MF-203
Revised March 24, 1955

For Government's Use Only
EXPLORATION PROJECT CONTRACT
Operator _____
Docket No. DMEA- _____
Contract No. Idm-E _____
Contract Date _____

CONSENT TO LIEN

To the United States of America:

Referring to that certain land in the County of Lemhi, State of Idaho, described as follows:1/

Radiant Claim #104

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

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None

3. Undertakes and agrees neither to commit any act nor assert any claim in conflict with the provisions of this Consent to Lien; and to give advance notice of the Government's rights under this Consent to Lien to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, or interest in the land; and

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3/ Write "none" if that is the case. Do not leave lines blank.

4. Consents to all amendments and assignments of the contract without notice thereof, and agrees that this Consent to Lien shall extend and apply thereto.

5. Added provision: _____

Dated this 16th day of June, 1955

Knowles Fisher Corp. [Seal]

C. E. Knowles Pres [Seal]

[Seal]

I, E. L. Fisher certify that I am the V. Pres Sec'y & Treas (Secretary, etc.) of the corporation named herein; that C. E. Knowles who signed this agreement was then President (President or Vice-President, etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

[Corporate Seal]

Anna M. Moreland
ANNA M. MORELAND
Notary Public State of New York
Qualified in Cattaraugus County
My Commission Expires March 30, 1956

C. E. Knowles
Kenneth White
Reese R Esgar
Miley Evans

On this 22nd day of June 1955 personally appeared Kenneth White, Reese R. Esgar and Miley Evans who subscribed the above instrument.

Barbara B Musgrove
Notary Public for Oregon, County of Linn
My commission expires 12/10/55

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MME Form 7
(10-58)

OFFICIAL FILE COPY

Date	Surname	Code
3/11/59	Kearney	700
	Selfridge	120
		110
		100
		220
	DMEA-4501	225

(Incoming letter filed in DMEA-2855
D. B. McGee & A. R. Kleinkauf)

Mr. Arthur E. Granger, Chief
Salt Lake Branch
Production Evaluation Division
Atomic Energy Commission
222 South West Temple, Room 210
Salt Lake City, Utah

MAR 13 1959

Re: PEL:EB:mkc

Dear Mr. Granger:

In accordance with your request of March 6, we are enclosing copies of the following property on-site examination reports:

DMEA-3882 Knowles Fisher Corporation, Radiant claims, Lemhi County, Idaho

DMEA-3974 Western Gold & Uranium, Inc., Silver Reef Mines, Washington County, Utah

DMEA-4291 Ralph E. Patton, et al., Foolproof claims, Custer County, Idaho

DMEA-4575 Idaho Nevada Uranium Corporation, Queen, et al., claims, Elko County, Nevada

We have requested our Reno, Nevada, office to forward a copy of the on-site examination report for Docket No. DMEA-4501, Kern Uranium Company, Little Sparkler and MeTem claims, Kern County, California.

No DMEA reports are available because no on-site examinations were made of the following properties:

DMEA-2855 Allen N. Kleinkauf and Donald B. McGee, Minnie Lee and Fiend group of claims, San Bernardino County, California

DMEA-3759 Fall Creek Uranium Corporation, Inc., claims in Caribou Mountains, Bonneville County, Idaho.

FLKnouse/gla 3-11-59 Sincerely yours,
cc to: Director's R. File
Operating Committee
FLKnouse
Regions I, II, and III, w/oe incoming letter

(signed) FRANK E. JOHNSON
Acting Director

(bh)

Enclosures

43683

700

FILE COPY
Surname:

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

December 5, 1955

Memorandum

To: The File

From: F. M. Murphy, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Telephone call of December 2, 1955 with Mr. Murray re Docket DMEA-3882 (Thorium) - C. E. Knowles - Lindsay Chemical Corp.

Suggest:

1. Open up a few more pits to expose vein material;

2. Submit new application, applicant can refer to material and exhibits in above docket;

3. New application should have new maps showing recent pits and assay results;

4. Possibly new application should be for 2 stages of work:
Stage 1 - Diamond drilling;
Stage 2 - Crosscut and drifts.

Note: Field Team examiners have impression that only small mineralized pods of questionable grade occur on property.

sgd. F. M. Murphy

F. M. Murphy

FMMurphy/izm
12-5-55
cc to: Admr.s Reading File
Docket
Mr. Murphy

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DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
OCT 6 - 1955

September 30, 1955

Mr. C. E. Knowles, President
Knowles-Fisher Corporation
Gouanda, New York

Re: Docket No. DMEA-3802 (thorium-monazite)
Radiant Claims
Lemhi County, Idaho

Dear Mr. Knowles:

Thank you for your letter of September 21, 1955.

It has been our experience that most of the denials made by Washington are made without prejudice. An exact interpretation of the phrase may not be possible, but in effect it means that Washington would be glad to consider any new evidence with respect to your property at any time you have any to submit.

We are not, however, in a position to make recommendations to you as to further exploration of your property.

By Field Team, Region I, NW District

A. E. Weissenborn, Exec. Officer
U. S. Geological Survey

Stephen W. Zoldok, Acting Member
U. S. Bureau of Mines

cc: DMEA (2) w/sys incl.
USGS (2) "
Nicholson "

NE:
DA 567
EM. 5777

Knowles-Fisher Corp.

RECEIVED
OCT 6 - 1955

NON FERROUS CASTINGS - VALVES - PRECISION MACHINE WORK
METAL STAMPINGS - AUTOMATIC SCREW MACHINE PARTS - PLATING & ASSEMBLIES
GOWANDA, N. Y.

September 21, 1955

United States Department of the Interior
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

Attention: Mr. H. B. Nickelson

Re: Docket No. DMEA-3882
(thorite-monazite-ilmenite)
Unnamed property
Lemhi County, Idaho

Dear Sir:

We have just received a communication from your Washington office denying our request for a loan for further exploration on above captioned thorium deposit. This denial however is made without prejudice. It is our understanding that the denial for the loan is based upon not having opened up enough of the vein to convince you that we have a vein rather than a pocket. Of course, the object of requesting the loan was for further exploration.

