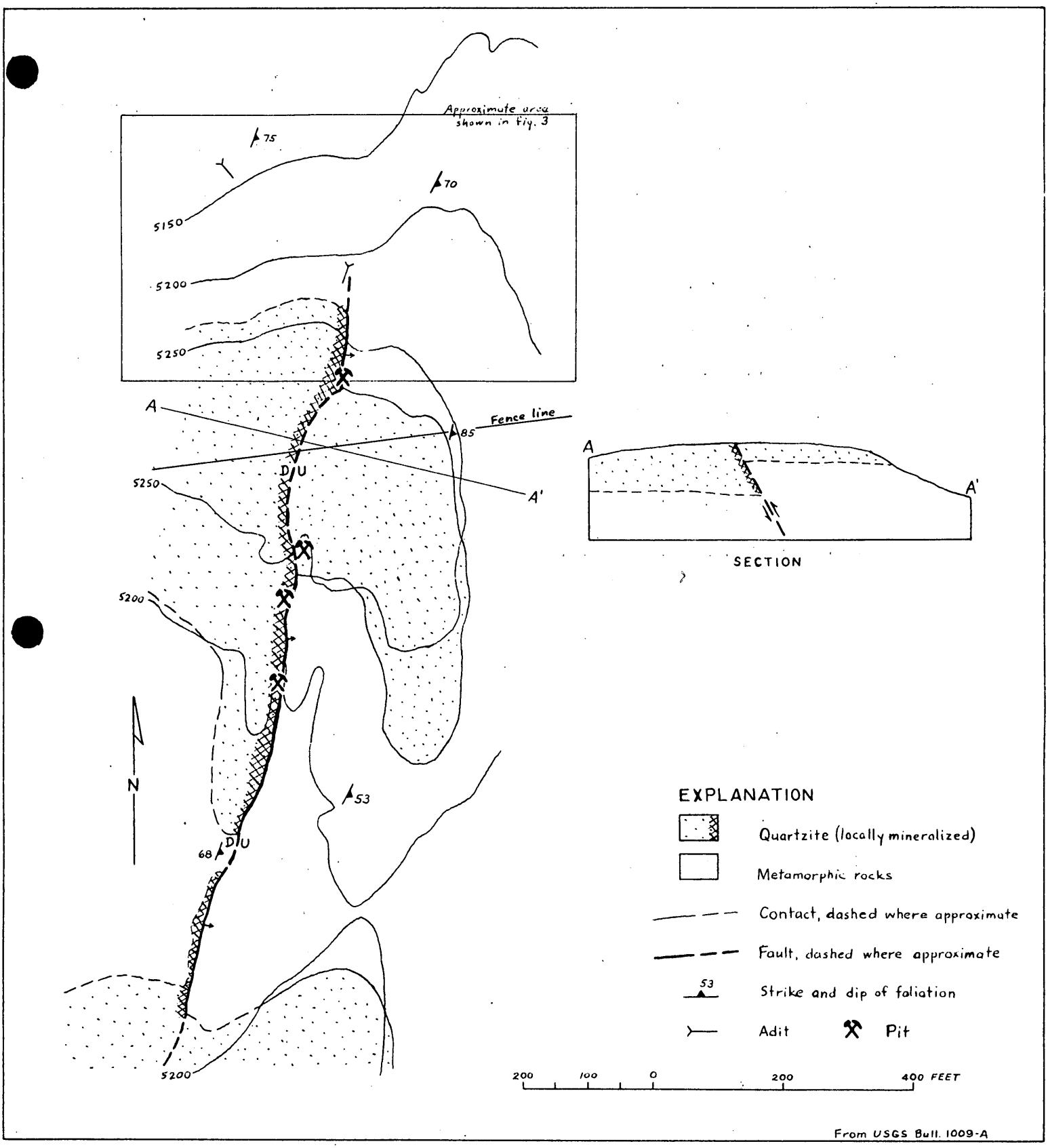

FIGURE 2. SURFACE GEOLOGIC MAP OF THE SILVER CLIFF MINE
LUSK, NIOBRARA COUNTY, WYOMING

DMEA DOCKET 4704

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averaging more than 3 percent uranium oxide, were shipped during this period.

The property was idle from 1922 until 1950, when it was leased by the Wyoming Uranium Company; in 1951 and 1952 this company reportedly shipped 317 tons of ore containing 0.32 percent U_3O_8 to the Vitro Chemical Company, Salt Lake City, Utah. Because of difficulties with the land owner and lessor of the south portion of the property, the company was dissolved in 1952.

Joel L. Starnes, the applicant, who was an official of the former company, obtained a lease on the north end of the property and organized the Uranium Development Company late in 1952. After the failure of this company in January 1955, the applicant with Sam N. Smith leased the same ground.

The property has been worked intermittently from 1952 until the present. Total production of uranium ore, through 1952, is reported to have been 802 tons having an average grade of 0.98 percent U_3O_8 (AEC RME-1002). Two shipments totaling about 60 tons of approximately 0.25 percent U_3O_8 ore have been made by the applicant since that time. The ore is reported to have come from the upper workings, but some of it may have come from the dump.

PRESENT STATUS

Existing workings on the property consist of four pits, a shaft, a winze, six levels of drifts, and a small stope; the northernmost workings are shown in figure 3. The 5100 level is shown in a cross section in AEC report RME-1002 at an elevation of 5,130 feet, but is not shown in the cross sections of USGS Bull. 1009-A; the elevation of 5,130 feet is therefore used in this report. During the time since the previous application, the applicant has reopened the south end of the 5100 level, driven a short distance west from the main drift on that level, sunk a 47-foot winze at minus 85°, and drifted 20 feet east from the foot of the winze.

In 1952-53, 9 core holes aggregating 2,677.5 feet were drilled on the property by the Bureau of Mines on behalf of the Atomic Energy Commission. Three of these holes, nos. SC 7, 8, and 9, are on the property included in the application (fig. 3).

Mining equipment on the property consists of a TD9 Allis Chalmers bulldozer, a 125 c.f.m. 2-stage Ingersoll Rand compressor, a single-drum Sullivan electric hoist powered by a 7½ h.p. GE reversing motor, 65 feet of 5/8-inch hoisting cable, a 16-cu. feet-capacity hoisting bucket, I-R stoper, jackleg, 55-lb. jack hammer, steel, bits, and miscellaneous small mine tools. There is no milling equipment on the property.

The only building on the property is a small 20 by 20 feet combination changehouse with a sorting shed for sorting and dumping the ore to trucks.

GEOLOGY

The geology of the Silver Cliff mine has been described in U. S. Geological Survey Bulletin 1009-A by V. R. Wilmarth and D. H. Johnson (1954), in U. S. Atomic Energy Commission RME-1002 by C. P. Bromley (1953), and in a previous DMEA Joint Engineering and Geologic Report, Docket 3735, by R. L. Bolmer and D. R. MacLaren (1955). The present report draws freely, and parts of it are taken directly, from these three previous reports.

The Silver Cliff mine is in an area of steeply dipping Precambrian schists, overlain unconformably by nearly flat Cambrian(?) quartzite. These formations are cut by a high-angle reverse fault, the Silver Cliff fault; minerals of silver, copper, and uranium occur mainly on the footwall side of the fault, in both the quartzite and the schist. The general relations are shown in figure 2.

The Precambrian schist is essentially a quartz-biotite schist with some muscovite and plagioclase. Its well-developed foliation strikes northerly and dips steeply east or vertical. Below the zone of oxidation the schist contains graphite, hematite, specularite, and pyrite as masses and blebs along the foliation planes. A few small lenses of pegmatite, also of Precambrian age, occur within the schist.

The quartzite (referred to as sandstone in some previous reports) is a tough, highly indurated rock that consists of well-rounded quartz grains and feldspar fragments cemented by calcite; quartz pebbles are abundant in places. A 6-foot bed of dark brown hematitic quartzite is included in this formation, about 15 feet above the base of the quartzite, but is not shown on the maps in this report. The quartzite is not exposed in the lower workings with which this application is concerned.

Minerals of silver, copper, and uranium occur as fracture fillings in calcite veins and as irregular replacement bodies, in the Silver Cliff fault zone, in the quartzite within 25 to 30 feet of the fault, and to some extent in the schist. Although previous mining operations for uranium have been restricted to the quartzite deposits, the target of the proposed exploration program is the fault zone and adjacent schist. Uranophane is the only uranium mineral known to occur in the fault zone, but small amounts of pitchblende, gummite, and metatorbernite have been found in the quartzite; the applicant also reports pitchblende and autunite from the schist.