We consider this a valuable prospect and are anxious to proceed. It is our opinion as well as that of Dr. Tester that the tunneling outlined in our request for a loan would be the next logical step. However, you are no doubt correct in wanting more openings further up the mountain before you feel justified in committing the Government for a loan. We would greatly appreciate your comments on what would be advisable for us to do before re-applying for a loan.

As the winter weather is not far off in your area, we would appreciate hearing from you at your earliest convenience. I personnaly would like to go to Salmon and see that this work is done as it should be. If you think it advisable, I will be glad to meet you in Spokane at any time you suggest.

Very truly yours

KNOWLES-FISHER CORP.

C. E. Knowles

C. E. Knowles

CEK:rf

Dept. Know check map & [illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

[redacted]C.
So. 157 Howard Street
Spokane 4, Washington

RECEIVED
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cc: ✓DMEA (2) w/cys incl.
WMSM (2) "
Richelson "

PHONE:
GOWANDA 567
BUFFALO EM. 5777

Knowles-Fisher Corp.

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METAL STAMPINGS - AUTOMATIC SCREW MACHINE PARTS - PLATING & ASSEMBLIES
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Surname 700

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

SEP 15 1955

Mr. C. E. Knowles, President
Knowles-Fisher Corporation
Gouverneur, New York

Re: Docket No. DMEA-3082 (Thorium-monazite)
Radiant Claims
Lemhi County, Idaho

Dear Mr. Knowles:

Your application for aid in an exploration project and other data 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 a small amount of thorium mineralization on your claims, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under the circumstances, that your application for exploration assistance is denied. Such denial, however, is made without prejudice. In the event further work on your part discloses new and more favorable evidence of ore deposition on the property, we shall be pleased to consider a new application.

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

Sincerely yours,

C. O. Mittendorf
Administrator (by ESF)

AGKeating:am
9-13-55
cc to: Admr. Reading File
Operating Committee
Docket
Messrs. F. D. Lamb, Rm. 3649
T. H. Kiilsgaard, Rm. 5222
Code 700
Mr. Keating
DMEA Field Team, Region I NW Dist. (2)

R.C.G.

(Docket Copy) 700

A. J. Meeting
Ellis

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.
September 13, 1955

Summary of Proposed Project

Subject: Denial of application for an exploration project.

Docket No.: DMEA-3882

Commodity: Thorium-monazite

Applicant: C. E. Knowles, Knowles-Fisher Corp.,
(Owners of claims held by right of location have incorporated as Knowles-Fisher Corporation)
Gowanda, New York
Radiant ClaimsLemhi County, Idaho

Property: 8 unpatented mining claims
Radiant Nos. 101-102-103-104-105-106-107 and 108
Section 26. Township 24 N. Range 20 E B.M.
Radiant Claim No. 104 recorded November 7, 1953, Book 5 page 272, County of Lemhi, Idaho
Radiant Claim No. 103 recorded November 17, 1953, Book 5 page 281, County of Lemhi, Idaho

Date of Application: May 12, 1955

Amount of Application: $23,017.00

Work Proposed and Estimated Cost:

By Independent Contract:

Drift 500 feet at $20.00 per foot	$10,000.00	
Diamond drilling 1,500 feet at $3.00 per foot	4,500.00	
Bulldozer trenching 160 hours at $12.00 per hour	2,000.00	
		$16,500.00
Geological and engineering consultants	2,475.00	2,475.00
Cable car crossing Salmon River	850.00	
Equipment - tools and shed	300.00	
Powder magazine	150.00	
		$1,300.00
Analytical work	400.00	
Core boxes	100.00	
Accounting	150.00	$650.00

Contingencies - 10% of Estimated Costs $2,098.00

Total Estimated Costs $23,017.00

Field Team Report: Received August 29, 1955
Field Examination - July 26, 1955 - Howard B. Nickelson-USGS
Tom Huber - USGS

The country rocks in the vicinity of the project are metamorphosed sediments consisting of schists and augen gneiss. A mineralized zone following what appears to be bedding extends for a mile or so toward the northwest which may contain pods of thorite. The only exposure of a vein was found in a pit, 16 feet in width. Four samples taken across this section by the examining engineer ranged from 0.09 to 0.14 percent thorium oxide.

E. P. Kaiser, who is studying the general district for the USGS, is of the opinion that the Radiant group of claims probably contains thorite as bunchy, sporadic concentrations not good enough to constitute ore and that none of the deposits he has examined in the district are of economic proportion although they present interesting mineralogy. Denial of the application is recommended since the grade of the material is too low and all the available evidence indicates that significant concentrations of thorite in this district are uncommon.

Commodity Committee Members' Comments:

U. S. Geological Survey - N. E. Nelson - September 1, 1955

The examiners conclude that, "the material in the pit is too low grade to constitute ore" and "the present evidence suggests the existence of only small mineralized pods of questionable grade elsewhere in this general area." I concur with the recommendation of the Field Team."

U. S. Bureau of Mines - John E. Crawford - September 8, 1955

"We concur with the recommendation of the Field Team that the application of the Knowles-Fisher Corporation be denied."

Rare and Miscellaneous Metals Division - A. G. Keating

The only exposure of a mineralized vein was found in a pit on Radiant No. 104 claim. Samples from this

vein assayed about 0.12 percent thorium oxide. It is reported that other similar veins in the district contain only minor amounts of thorium. It appears unlikely that the exploration proposed by the Applicant will disclose a higher grade of thorium concentrations than indicated by the assay data and that experienced elsewhere in the area. However the examining engineer is of the opinion that there is a northwest-trending mineralized zone which may contain pods of thorite.

This division concurs with the recommendations of the Field Team and Washington Commodity members that the application be denied.

Ernest Wm. Ellis

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

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

September 13, 1955

Memorandum

To: Files

From: A. G. Keating, Mining Engineer
Rare and Miscellaneous Metals Division

Subject: Docket No. DMEA-3882 (Thorium-monazite)
C. E. Knowles, Knowles-Fisher Corporation
Application for aid

Mr. R. E. Darling of the Applicant group together with Mr. James Murray - Assistant to the President of the Lindsay Chemical Company, conferred with the writer relative to the situation regarding the application. The writer informed Mr. Darling that the present exposure on the property consisted of one pit of low grade mineralization which was not considered sufficient justification for favorable consideration of the proposed exploration.

Mr. Murray explained that his company specialized in thorium, and that they were favorably impressed with the possibilities of the project property and were interested in an opportunity to purchase the possible output. Mr. Darling inquired as to what would be required for his group to qualify for Government assistance. The writer advised him that further work on the property would be necessary to expose, if possible, additional portions of the vein with higher grade mineralization. It was suggested that he consider trenches or pits along the indicated trend of the zone to the northwest. Mr. Darling stated that his group was in a position to undertake such a program and would undertake such work immediately.

The writer made inquiry regarding charges by the Lindsay Chemical Company for analyses of thorium and rare-earth samples. Prices quoted were - thorium $25.00 per sample - rare-earths no charge.

Mr. Murray considered that the only dependable concerns able to make proper analyses of these minerals were Ledoux and Company, and Lindsay Chemical Company.

A. G. Keating
A. G. Keating

9/12/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED

September 8, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of examination, DMEA Docket 3882, Knowles Fisher Corporation, Radiant Claims, Lemhi County, Idaho

I have reviewed the Field Team report of examination, Knowles Fisher Corporation, DMEA Docket 3882; and in the absence of Mr. Joseph O. Hosted, Washington representative of the Atomic Energy Commission, I have discussed the report with Mr. Thomas J. McCarvill of the Atomic Energy Commission.

We concur with the recommendation of the Field Team that the application of the Knowles Fisher Corporation be denied.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford
John E. Crawford

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

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John E. Crawford

9/6/55 gla

IN REPLY REFER TO:

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

RECEIVED
SEP - 6 1955

September 1, 1955

Re: DMEA 3882
Knowles-Fisher Corp.
Radiant Claims
Lemhi Co., Idaho
$23,017 - Thorium

Memorandum

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

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

Subject: Review of Field Team Report.

The application asked for aid in doing core drilling, tunnelling and bulldozing to explore a one-outcrop thorium deposit, the estimated cost to be $16,500. Additional installations, analytical work, contingencies, etc., were estimated to cost $6,517.00.

The examiners conclude that, "the material in the pit is too low grade to constitute ore" and "present evidence suggests the existence of only small mineralized pods of questionable grade anywhere in this general area."

I concur with the recommendation of the Field Team.

N. E. Nelson

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IN REPLY REFER TO:

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

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SEP - 2 1955

September 1, 1955

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I concur with the recommendation of the Field Team.

N. E. Nelson

N. E. Nelson

NENelson:iml
G-9/1/55
cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
F. D. Lamb, 3649

IN REPLY REFER TO:

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

RECEIVED
SEP - 2 1955

September 1, 1955

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Radiant Claims
Lemhi Co., Idaho
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Docket file
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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
SEP - 2 1955

September 1, 1955

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Knowles-Fisher Corp.
Radiant Claims
Lemhi Co., Idaho
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F. D. Lamb, 3649

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

So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG 29 1955

August 25, 1955

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

Re: Docket No. DMEA-3882 (thorium-monazite)
Knowles Fisher Corporation
Radiant Claims
Lemhi County, Idaho

Dear Mr. Selfridge:

Enclosed are four copies of an examination report on the Knowles-Fisher property by H. B. Nickelson, Geologist, U. S. Geological Survey.

The single exposed portion of the vein contains about 0.12 percent thorium oxide. Other veins in the area also contain only minor amounts of thorium oxide, and it does not seem probable that exploration of this vein will discover higher grade concentrations than that indicated by the assay data.

We recommend that the application be denied.

By Field Team, Region I, NW District

Wing G. Agnew
~~Wing G. Agnew, Acting~~ Exec. Officer
U. S. Bureau of Mines

James J. Quinlan
James J. Quinlan, Acting Member
U. S. Geological Survey

Enclosures

cc: USBM (2)
E. P. Kaiser
Nickelson

Reviewed by
DMEA OPERATING COMMITTEE
9-2-55
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~

So. 157 Howard Street
Spokane 4, Washington

RECEIVED
AUG 29 1956

August 25, 1955

Memorandum

To: DMEA Field Team, Region I, Northwest District

From: Howard B. Nickelson, Geologist, U. S. Geological Survey

Subject: Field examination report, Docket No. DMEA-3882 (thorium-monazite), Knowles-Fisher Corporation, Gowanda, New York, Radiant Claims, Lemhi County, Idaho

Introduction

The prospect was examined on July 26, 1955. Dr. Allen Tester, consulting geologist for the applicant, Miley Evans and Reese Esgar, stockholders, and Tom Huber, geologist, U. S. Geological Survey, accompanied the examiner. The pit was mapped and sampled and a counter was used to check the ground the applicant proposed to explore.

Summary

The only exposure of the vein is at a pit; here the mineralized vein, 16 feet wide, is found in an augen gneiss. Samples taken by Gene Tom of Lindsay Chemical Company indicate the thorium contact across the zone averages 0.3 percent thorium oxide. Samples taken by the examiner averaged 0.12 percent thorium oxide which confirms the results of Gene Tom's sampling.

No lateral extent has been shown by the applicant. The examiner believes, however, there is a northwest-trending mineralized zone that may contain pods of thorite. Additional hand trenches or dozer trenches would be needed to determine the strike length along the zone and to determine the grade of the material. This prospecting would be expensive because the hill slopes are steep, and the overburden is deep.

Recommendations

It is recommended that the application be denied because the grade of the material exposed is too low to constitute ore. Available evidence suggests that ore-grade concentrations of thorite in this district are quite uncommon, if present.

Reviewed by
DMEA OPERATING COMMITTEE

9-2-55
(date)

Location of the Property

The property is in the Indian Creek mining district, T. 24 N., R. 20 W., Lemhi County, Idaho, approximately 4-1/2 miles down the Salmon River from Northfork, Idaho. The prospect pit is on the south bank of the river and can be reached by crossing the river by boat. The property is accessible throughout the year.

Property Rights

Ownership of the claims, which are held by right of location, is as follows:

Knowles-Fisher Corp.	63-1/2 percent
Kenneth White	21-1/2 "
Miley Evans	7-1/2 "
Reese Esgar	7-1/2 "

The owners have incorporated as the Knowles-Fisher Corporation.

Description of the Property

The only working on the property is a hand-excavated pit. No equipment or housing is on the property.