The 5100 level is entirely in the schist, and the main drift on this level follows the Silver Cliff fault. A subsidiary fault zone is exposed in the winze crosscut and at the foot of the winze; the higher assays, ranging from 0.034 (eU) to 1.96 (U), have come from this subsidiary fault zone. The radioactive material occurs in very friable schist; the material assaying 1.96 percent U was reported by the applicant to contain pitchblende and autunite, but no uranium minerals were

seen during the examination. Evidence of uranium mineralization in the Silver Cliff fault zone on the 5100 level is limited to a single sample which assayed 0.002 percent U. No information is available below this level except in drill holes SC 7, 8, and 9, which penetrated a fault zone interpreted as the Silver Cliff fault at elevations of 4,975, 4,978, and 4,933 feet, respectively; probing of the holes showed only very slight radioactivity in this zone. (The applicant questioned the identity of this zone with the Silver Cliff fault, but the Silver Cliff fault would best account for the 7-foot thickness of the fault zone in the drill holes, and cross sections, figure 4, show that the zone in the holes is reasonably near the projected trend of the Silver Cliff fault.)

GEOLOGIC BASIS FOR EXPLORATION

The applicant bases his exploration proposal on the uranium mineralization in the subsidiary fault zone, and on his hypothesis that the Silver Cliff fault zone was the channel for ascending uraniferous solutions, and therefore that the fault zone and the adjacent schist contain commercial primary ore in the unoxidized zone below the water table. (Elevation of the water table is estimated by the applicant at 4,950 feet.)

The examining team feels that the uranium mineralization exposed in the workings is probably typical for the zone above the water table; and this mineralization is below ore grade with the exception of one

sample (1.96), which in the applicant's own words was "not in sufficient quantity to produce commercial ore." The results of probing in the drill holes indicate that the Silver Cliff fault zone is not significantly mineralized at an elevation of about 4,975 feet, 108 feet below the foot of the winze and 25 feet above the estimated water table. This combined evidence--ore at the surface, low-grade mineralization in the lower workings, and very low mineralization below the workings--shows a general decrease of uranium mineralization with depth. There is no direct evidence to support the applicant's hypothesis of richer mineralization below the water table. A contrary hypothesis is implied by Wilmarth and Johnson (1954, p. 11), who consider the uranium deposits in the quartzite to result from supergene alteration of the primary mineral (pitchblende), partly in place and partly by solution and redeposition by descending ground waters. They do not discuss the origin of uranium minerals in the fault zone and adjacent schist, but it follows from the above that the oxide minerals represent a zone of supergene enrichment, and the mineralization below this zone--i.e., below the water table--would be of lower grade.

ORE RESERVES

Reserves of uranium ore in the part of the property included in the application were estimated by the AEC at 700 tons containing 0.30 percent U_3O_8 (RME-1002). Of this, 400 tons were in the mine dumps and 300 tons in the upper workings (north end). Since this estimate was

made, in June 1953, several shipments made up, in part, of dump ore and ore from the workings in the quartzite were marketed. The tonnage taken from the dumps or from the workings is not known. The records show that shipments of approximately 250 tons have been made since 1952, and it is known that the greater part of these shipments were from the mine dumps.

APPLICANT'S PROJECT PROPOSAL

As proposed by the applicant, the single-stage program would include rehabilitating the lower adit, enlarging the winze station and winze, sinking the winze an additional 150 feet, and drifting 400 feet along the fault zone at the most suitable level. The three phases of the work would be done in the order named.

A breakdown of the estimated cost of the work is as follows:

PRELIMINARY WORK

1. Leveling existing track and cleaning water ditch
2. Enlarging and retimbering winze entrance
3. Enlarging and retimbering headframe and bin
4. Enlarging and retimbering existing 47 feet of winze.

Labor

4 men at $1.87 per hour, $388.96 per week, 4 weeks	$ 1,555.84

Materials			
Timber	$300.00	$	
Gas and oils	150.00		
Electric power	40.00		
Powder fuse and caps	65.00		
Drill steel	37.20		
		592.20	
Rentals			
Drill		80.00	
Overhead expense			
Insurance and taxes		260.00	
Total preliminary work			$ 2,488.04

SINKING TO A MAXIMUM DEPTH OF 150 FEET FROM THE PRESENT BOTTOM OF WINZE

Labor			
4 men at $1.87 per hour, $388.96 per week - $1,555.84 per month for 4 months	$6,223.36		
1 man at $1.50 per hour, $78 per week, $312 per month for 4 months	1,248.00		
Total estimated labor		7,471.36	
Materials			
Hoist line	65.00		
2 mine cars	200.00		
Blower and vent. line	400.00		
Timber	600.00		

Air line valves & fittings	$ 153.00	$	$
Pump discharge line	200.00		
Wiring and fixtures	210.00		
Water line	80.00		
Gas and oils	800.00		
Electric power	160.00		
Powder	315.00		
Fuse and caps	90.00		
Drill steel	65.10		
		3,338.10	
Rentals (4 months)			
Compressor	1,440.00		
Tram car	500.00		
Electric pump and assembly	240.00		
Drill	320.00		
		2,500.00	
Overhead expense			
Insurance taxes and bookkeeping	400.00		
Sampling	105.00		
		505.00	
Total estimated cost of sinking			$13,814.46
Total estimated cost per foot of sinking			92.10

DRIFTING 400 FEET ALONG THE VEIN AT THE MOST SUITABLE LEVEL

Labor		
4 men at $1.87 per hour $388.96 per week, $1,555.84 per month for 4 months	$6,223.36	$
1 man $1.50 per hour $78 per week $312 per month for 4 months	1,248.00	
		7,471.36
Materials		
Vent line	185.00	
Air line	350.00	
Wiring & fixtures	200.00	
Jackleg and mounting	185.00	
Gas and oils	800.00	
Electric power	160.00	
Powder	604.80	
Fuse and caps	214.00	
Drill steel	65.10	
Track	430.00	
Ties and crow	75.00	
Flat sheets	200.00	
		3,468.90
Rentals (4 months)		
Compressor	1,440.00	
Tram car	500.00	

Electric pump and assembly	$ 240.00	$	
Drill	320.00		
		2,500.00	
Overhead expense			
Insurance and taxes	400.00		
Sampling	200.00		
Engineering report	200.00		
Incidental expenses	200.00		
		1,000.00	
Total estimated cost of drifting			$14,440.26
Total estimated cost per foot of drifting			38.10
TOTAL ESTIMATED COST OF PROJECT			30,742.76
GOVERNMENT'S SHARE AT 75 PERCENT			23,057.07

The applicant states that work will start within 10 days of signing a contract and that the estimated time for completion is 9 months.

CONCLUSIONS AND RECOMMENDATIONS

The examining team concludes that the Silver Cliff fault zone has been adequately explored in this area, and that available evidence indicates that further exploration would not result in the discovery of a significant deposit of uranium ore. This evidence is: (1) the

low grade of uranium mineralization shown by assays of samples from the lower levels, (2) low probe results of drill holes that penetrate the fault below the mine workings, and (3) the probability that the oxidized ores are a result of supergene enrichment, and therefore that the primary mineralization below the water table would be of lower grade rather than higher grade. This conclusion is in accord with the previous conclusion of the AEC.

The examiners recommend that the application be denied.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

May 3, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 6 1957

DATE	INITIALS	CODE
5/6	C	220
5/6	[illegible]	700

Memorandum

To: Secretary to the Operating Committee, DMEA

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

Subject: Docket No. DMEA-4704 (Uranium), Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming

Enclosed, as an addition to the application, are the following:

1. An agreement dated June 7, 1955, between J. L. Starnes and Sam N. Smith, regarding property proposed for subordination.

2. Map of the Silver Cliff Addition to the Town of Lusk, Niobrara County, Wyoming.

3. Copy of letter dated May 1, 1957, from the Applicant transmitting items 1 and 2, above.

The Applicant states that another map will be submitted which will show the boundary lines of the subject property in regard to existing workings.

One copy of the enclosed material is being retained in our file.

E. N. Harshman

E. N. Harshman

Encls.