Geology

The country rocks in the vicinity of the prospect are metamorphosed sediments of the Belt Series consisting of schists and augen gneisses. Diorite dikes and bull quartz veins seem to cut across the bedding. A mineralized zone, following what appears to be bedding, extends for a mile or more in a northwest direction. This mineralized zone on the north side of the river was examined by E. P. Kaiser, U. S. Geological Survey. Kaiser discussed the area with Thor Kiilsgaard on July 21, 1955, and Kaiser's impression of the area is given in a letter from Kiilsgaard, dated July 22, 1955, to A. E. Weissenborn, Executive Officer, DMEA Field Team:

> ". . . Pete said that he had been on that part of the Radiant property lying north of the Salmon River but that he had not seen the vein on the south side where the applicant has proposed exploration. He describes the property as occurring at the southeast end of a narrow northwest-trending belt in which is contained numerous monazite and thorite veins. As he puts it, the belt more or less shows a zoning structure, containing columbite on the northwest end, radio-active rutile in the center, and thorite on the southeast end. Pete says that none of the deposits are of economic proportion although they present interesting

mineralogy. He is of the opinion that the Radiant group probably contains thorite as bunchy, sporadic concentrations, but that the grade across the vein would not be enough to constitute ore. In short, he questions any good that might be obtained from the proposed project. . . ."

According to Kaiser's description, the north portion of the vein is spotty and from what could be seen of the vein south of the river this appears to be true there also.

A slight increase in count was observed for 6 to 10 feet above the pit on what is believed to be the extension of the zone. A ridge of outcrop was carefully checked for the typical reddish coloration of the vein and only a narrow, weakly-stained zone, perhaps one foot wide, was seen. A wide zone 100 feet or more south and slightly west of the pit did increase the count off the prospect scale. What caused the high count in this area is not known; no thorium mineral could be observed as the ground was covered with thick grass, brush, and deep overburden.

The locations of four samples taken across the vein are shown on the accompanying map. The assays ranged from 0.09 percent to 0.14 percent thorium oxide and averaged 0.12 percent thorium oxide.

Photograph A, below, shows the projection of the vein and the area of increased radioactivity. The pit is shown on Photograph B. These photos were taken on the north side of the river.

Photograph A

Photograph B

RECEIVED
AUG 2 9 1955

The enclosed map shows the geology of the pit, sample locations and assay results.

Applicant's Exploration Program

The applicant desires to explore the prospect by driving a crosscut to the vein from the location shown on the enclosed map and drifting for a total of 500 feet. Additional work would consist of 160 hours of bulldozing and 1,500 feet of diamond drilling. No sequence of exploration was outlined, and it is assumed the drifting and bulldozing would be done at the same time. Bulldozing would be expensive, as the overburden is deep and the hill slopes average about 35°. The costs estimated by the applicant, except for the bulldozing, are lower than other DMEA projects in the area.

Conclusion

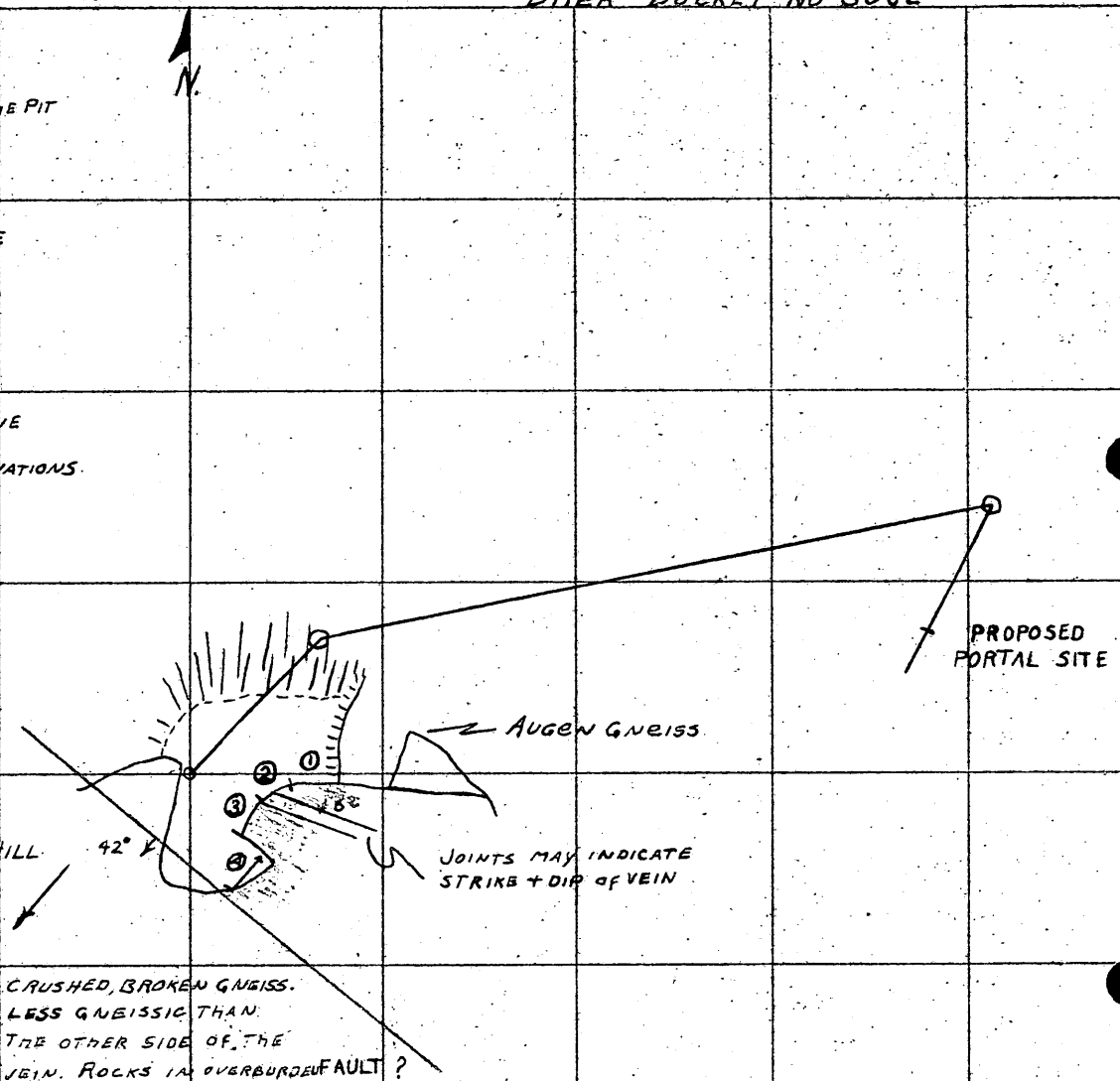
The material in the pit is too low grade to constitute ore. Present evidence suggests the existence of only small mineralized pods of questionable grade anywhere in this general area.