DMEA
DEPARTMENT OF THE INTERIOR
MAY 2 - 1957
REGION III
DENVER, COLORADO

May 1, 1957
J. L. Starnes
P.O. Box 52
Lusk, Wyoming

Defense Minerals Exploration Administration
Acting Executive Officer
224 New Customhouse
Denver 2, Colorado

Re: Docket DMEA 4704 (Uranium), Joel L. Starnes (Silver Cliff Mine), Niobrara County, Wyoming Request for additional imformation.

Dear Sir:

In response to your request I am herewith forwarding to you four copies of the release agreement from one Sam N. Smith, a correct description of the 15.3 acre tract, and four photostats giving the location of blocks five and six. The map showing boundry lines in regard to exhisting workings has as yet not been completed.

The correct description is as follows:

> Commencing at a point on the East boundry line of the Southwest Quarter of the Northeast Quarter (SW$\frac{1}{4}$NE$\frac{1}{4}$) of Section 7, Township 32 North, Range 63 West, of the 6th P.M., which point is a distance of 400 feet from the Northeast corner of said forty-acre tract: thence in a Southwesterly direction across said forty-acre tract to a point on the West boundry line of said tract 400 feet North of the Southwest corner of said forty-acre tract; thence South to the Southwest corner of said forty-acre tract; thence East to the Southwest corner of Block 5, Silver Cliff Addition to the Town of Lusk, Wyoming; thence North and East along the West and North sides of Blocks 5 and 6 of said Silver Cliff Addition to the Northeast corner of said Block 6; thence North along the East boundry line of said forty-acre tract to the point of beginning, containing 15.3 acres, more or less.

I will forward the remaining map to you just as soon as it is available.

Sincerely yours,

J. L. Starnes

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DMEA
RECEIVED MAY 6 1957

DATE	INITIALS	CODE

THIS AGREEMENT, Made and entered into this 7th day of June, 1955, by and between J. L. STARNES, of Boulder, Colorado, party of the first part, and SAM N. SMITH, of Denver, Colorado, party of the second part,

WITNESSETH:

THAT WHEREAS, the party of the first part is the lessee of the following mining property in Section 7, Township 3 North, Range 63 West of the 6th P. M., Niobrara County, Wyoming:

Commencing at a point on the east boundry line of the southwest quarter of the northeast quarter (SW$\frac{1}{4}$NE$\frac{1}{4}$) of section 7, T. 32 N., R. 63 W. of the 6th P. M., which point is a distance of four hundred (400) feet from the northeast corner of said forty-acre tract; thence in a southwesterly direction across said forty-acre tract to a point on the west boundry line of said forty, four hundred (400) feet north of the southwest corner of said forty; thence south to the southwest corner of said forty; thence eas east to the southwest corner of block five (5), Silver Cliff addition to the Town of Lusk, Wyoming; thence north and east along the west and north si sides of blocks five (5) and six (6); thence north along the east boundry line of said forty to the point of beginning, containing 15.3 acres, more or less.

AND WHEREAS, the party of the second part was at one time interested and desirous of conducting operations for the recovery of minerals from the dumps of said property, and that said party of the second part represented and agreed with certain obligations and terms with the party of the first part under a certain agreement by and between both parties dated the 18th day of February, 1955,

<u>OF WHICH</u>: the party of the second part has neglected, abandoned, or refused to uphold,

<u>IT IS AGREED</u>: by and between both parties that the party of the second part release, return, and give to the party of the first part all rights, title, and interest on and in the above described property, and that there be no further or continued consideration or interest in above stated agreement between both parties dated the 18th day of February, 1955.

IN WITNESS WHEREOF, the parties hereto have hereunder set their hands and seals at Denver, Colorado, the day and year first above written.

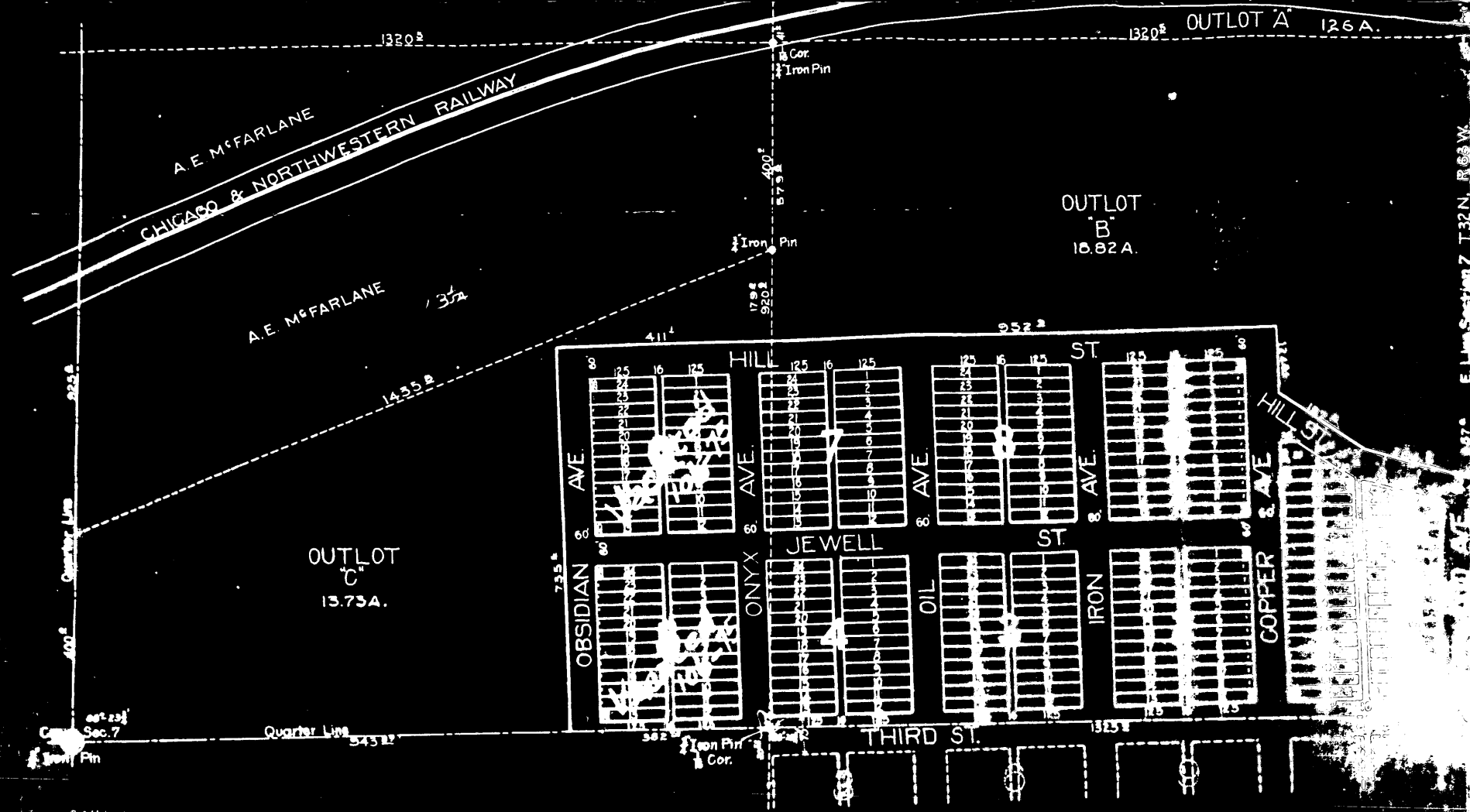
J. L. Starnes SEAL
J. L. STARNES
Party of the first part

Sam N. Smith SEAL
SAM N. SMITH
Party of the second part

no.

CENTRAL FILE COPY
DMEA
RECEIVED MAY 6 1957

DATE	INITIALS	CODE



MAP OF THE SILVER CLIFF ADDITION TO THE TOWN OF LUSK

NIOBRARA COUNTY WYOMING

1 in. = 200ft.

Be it known that the within subdivision of the southeast quarter of the northeast quarter and portions of the southwest quarter of the northeast quarter and the northeast quarter of the northeast quarter of section seven, township thirty-two north, range sixty-three west, sixth principal meridion and situated in Niobrara County State of Wyoming, comprising Blocks 1 to 9, and Outlots A, (all that portion of the NE¼ NE¼ lying south of the right of way of the Chicago & Northwestern Railway across said NE¼ NE¼ Sec. 7.) Outlot B (the remaining portion of the SE¼ NE¼ Sec. 7, not platted as blocks, streets and alleys), Outlot C (all that portion of the SW¼ NE¼, not platted as blocks, streets and alleys, which lies south of a line diagonally across said SW¼ NE¼ from a point 400± north of the southwest corner to a point 400± south of the northeast corner of said SW¼ NE¼ Sec. 7.) as shown on the within map is with the free consent and in accordance with the desire of the undersigned owner and proprietor, said subdivision to be called Silver Cliff Addition to the Town of Lusk; and the streets and alleys shown are perpetually dedicated to the public use.

In witness whereof BUTLER CORPORATION has caused these presents to be signed by its President and its seal affixed and attested by its Secretary this 11th day of May, A.D. 1918.

Witness C. M. Bryan

BUTLER CORPORATION

Attest Ross Lambert President

Kathryn Lambert Secretary

STATE of WYOMING
COUNTY of NATRONA ss

Before me Chester M. Bryan Notary Public in and for the County and State aforesaid, appeared Ross Lambert and Kathryn Lambert to me personally known, who, being by me duly sworn, did say that they are the President and Secretary, respectively of Butler Corporation, a Wyoming Corporation authorized to deal in Real Estate, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed by them in behalf of said corporation by authority of its Board of Directors, and said Ross Lambert and Kathryn Lambert acknowledged said instrument to be the free act and deed of said corporation.

Given under my hand and Notarial Seal this 11 day of May, A.D. 1918.

Chester M. Bryan
Notary Public

My Commission expires November 23, 1918

R.F. Dorr Lust, Wyo.

STATE OF WYOMING)
) ss.
COUNTY OF NIOBRARA)

The undersigned, NIOBRARA ABSTRACT AND TITLE COMPANY, bonded abstracters in and for said County, does hereby certify that the above and foregoing is a true and correct photo copy of the Original Dedication of the Silver Cliff Addition to the Town of Lusk, Wyoming, given by Butler Corporation, to the Town of Lusk, Wyoming, as the same appears of record in the Plat Book of the records in the office of the County Clerk, Ex-Officio Register of Deeds in Niobrara County, State of Wyoming.

IN WITNESS WHEREOF, the said NIOBRARA ABSTRACT AND TITLE COMPANY has caused this certificate to be signed by its President, and the Seal of said Company to be hereunto affixed this 29th day of April, 1957.

NIOBRARA ABSTRACT AND TITLE COMPANY

By: P. C. Byford
President.

OFFICIAL FILE COPY
RECEIVED MAY 6 1957
DATE | FEES | CODE

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-23	Ching	700
4-23	Ellis	700
24	Mathews	100
		700
4/24	C	220

APR 24 1957

Mr. Joel L. Starnes
P. O. Box 52
Lusk, Wyoming

Re: Docket No. DMEA-4704 (Uranium)
Silver Cliff Mine
Niobrara County, Wyoming

Dear Mr. Starnes:

In accordance with the request contained in your letter of March 18, 1957, to our Denver office, we are returning the two original lease forms dated February 2, 1955 and October 16, 1956.

Sincerely yours,

SIGNED

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

Enclosures

MCHING/dlm 4-23-57
cc to: Mr. Ching
Admr.'s Reading File
THKiilsgaard, 5224
DMEA ft Reg. 3 (2)

8623

DMEA
DEPARTMENT OF THE INTERIOR

APR 18 1957
REGION III
DENVER, COLORADO

REGION III

Building 20
Denver Federal Center
Denver 2, Colorado
April 18, 1957

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Superintendent, Denver Experiment Station, Region III

Subject: Docket DMEA 4704 (Uranium) Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming

The application for Joel L. Starnes, Docket DMEA 4704, in the amount of $30,742.76, was received in this office on April 18, 1957.

A field examination will be made and suitable report prepared by an engineer from the Denver office.

W. H. KING

W. H. King

cc: Executive Officer (2)
ENHarshman
JFShaw

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE
4/22	C	220
"	~~[illegible]~~	700

NO(2)

OFFICIAL FILE COPY
DMEA
RECEIVED APR 19 1957

DATE	INITIALS	CODE
4/19	C	220
"	[illegible]	700
	J	

224 New Customhouse
Denver 2, Colorado

April 17, 1957

Memorandum

To: W. H. King)
E. N. Harshman) w/enclosures, Items 1-5 below

From: DMEA Field Team, Region III

Subject: Docket DMEA-4704 (Uranium) Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming

Enclosed is the following material relating to the subject docket.

1. Copy of application for Government assistance in exploration work under the DMEA program.

2. Memorandum of Review by John E. Crawford, USBM.

3. Memorandum of Review by W. P. Williams, USGS.

4. Letter of transmittal of the foregoing to this office, dated April 11, 1957, from the Chairman, Operating Committee, DMEA.

5. Routing control sheet.

Also enclosed is a copy of our memorandum, dated April 16, 1957, to the Chairman, clarifying the comments contained in the third paragraph of the enclosed transmittal letter.

A joint report of recommendations based on available information or a joint report of findings and recommendations based on a field examination is requested.

If a contract appears likely, the field examiners should clarify the points listed in the Chairman's letter.

Twelve extra copies of each map used in the joint report which show the land to be subordinated and the location and extent of recommended work, relative to property boundaries, should be submitted if Government participation is recommended.

The Bureau of Mines' copy of the application should be returned to this office with the joint report of examination. Mr. Marshman will forward the Survey's copy of the application to the Washington office.

Original signed by
E. N. MARSHMAN

By E. N. Marshman
Acting Executive Officer

Enclosures

NNM:jy

cc: Sec. Op. Comm. (2)
King
Docket 4704
Chron.

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

April 16, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED APR 22 1957

DATE	INITIALS	CODE
4/22	C	220
"	Ching	700

Memorandum

To: Chairman, Operating Committee, DMEA

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

Subject: DMEA Docket 4704 (Uranium) Joel L. Starnes (Silver Cliff mine) Niobrara County, Wyoming

Our letter of March 25, 1957 transmitting the original and two copies of the subject application to you, stated that the original lease forms pertaining to the property proposed for subordination were included. By an error on our part these original lease forms were not included, and thus the confusion noted in the third paragraph of your letter of April 11, 1957 transmitting the application to us for field examination.

We are transmitting herewith the original leases (2) for checking against the rather poor copies contained in the application. The applicant requests that the leases be returned to him when you have finished with them.

E. N. Harshman

E. N. Harshman

Enclosures

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-9	Ching	700
4-9	Ellis	700
4/10	Selfridge	130
"	Johnson	110
"	Mittendorf	100
		220

APR 11 1957

Mr. Joel L. Starnes
P. O. Box 52
Lusk, Wyoming

Re: Docket No. DMEA-4704 (Uranium)
Silver Cliff Mine
Niobrara County, Wyoming

Lamb
Nelson

Dear Mr. Starnes:

The application for assistance in exploring your property, under the captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to:

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

The Regional Office will contact you in regard to your project if additional information is required.

Sincerely yours,

C. O. Mittendorf

Administrator

MChing/izm 4-9-57
cc to: Mr. Ching
Admr.'s Reading File
DMEA FT Reg. 3 (2)

8623

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code
4-9	Ching	700
4-9	[illegible]	700
4/10	[illegible]	130
"	[illegible]	110
"	[illegible]	100
4/11	C	220
		700
		220

APR 11 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-4704 (Uranium)
Joel L. Starnes
Silver Cliff Mine
Niobrara County, Wyoming

Dear Mr. Harshman:

The subject application is being referred to you for investigation, a field examination if warranted, and recommendations.

Enclosed for your information are memoranda, dated April 1 and 5, 1957, by John E. Crawford, USBM, and W. P. Williams, USGS, respectively, relating to the application. Also enclosed are two copies of the application for the use of the Field Team.

We are at a loss regarding the third paragraph of the Applicant's covering letter of March 18 and the second paragraph of your memorandum of March 25. The former appears to mean that the original and four copies of each lease were being forwarded, with the request that the originals be returned after the copies had been checked against them. However, we did not receive any originals; only three copies of each lease were received. Your interpretation hardly appears correct since the only copy of the one lease submitted under Docket No. DMEA-3735 was returned to the Applicant in July, 1955, by John Shaw.