Enclosure

Distribution:
- DMEA (4)
- USBM (2)
- USGS (SRO)
- Docket
- E. P. Kaiser
- Nickelson

DMEA DOCKET NO 3882

A ZONE APPROXIMATELY 400' S 30E FROM THE PIT HAD 12 COUNT ON .2 SCALE OREMASTER. ANOTHER NARROWER & WEAKER ZONE STRIKES S45E THRU THE GULCH. THIS GAVE A MUCH WEAKER COUNT OVER A SHORTER DISTANCE & SO APPEARS TO BE NARROWER. ACROSS THE RIVER APPLICANT CLAIMS A HIGH COUNT ZONE EXISTS THAT STRIKES N47 W & DIPS 45° TO 60° SW. THIS ZONE CORRESPONDS FAIRLY WELL WITH OBSERVATIONS IN THE PIT.



Assays	% ThO_2
1. (401B)	0.14
2 (402B)	0.10
3 (403B)	0.09
4 (404B)	0.14

'KNOWLES-FISHER' PROPERTY
LEMHI COUNTY, IDAHO
SCALE 1" = 20'

HBN July, '55

COPY

NL PD - ALBUQUERQUE NMEX 18 1955 JUL 19 AM 6 15

VERNE C FRYKLUND JR

DMEA SOUTH 157 HOWARD ST SPOKANE WASH

REFERENCE YOUR LETTER JULY 12 TO C. E. KNOWLES GOWANDA NEW YORK SUBJECT DOCKET NUMBER 3882 STATING PLAN MR. NICKELSON TO BE IN SALMON IDAHO JULY 25. PLEASE ADVISE ME BY TELEGRAM AT GALLUP NEW MEXICO IF POSSIBLE TO POSTPONE MEETING IN SALMON TO JULY 30

ALLEN C TESTER

cc: DMEA (2)
USBM (2)
Nickelson
Incoming

RECEIVED
AUG 1 1955

COPY

NL PD - ALBUQUERQUE NMEX 18 1955 JUL 19 AM 6 13

VERNE C KNOLLEND JR

IMSA SOUTH 157 HOWARD ST SPOKANE WASH

REFERENCE YOUR LETTER JULY 12 TO C. E. KNOALES GOMAHDA NEW YORK SUBJECT BOOKEP NUMBER 3082 STATING PLAN MR. NICKELSON TO BE IN SALMON IDAHO JULY 25. PLEASE ADVISE ME BY TELEGRAM AT GALLUP NEW MEXICO IF POSSIBLE TO POSTPONE MEETING IN SALMON TO JULY 30

ALLEN C TESTER

cc: IMSA (2)
WMSA (2)
Nickelson
Incoming

RECEIVED
AUG 1 2 1955

7/19/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL 1 6 1955

July 15, 1955

Memorandum

To: Ernest William Ellis, Chief, Division of Rare and Misc. Metals, DMEA

From: Assistant Chief, Branch of Rare and Precious Metals

Subject: DMEA Docket No. 3882, Thorium-Monazite-Ilmenite, application of C. E. Knowles, Knowles-Fisher Corp., Gowanda, New York.

I have reviewed the subject application requesting assistance in conducting an investigation of an occurrence of thorite in Lemhi County, Idaho, and discussed the proposal with Mr. J. O. Hosted of the Atomic Energy Commission.

While the evidence presented is limited, it indicates that a considerable tonnage of thorite ore may be present in the area under consideration. Mr. Hosted and I agree that the application should be referred to the Field Team for an examination and opinion. It is suggested that the DMEA examining engineer contact Mr. E. E. Thurlow, of the U. S. Atomic Energy Commission, Division of Raw Materials, Salt Lake Exploration Branch, Salt Lake City 4, Utah, regarding any information concerning the deposit that may be available in that office.

The application is returned herewith.

Frank D. Lamb

Frank D. Lamb.

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL 1955

July 15, 1955

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From: Assistant Chief, Branch of Rare and Precious Metals

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While the evidence presented is limited, it indicates that a considerable tonnage of thorite ore may be present in the area under consideration. Mr. Hosted and I agree that the application should be referred to the Field Team for an examination and opinion. It is suggested that the DMEA examining engineer contact Mr. R. E. Thurlow, of the U. S. Atomic Energy Commission, Division of Raw Materials, Salt Lake Exploration Branch, Salt Lake City 4, Utah, regarding any information concerning the deposit that may be available in that office.

The application is returned herewith.

Attachment

Frank D. Lamb.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL 18 1955

July 15, 1955

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While the evidence presented is limited, it indicates that a considerable tonnage of thorite ore may be present in the area under consideration. Mr. Hosted and I agree that the application should be referred to the Field Team for an examination and opinion. It is suggested that the DMEA examining engineer contact Mr. E. K. Thurlow, of the U. S. Atomic Energy Commission, Division of Raw Materials, Salt Lake Exploration Branch, Salt Lake City 4, Utah, regarding any information concerning the deposit that may be available in that office.

The application is returned herewith.

Attachment

Frank D. Lamb.

FDLamb:md

Copy to: Division of Minerals
Branch of Rare and Precious Metals
J. O. Hosted - 2
F. D. Lamb
F i l e s

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JUL 1 2 1955

July 15, 1955

Memorandum

To: Ernest William Ellis, Chief, Division of Rare and Minor Metals, DMEA

From: Assistant Chief, Branch of Rare and Precious Metals

Subject: DMEA Docket No. 1882, Thorium-Monazite-Ilmenite, application of C. K. Knudsen, Knudsen-Fisher Corp., Gouverneur, New York.

I have reviewed the subject application requesting assistance in conducting an investigation of an occurrence of thorite in Lemhi County, Idaho, and discussed the proposal with Mr. J. O. Nested of the Atomic Energy Commission.

While the evidence presented is limited, it indicates that a considerable tonnage of thorite ore may be present in the area under consideration. Mr. Nested and I agree that the application should be referred to the Field Team for an examination and opinion. It is suggested that the DMEA examining engineer contact Mr. K. K. Thurlow, of the U. S. Atomic Energy Commission, Division of Raw Materials, Salt Lake Exploration Branch, Salt Lake City 4, Utah, regarding any information concerning the deposit that may be available in that office.

The application is returned herewith.

Attachment

Frank D. Lamb.

FDLamb:md

Copy to: Division of Minerals
Branch of Rare and Precious Metals
J. O. Nested - 2
F. D. Lamb
F i l e s

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BUREAU OF MINES
WASHINGTON 25, D. C.

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July 15, 1955

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To: Ernest William Ellis, Chief, Division of Rare and Misc. Metals, DMEA

From: Assistant Chief, Branch of Rare and Precious Metals

Subject: DMEA Docket No. 3882, Thorium-Monazite-Ilmenite, application of C. E. Knowles, Knowles-Fisher Corp., Gouverneur, New York.

I have reviewed the subject application requesting assistance in conducting an investigation of an occurrence of thorite in Lemhi County, Idaho, and discussed the proposal with Mr. J. C. Hosted of the Atomic Energy Commission.

While the evidence presented is limited, it indicates that a considerable tonnage of thorite ore may be present in the area under consideration. Mr. Hosted and I agree that the application should be referred to the Field Team for an examination and opinion. It is suggested that the DMEA examining engineer contact Mr. E. E. Thurlow, of the U. S. Atomic Energy Commission, Division of Raw Materials, Salt Lake Exploration Branch, Salt Lake City 4, Utah, regarding any information concerning the deposit that may be available in that office.

The application is returned herewith.

Attachment

Frank D. Lamb.

7/14/55 glc

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Memorandum

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

From: Thor H. Kiilsgaard, U. S. Geological Survey

Subject: Review of application, Knowles-Fisher Corp., Lemhi County, Idaho, DMEA Docket 3882.

The applicant proposes to explore the Radiant claims, Lemhi County, Idaho, by 500 feet of adit, 1,500 feet of core drilling, and 160 hours of bulldozing. Estimated cost of the project is $23,017.00.

The target to be explored is a mineralized zone, up to 16 feet wide, which is more or less conformable to the enclosing augen-gneiss. The principal ore mineral within the zone is reported to be thorite, although monazite is also present. A sample across the 16-foot zone averaged 0.3 percent ThO_2.

The area in which the applicants are working has been subject to much interest during recent years because of the presence of monazite in vein deposits, an unusual occurrence. Several companies have sent geologists to examine these deposits. The U. S. Geological Survey has had Mr. Pete Kaiser studying the area; he is to be there during the current summer to continue this work. I am not sure of the location of the applicant's vein, with respect to the monazite veins, but suspect it is nearby if not a member of the vein pattern. For this reason, I wonder if the thorium is not in monazite instead of in thorite as reported by the applicant. This could be an important determination because the deposit will probably be more valuable if the mineral is thorite than if monazite. Monazite rarely contains more than 10 percent thorium, whereas thorite could contain up to 70 percent thorium. Figuring the current, reported market price of $1.10 per pound for 10 percent thorium, a vein of monazite would not be of much value for its thorium content. Certainly, a vein averaging 6 pounds of thorium per ton could not be considered as ore.

In reviewing this application it is suggested that it be compared with the Defense Metals contract, Docket 2535. This project also explored for thorium in an area not too far from the one in question. As it is now a completed project, perhaps information gained from it will be of assistance in evaluating the current application.

The application should be referred to the Field Team for a field report. I shall contact Pete Kaiser and ask for any information he might have on the property, requesting that he direct his comments to the Field Team.

Thor H. Kiilsgaard

Thor H. Kiilsgaard

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Memorandum

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

From: Thor N. Kiilsgaard, U. S. Geological Survey

Subject: Review of application, Knowles-Fisher Corp., Lemhi County, Idaho, DMEA Docket 3802.

The applicant proposes to explore the Radiant claims, Lemhi County, Idaho, by 500 feet of adit, 1,500 feet of core drilling, and 160 hours of bulldozing. Estimated cost of the project is $23,017.00.

The target to be explored is a mineralized zone, up to 16 feet wide, which is more or less conformable to the enclosing augen-gneiss. The principal ore mineral within the zone is reported to be thorite, although monazite is also present. A sample across the 16-feet zone averaged 0.3 percent ThO_2.

The area in which the applicants are working has been subject to much interest during recent years because of the presence of monazite in vein deposits, an unusual occurrence. Several companies have sent geologists to examine these deposits. The U. S. Geological Survey has had Mr. Pete Kaiser studying the area; he is to be there during the current summer to continue this work. I am not sure of the location of the applicant's vein, with respect to the monazite veins, but suspect it is nearby if not a member of the vein pattern. For this reason, I wonder if the thorium is not in monazite instead of in thorite as reported by the applicant. This could be an important determination because the deposit will probably be more valuable if the mineral is thorite than if monazite. Monazite rarely contains more than 10 percent thorium, whereas thorite could contain up to 70 percent thorium. Figuring the current, reported market price of $1.10 per pound for 10 percent thorium, a vein of monazite would not be of much value for its thorium content. Certainly, a vein averaging 6 pounds of thorium per ton could not be considered as ore.

In reviewing this application it is suggested that it be compared with the Defense Metals contract, Docket 2535. This project also explored for thorium in an area not too far from the one in question. As it is now a completed project, perhaps information gained from it will be of assistance in evaluating the current application.

The application should be referred to the Field Team for a field report. I shall contact Pete Kaiser and ask for any information he might have on the property, requesting that he direct his comments to the Field Team.

Thor H. Kiilsgaard

THKiilsgaard:iml
G-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
F. D. Lamb, 3649

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Memorandum

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

From: Thor N. Kiilsgaard, U. S. Geological Survey

Subject: Review of application, Knowles-Fisher Corp., Lemhi County, Idaho, DMEA Docket 3882.