If a contract appears likely the field examiners should clarify the following points with the Applicant:

1. If the Agreement, dated February 18, 1955, between J. L. Starnes and Sam N. Smith (see DMEA-3735) is still in existence, a Consent to Lien and Subordination Agreement would be required from Sam N. Smith;

2. Consents to Lien and Subordination Agreements would be required of Helen F. Lincoln, Butler Corporation and the Town of Lusk;

3. The legal description of the land under the lease from Helen F. Lincoln and Butler Corporation cannot be reconciled with the sketch map submitted with the application; and

8623

4. The position of the proposed work with respect to the boundaries of the land should be shown on a map.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Enclosures

APPROVED:

Frank D. Lamb

Member, Bureau of Mines (JHB)

N. E. Nelson

Member, Geological Survey (JHB)

MChing/izm 4-9-57
cc to: Mr. Ching
Admr.'s Reading File
Operating Committee
THKiilsgaard, 5224

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

Date	Surname	Code

8623

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

IN REPLY REFER TO:

OFFICIAL FILE COPY
DMEA
RECEIVED APR 8 1957

DATE	INITIALS	CODE
4/8	C	220
		700
..	Chiang	

April 5, 1957

Memorandum

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

From: W. P. Williams, U. S. Geological Survey

Subject: Review of application, DMEA 4704, Joel L. Starnes, Silver Cliff mine, Niobrara County, Wyoming, (uranium).

The applicant proposes to explore for uranium ore deposits on 96 acres of land located near Lusk, Wyoming. Part of this land was covered in DMEA docket 3735, by the same applicant.

DMEA 3735 was denied on the basis of poor chances for success. In his new application the applicant states he has performed considerable work on the property for his own account. This work includes rehabilitating some underground openings as well as driving some new openings. Two shipments of ore are claimed, but the tonnage and grade are not stated. One sample by the applicant had a grade of 1.91 percent eU.

The applicant wishes to sink an inclined shaft (-85°, "winz") 150 feet, then do 400 feet of drifting in the search for primary ore veins below the water table. He indicates he is not interested in drilling the property.

It does not seem appropriate for DMEA to participate in the work in order to test the applicant's geological hypotheses or to 'see what's down there.' On the other hand his additional work and accounts of high grade samples qualify the property for reconsideration by the Field Team. I recommend, therefore, that the application be referred to the Field Team for re-evaluation.

W. P. Williams

W. P. Williams

[illegible]
[illegible] OF MINES
[illegible], D. C.

Date April 1, 1957

DMEA Docket No. 4704
DMEA Contract No.
Commodity Uranium
Name of applicant Joe L. Starnes
Name of property Silver Cliff Mine
Location of property Niobrara Co., Wyoming
Estimated cost of project $30,742.76

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee
From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee
Subject: Review of Application
(Application, Field Team Report, etc.)

1. Date of project doc: mailed 3/18/57. 2. Date received by reviewer 3/29/57

3. Other reports on this property known to reviewer: Yes ☐ No ☐

4. Other reports on nearby properties known to reviewer: Yes ☐ No ☐

5. Information available on past production: Yes ☐ No ☐

6. Other pertinent factors known to reviewer: Yes ☐ No ☐

7. Explain items marked yes above:

8. Factors needing special consideration:
a. Location ☐
b. Ownership ☐
c. Evidence of mineralization ☐
d. Geology ☐
e. Proposed exploration method ☐
f. Alternate exploration method ☐
g. Costs ☐
h. _____ ☐

9. Action advised:
a. Obtain information ~~xxxxxxxxxxxxx~~ ☒
b. Refer to Field Team ☒
c. Denial ☐
d. Agree with Field Team ☐
i. Consult with Mr. _____ at _____ DMC office.
e. Disagree with Field Team ☐
f. Suggest alternate plan ☐
g. Request another examination ☐
h. Approval ☐

Exploration project

10. Remarks: (Use back of page if necessary)

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DMEA
RECEIVED APR 1 1957

DATE	INITIALS	CODE
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"	[illegible]	700

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

March 29, 1957.

Mr. Joel L. Starnes,
P.O. Box 52,
Lusk, Wyoming.

Subject: DMEA 4704

Dear Mr. Starnes:

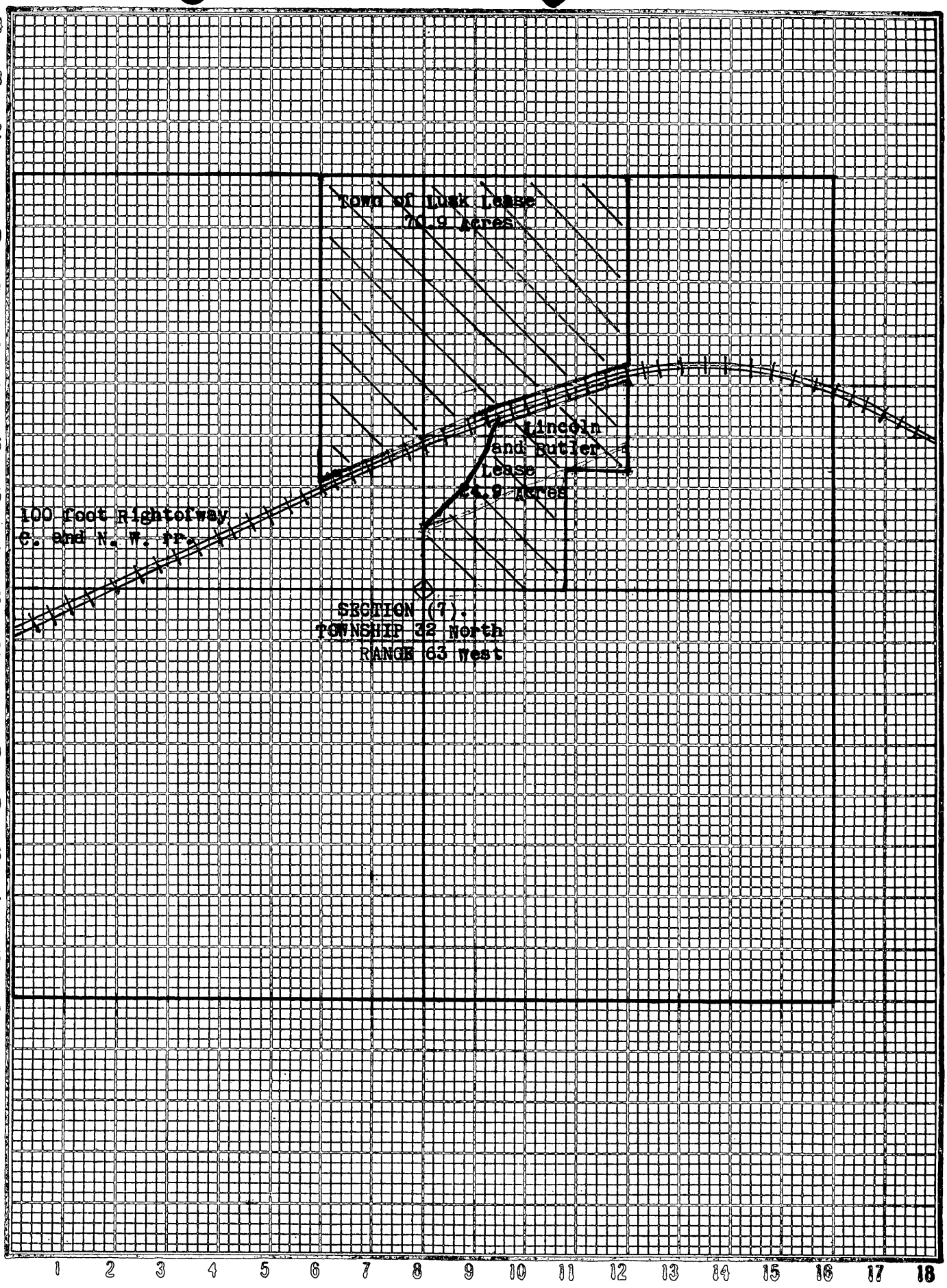
Your application for exploration assistance, dated March 18, 1957, submitted to our office at Denver, Colorado, has been assigned Docket Number DMEA 4704 and referred to the Rare & Misc. Metals Division in the Washington office. Kindly identify all future correspondence relating to your application by this Docket Number.

Sincerely yours,

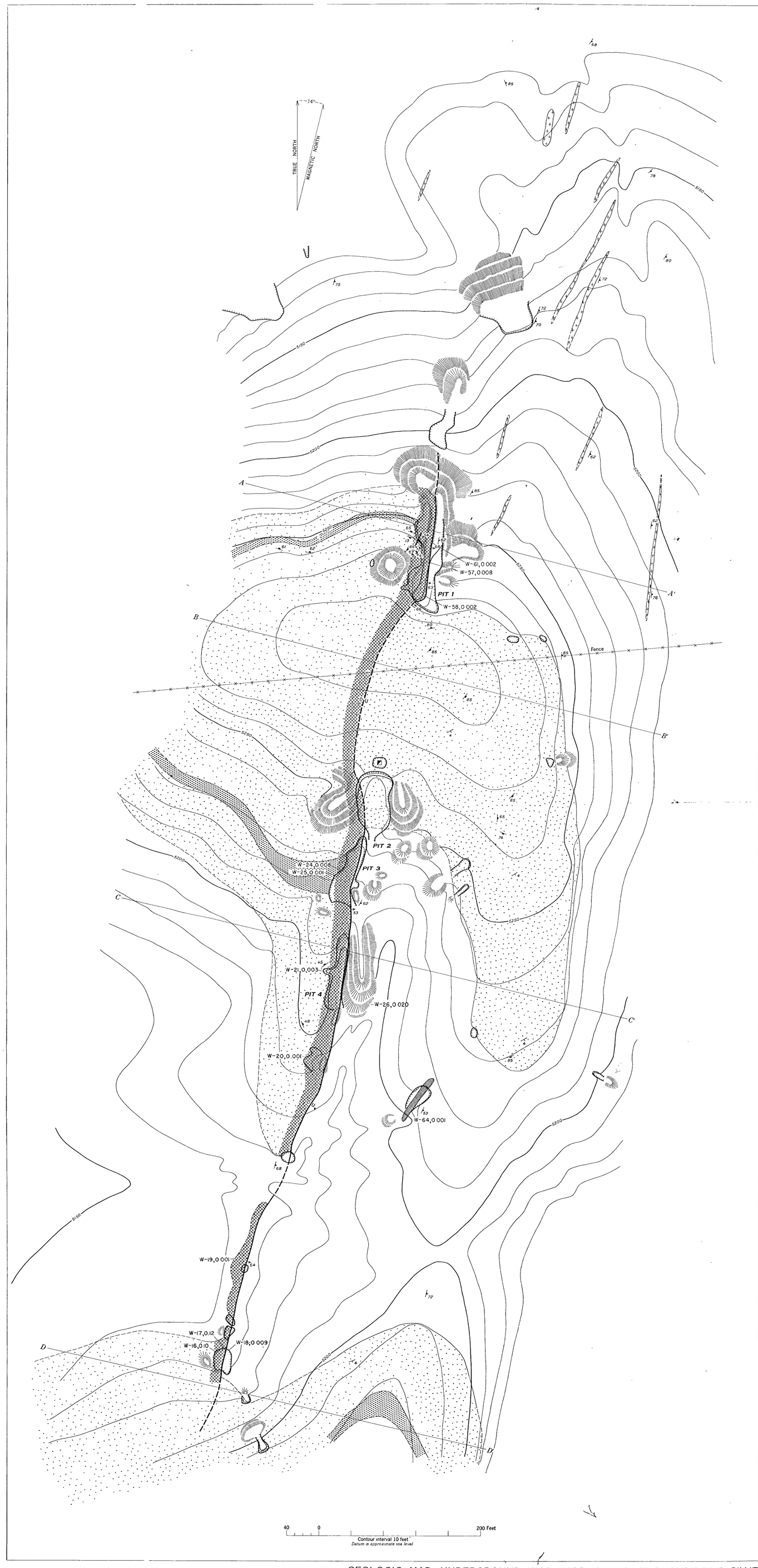
Allen S. Dakan, Director
Operations Control and
Statistics Division

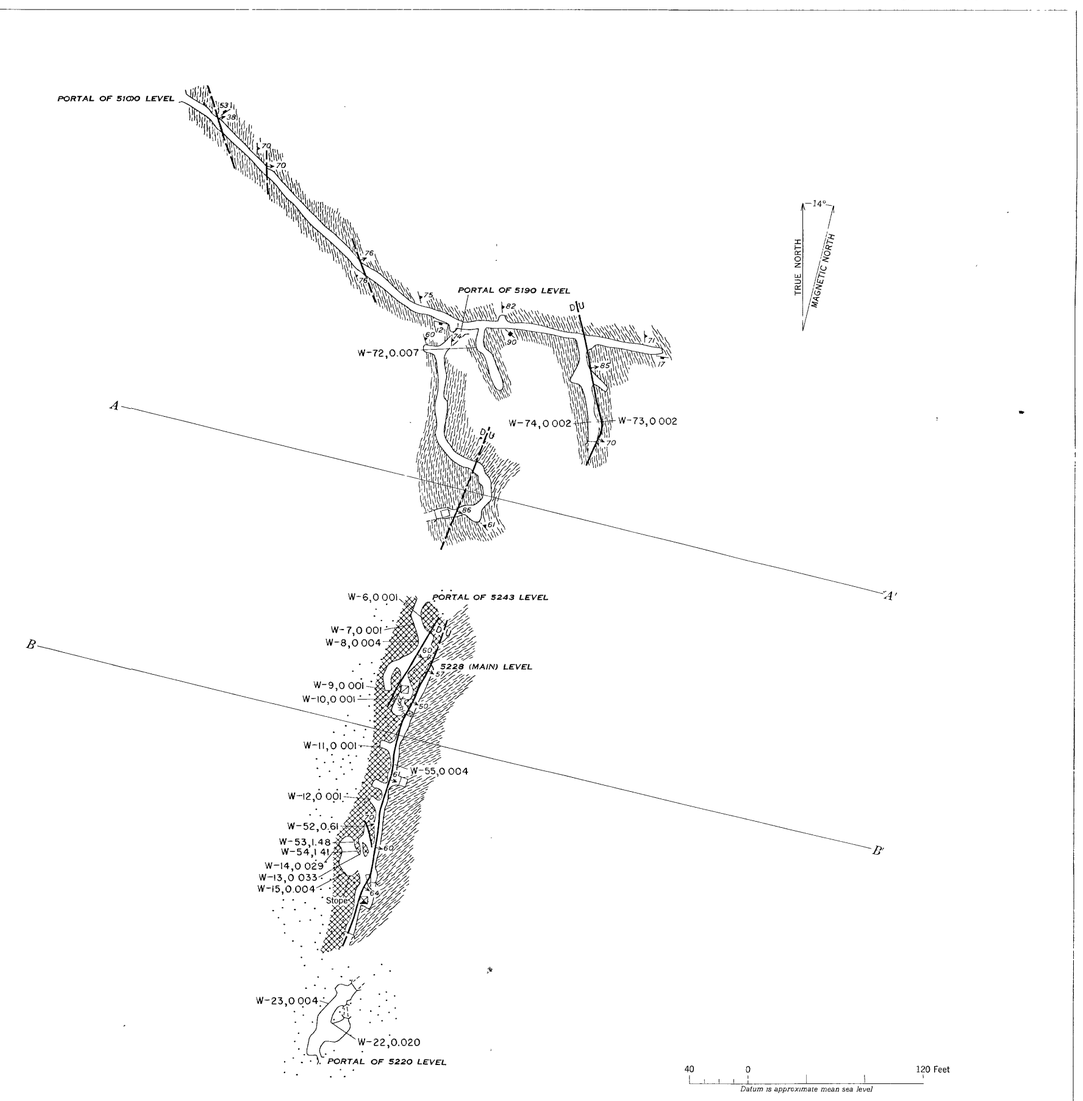
Copy to: Region III.