The applicant proposes to explore the Radiant claims, Lemhi County, Idaho, by 500 feet of adit, 1,500 feet of core drilling, and 160 hours of bulldozing. Estimated cost of the project is $23,617.00.

The target to be explored is a mineralized zone, up to 16 feet wide, which is more or less conformable to the enclosing augen-gneiss. The principal ore mineral within the zone is reported to be thorite, although monazite is also present. A sample across the 16-foot zone averaged 0.3 percent ThO_2.

The area in which the applicants are working has been subject to much interest during recent years because of the presence of monazite in vein deposits, an unusual occurrence. Several companies have sent geologists to examine these deposits. The U. S. Geological Survey has had Mr. Pete Kaiser studying the area; he is to be there during the current summer to continue this work. I am not sure of the location of the applicant's vein, with respect to the monazite veins, but suspect it is nearby if not a member of the vein pattern. For this reason, I wonder if the thorium is not in monazite instead of in thorite as reported by the applicant. This could be an important determination because the deposit will probably be more valuable if the mineral is thorite than if monazite. Monazite rarely contains more than 10 percent thorium, whereas thorite could contain up to 70 percent thorium. Figuring the current, reported market price of $1.10 per pound for 10 percent thorium, a vein of monazite would not be of much value for its thorium content. Certainly, a vein averaging 6 pounds of thorium per ton could not be considered as ore.

In reviewing this application it is suggested that it be compared with the Defense Metals contract, Docket 8535. This project also explored for thorium in an area not too far from the one in question. As it is now a completed project, perhaps information gained from it will be of assistance in evaluating the current application.

The application should be referred to the Field Team for a field report. I shall contact Pete Heiser and ask for any information he might have on the property, requesting that he direct his comments to the Field Team.

Thor H. Kiilsgaard

THKiilsgaard:iml
G-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
RMA (3)
Docket file
F. B. Lamb, 3649

IN REPLY REFER TO:

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

RECEIVED
JUL 14 1955

July 13, 1955

Memorandum

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

From: Thor N. Kiilsgaard, U. S. Geological Survey

Subject: Review of application, Knowles-Fisher Corp., Lemhi County, Idaho, DMEA Docket 3882.

The applicant proposes to explore the Radiant claims, Lemhi County, Idaho, by 300 feet of adit, 1,500 feet of core drilling, and 160 hours of bulldozing. Estimated cost of the project is $23,017.00.

The target to be explored is a mineralized zone, up to 16 feet wide, which is more or less conformable to the enclosing sugar-quartzite. The principal ore mineral within the zone is reported to be thorite, although monazite is also present. A sample across the 16-foot zone averaged 0.3 percent ThO_2.

The area in which the applicants are working has been subject to much interest during recent years because of the presence of monazite in vein deposits, an unusual occurrence. Several companies have sent geologists to examine these deposits. The U. S. Geological Survey has had Mr. Pete Kaiser studying the area; he is to be there during the current summer to continue this work. I am not sure of the location of the applicant's vein, with respect to the monazite veins, but suspect it is nearby if not a member of the vein pattern. For this reason, I wonder if the thorium is not in monazite instead of in thorite as reported by the applicant. This could be an important determination because the deposit will probably be more valuable if the mineral is thorite than if monazite. Monazite rarely contains more than 10 percent thorium, whereas thorite could contain up to 70 percent thorium. Figuring the current, reported market price of $1.10 per pound for 10 percent thorium, a vein of monazite would not be of much value for its thorium content. Certainly, a vein averaging 6 pounds of thorium per ton could not be considered as ore.

In reviewing this application it is suggested that it be compared with the Defense Metals contract, Docket 8535. This project also explored for thorium in an area not too far from the one in question. As it is now a completed project, perhaps information gained from it will be of assistance in evaluating the current application.

The application should be referred to the Field Team for a field report. I shall contact Pete Kaiser and ask for any information he might have on the property, requesting that he direct his comments to the Field Team.

Thor E. Kilagaard

TEKilagaard:iml
6-7/13/55

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
F. B. Lamb, 3649

7/19/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
JUL 18 1955

XXXXXXXXXXXXXXXXXXXX C.
So. 157 Howard Street
Spokane 4, Washington

AIRMAIL

July 12, 1955

Mr. C. E. Knowles
Knowles-Fisher Corp.
Gowanda, New York

Re: Docket No. DMEA-3882 (thorite-monazite-ilmenite)
Unnamed property
Lemhi County, Idaho

Dear Mr. Knowles:

Mr. H. B. Nickelson, geologist from this office, plans to make an examination of your monazite property at Shoup, Idaho, on July 26 and 27, 1955. Mr. Nickelson will be in Salmon, Idaho, the night of July 25 and the morning of July 26.

It would be appreciated if you or your representative could be present during the examination.

Sincerely yours,

Verne C. Fryklund, Jr.
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, N.W. Dist.

cc: DMEA (2)
USBM (2)
Nickelson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D. C.~~
No. 157 Howard Street
Spokane 4, Washington

RECEIVED
JUL 18 1955

AIRMAIL

July 12, 1955

Mr. C. E. Knowles
Knowles-Fisher Corp.
Gowanda, New York

Re: Docket No. DMEA-3882 (thorite-monazite-ilmenite)
Unnamed property
Lemhi County, Idaho

Dear Mr. Knowles:

Mr. N. B. Nickelson, geologist from this office, plans to make an examination of your monazite property at Shoup, Idaho, on July 26 and 27, 1955. Mr. Nickelson will be in Salmon, Idaho, the night of July 25 and the morning of July 26.

It would be appreciated if you or your representative could be present during the examination.

Sincerely yours,

Verne C. Fryklund, Jr.
for A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region I, N.W. Dist.

cc: DMEA (2)
DGSM (2)
Nickelson

RECEIVED
JUL - 1 1955

June 20, 1955

United States Department of the Interior
Defense Minerals Exploration Administration
Washington, D. C.

Re: Application for Aid in a Exploration Project

Gentlemen:

The six "Consent to Lien" forms are now partially signed and are in the mail for the balance of the signatures. The only trouble we anticipate is catching up with two parties who are prospectors and are somewhere in the mountains at present. However, these forms should be back signed within a week or ten days.