6416

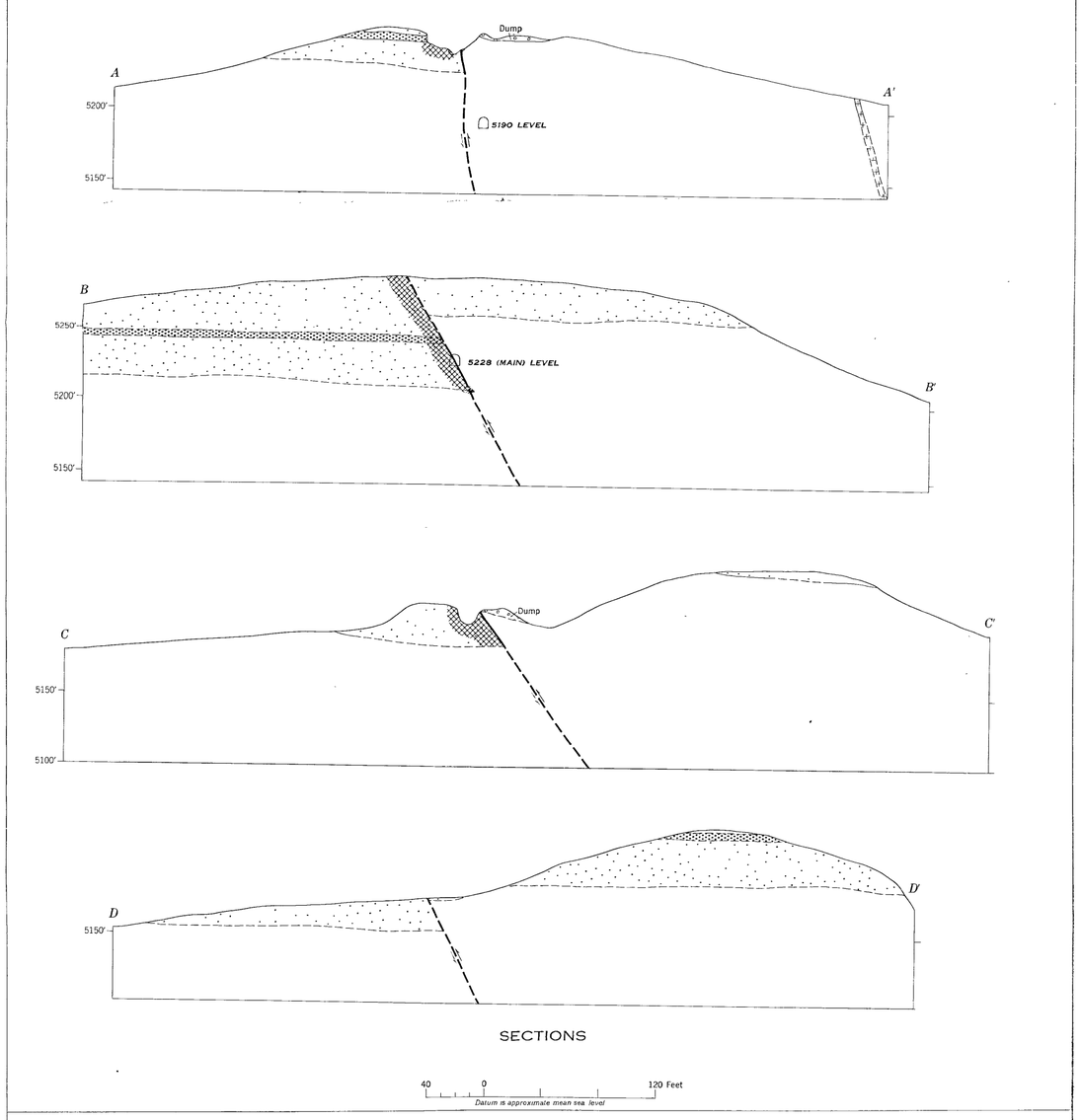

Town of Lusk Lease
70.9 Acres
Lincoln
and Butler
Lease
23.9 Acres
100 foot Rightofway
C. and N. W. rr.
SECTION (7).
TOWNSHIP 32 North
RANGE 63 West

OFFICIAL FILE COPY
D M E A
RECEIVED MAR 28 1957
DATE | INITIALS | CODE





UNDERGROUND WORKINGS



SECTIONS

EXPLANATION

CAMBRIAN(?)

Calcareous sandstone (Locally mineralized along fault)

Hematitic sandstone (Locally mineralized along fault)

PRE CAMBRIAN

Carbonate vein

Pegmatite

Map and sections — Plan

Metamorphic rocks

Contact, dashed where approximately located

Fault, showing dip, dashed where approximately located. U, upthrown side, D, downthrown side

Fault, in section, showing relative movement

Strike and dip of beds

Strike and dip of foliation

Strike and dip of joints

Strike of vertical joints

Vertical shaft

Bottom of shaft

Inclined workings
Chevrons point down

Head of winze

Foot of winze

Ore chute

Caved workings

Opencut

Dump

W-73,0.002
Sample number, percent uranium

GEOLOGIC MAP, UNDERGROUND WORKINGS, AND SECTIONS OF THE SILVER CLIFF MINE, LUSK, NIOBRARA COUNTY, WYOMING

Geology and topography by V R Wilmarth and D H Johnson, August 1950

Extra copy from Docket 3735

285996 O - 54 In pocket

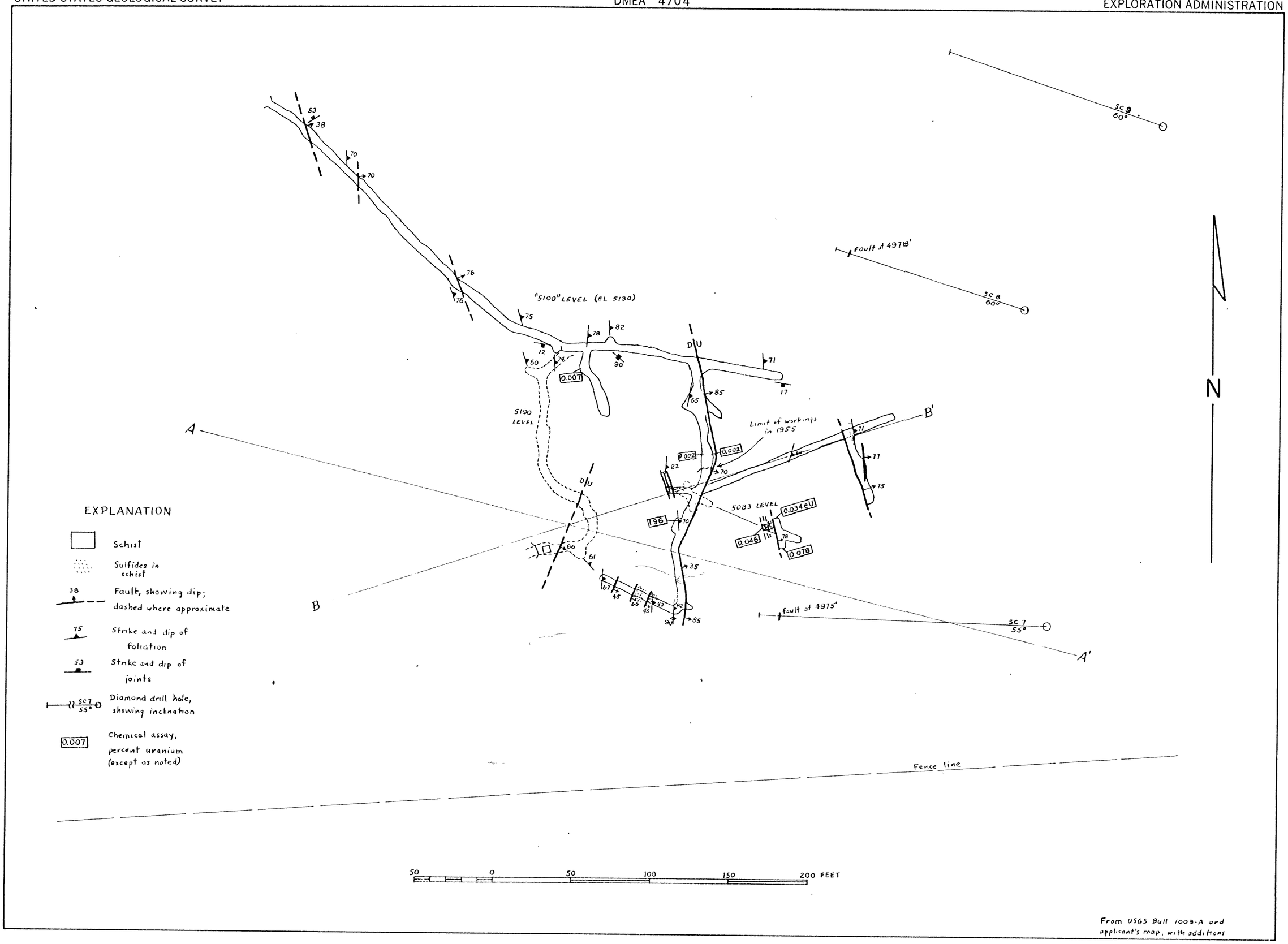
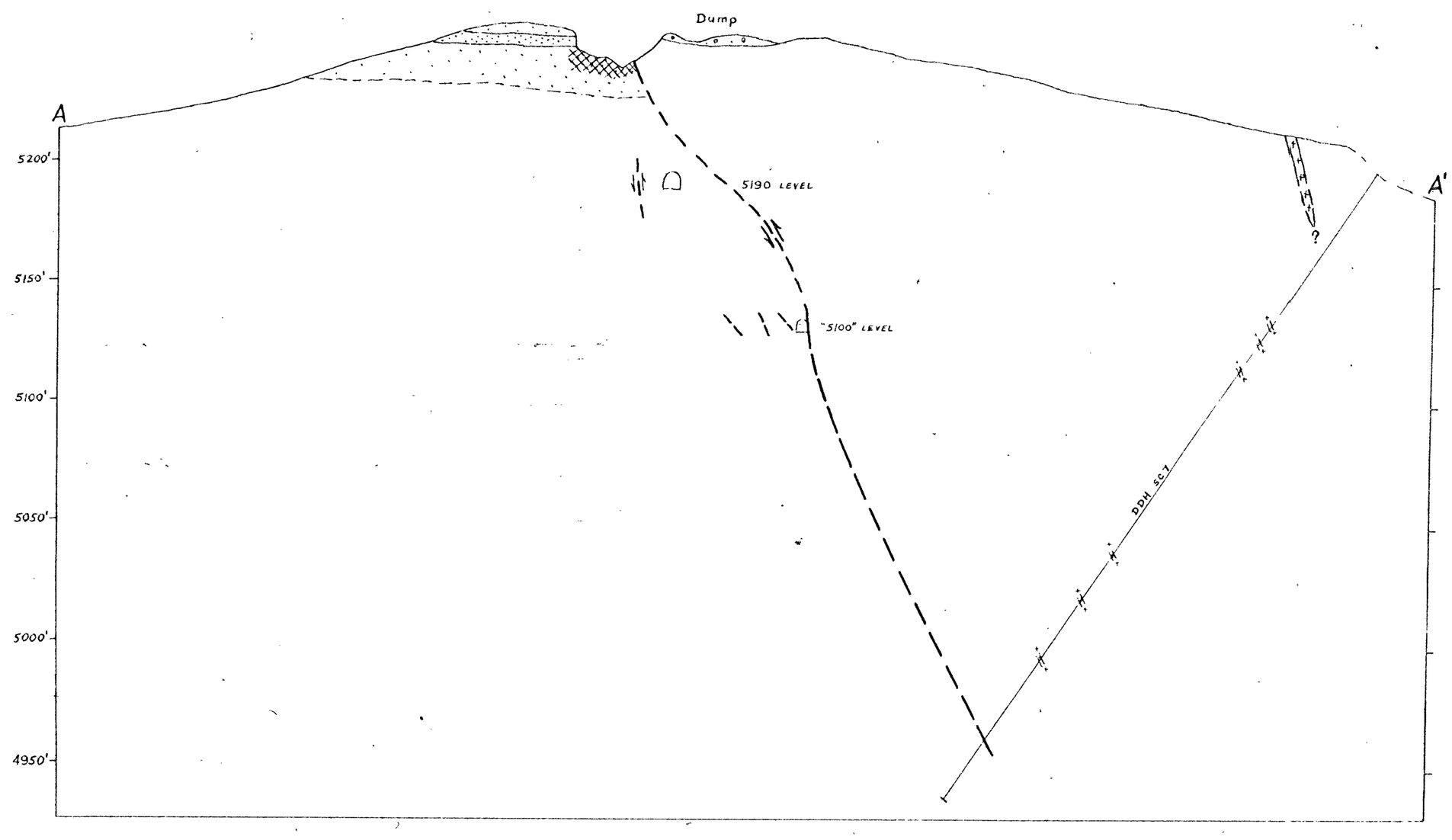
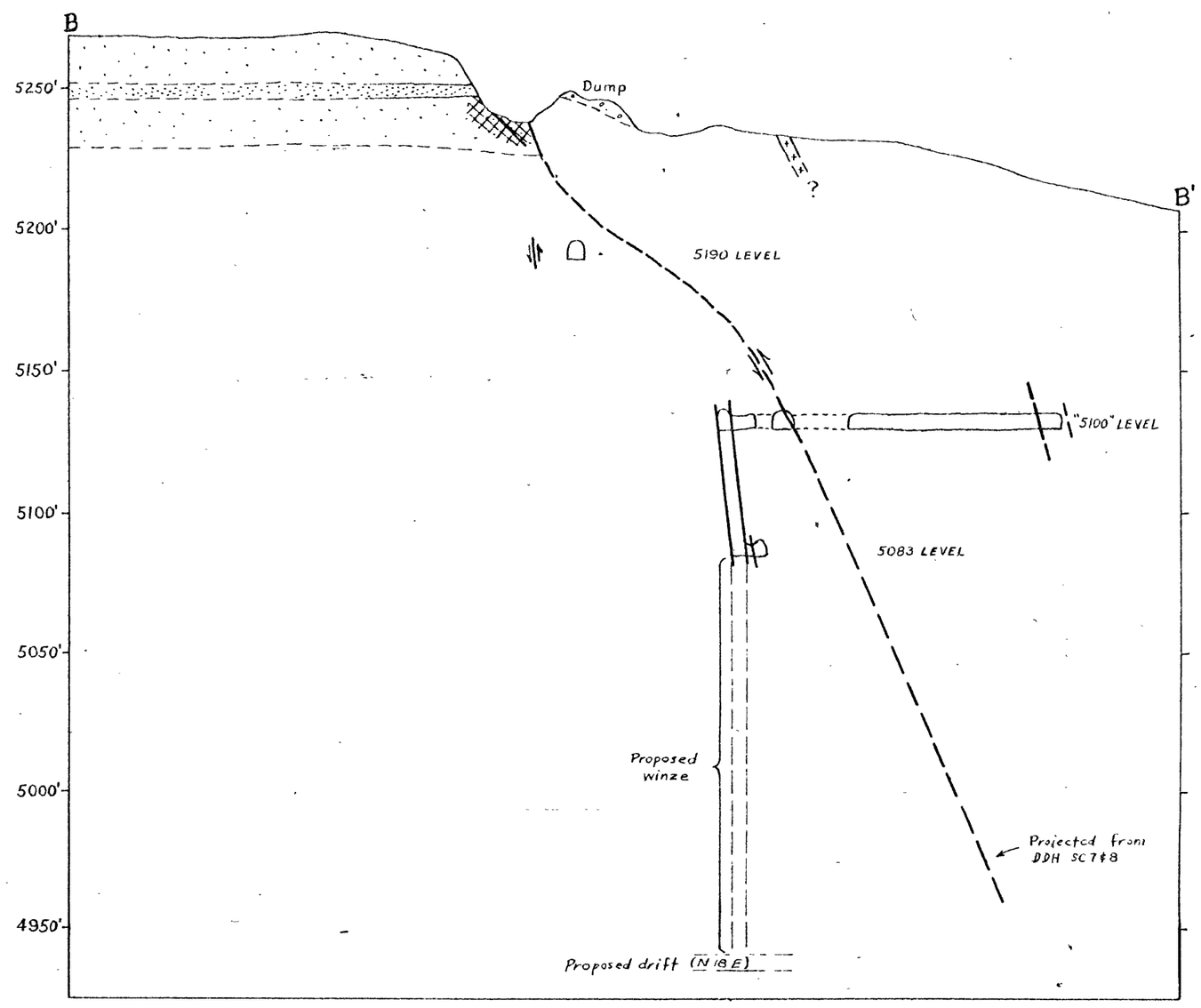


FIGURE 3. GEOLOGIC MAP OF THE NORTH END OF THE SILVER CLIFF MINE
LUSK, NIOBRARA COUNTY, WYOMING

DMEA DOCKET 4704





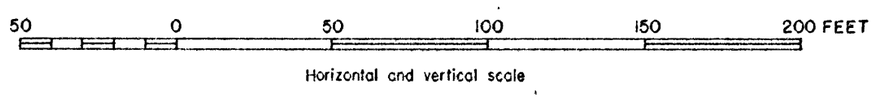


FIGURE 4. CROSS SECTIONS, SILVER CLIFF MINE
LUSK, NIOBRARA COUNTY, WYOMING
DMEA DOCKET 4704