The percentage of ownership is as follows:

Knowles-Fisher Corp.	63⅓%
Kenneth White	21⅓%
Wiley Evans	7⅓%
Reese Eggar	7⅓%
	100 %

Very truly yours

KNOWLES-FISHER CORP.

C. E. Knowles

C. E. Knowles

CEK:rf

encl.

Mr-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
JUL - 1 1955

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. 3882
Metal or Mineral Thorium-Monazite-Ilmenite
Date Received 7-1-55
Estimated Cost $23,017
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: C. E. Knowles
Knowles-Fisher Corp.,
Gowanda, New York.

(*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 Land unsurveyed; estimated by projection of adjacent surveyed land to be in sec. 26, T.24 N., R. 20 E., Boise Meridian, Lemhi County, Idaho. Project to be on Radiant Mineral Claim no. 104; adjacent claims nos. 101-102-103-105-106-107 and 108.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Controlling interest in recorded claims. See attached sheet

(*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 None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Claim no.104 recorded Nov.7,1953 Book 5, page 272, Lemhi County Ida
Claim no.103 " Nov.17,1953 " 5, " 281 " "

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. See attached sheet

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. None

(*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. See attached sheet

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

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

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Thorite, Monazite, Ilmenite

(*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. See attached sheet

(*c*) The work will start within 90 days and be completed within 6 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. See attached sheet

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)? Yes

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated May 12, 1954

C. E. Kimmel
(Applicant)

By

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

Form MF-103

Application for aid in an exploration project, pursuant to DMEA Order 1, under the defense production act of 1950, as amended.

3 (d) Claim 104 recorded under names of White, Evans, Knowles and Esgar.

4 (a) Exploration of thorite-bearing vein has been done by tracing surface exposures and opening a large pit at the base of steep slope cutting the strike of the vein. Approximately 20 feet has been exposed across the vein for a height of about 12 feet.

No actual mining nor production of ore has been done. The open pit is available for examination, though some slumping has covered a part of the exposed vein. All operations have been done at my expense.

4 (b) None

4 (c) The area is a deeply eroded terrain of metamorphosed Belt Series (pre-Cambrian) sedimentary rocks. The topography is of rugged, steep ridges and canyons, bordering the Salmon River.

The highly metamorphosed sediments indicate by vestiges of sedimentary structures a strike of North 54° West with dips 73-80 degrees, to 110° (overturned 20°) direction right and left, due to close folds, in the area. The zone of mineralization is bordered on both sides by wide belts of coarse augen-gneiss with interzones of feldspathic and mica schists. Bull quartz veins at irregular intervals cross approximately normal to the strike of the principal rocks. Small dioritic dikes were observed in the area.

The principal zone of mineralization is 16 feet wide in the prospect pit and appears to be approximately parallel to the strike of the metamorphosed sediments, but there are places where the vein shows a divergence of 10 to 15 degrees; the dip of the zone in the immediate area is steep and nearly the same as the country rock.

The vein may be a hydrothermal alteration of a pre-existing carbonate-bearing zone in the sediments as evidenced by the presence of monazite, actinolite, tremolite, siderite and some calcite, accompanied by injected mineral solutions providing thorite, ilmenite, allanite, and some quartz. Thorite also occurs disseminated in the augen-gneiss wall rock.

The apparent reason for wishing to explore the claims is the relative abundance of thorite in the mineralized zone. Accompanying assays and reports (to be returned to applicant) support this belief.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

4 (d) The claims are located adjacent to the south bank of the Salmon River. A good natural gravel road is on the north side of the River, but there are no bridges for vehicles for many miles. No other roads are available for access to the claims. (A cable car crossing is contemplated for men and materials). At present, access to the claims is by boat crossing. The Salmon River is too deep and swift to ford vehicles.

The forest service road on the north side of Salmon River connects with U.S. 93 at North Fork, 4 miles upstream. Darby, Montana, the nearest rail point, is 53 miles north of North Fork on U.S. 93, and Missoula, Montana is 64 miles farther north. Salmon, Idaho, without railroad, is 26 miles south of the claims, on U.S. 93, and is the normal supply and residence point.

4 (e) Manpower is generally available at Salmon, and in the surrounding mining areas.

General supplies and materials are available at Salmon, Idaho, but Missoula, Montana (121 miles) would be the major source of mining machinery and heavy equipment. Ample water is available from the adjacent Salmon River. Electric power is available from transmission line at North Fork (4 miles).

5 (a) See application form.

5 (b) The proposed work includes two types:

1) A drift tunnel in solid ground following the lead of the vein and zone of mineralization, to obtain true characteristics free from slumping and surface weathering.

By starting the drift at the face of the present prospect pit and following the footwall, the tunnel would penetrate solid ground and prospect the zone of mineralization at considerable depth (300 feet plus) below the topographic surface.

2) Surface test pitting and bull-dozer trenching along the strike of the vein and the trace on the high ridges. Core drilling at appropriate indications.

5 (c) Answered on the application.

5 (d) Dr. Allen Tester, Geologist, age 57, 35 years teaching and field work. Will handle all geological work.

Cpyle E. Knowles, Civil Engineer, age 54, Civil Engineering and General Construction for 30 years. Will either hire rock work done or supervise.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

6 Total estimated cost: $23,017.00.

6 (a) All tunnel and surface exploration to be contracted.

Estimates of each type:

Tunnelling, at $20.00 per ft. x 500 ft.	$10,000.
Core drilling at $3,00 per ft. x 1500 ft.	4,500.
Bulldozer work at $12.50 per hr. x 160 hrs.	2,000.
Total Contract	$16,500.

6 (b) Labor included in contracted work: geological and engineering consultants and expenses $ 2,475.

6 (c) Included with contract estimates.

6 (d) Operating equipment costs, rentals etc., to be included with contracted work.

6 (e) Not applicable.

6 (f) Estimates for new operating installations:

Cable car crossing Salmon River	$ 850.00
Tool, equipment, and working shed	300.00
Powder magazines, excavation and materials	150.00
	$ 1,300.00

6 (g) Analytical work $400.00; core boxes $100.00; accounting $150.00. Balance not applicable, to be included with contracts. $ 650.00

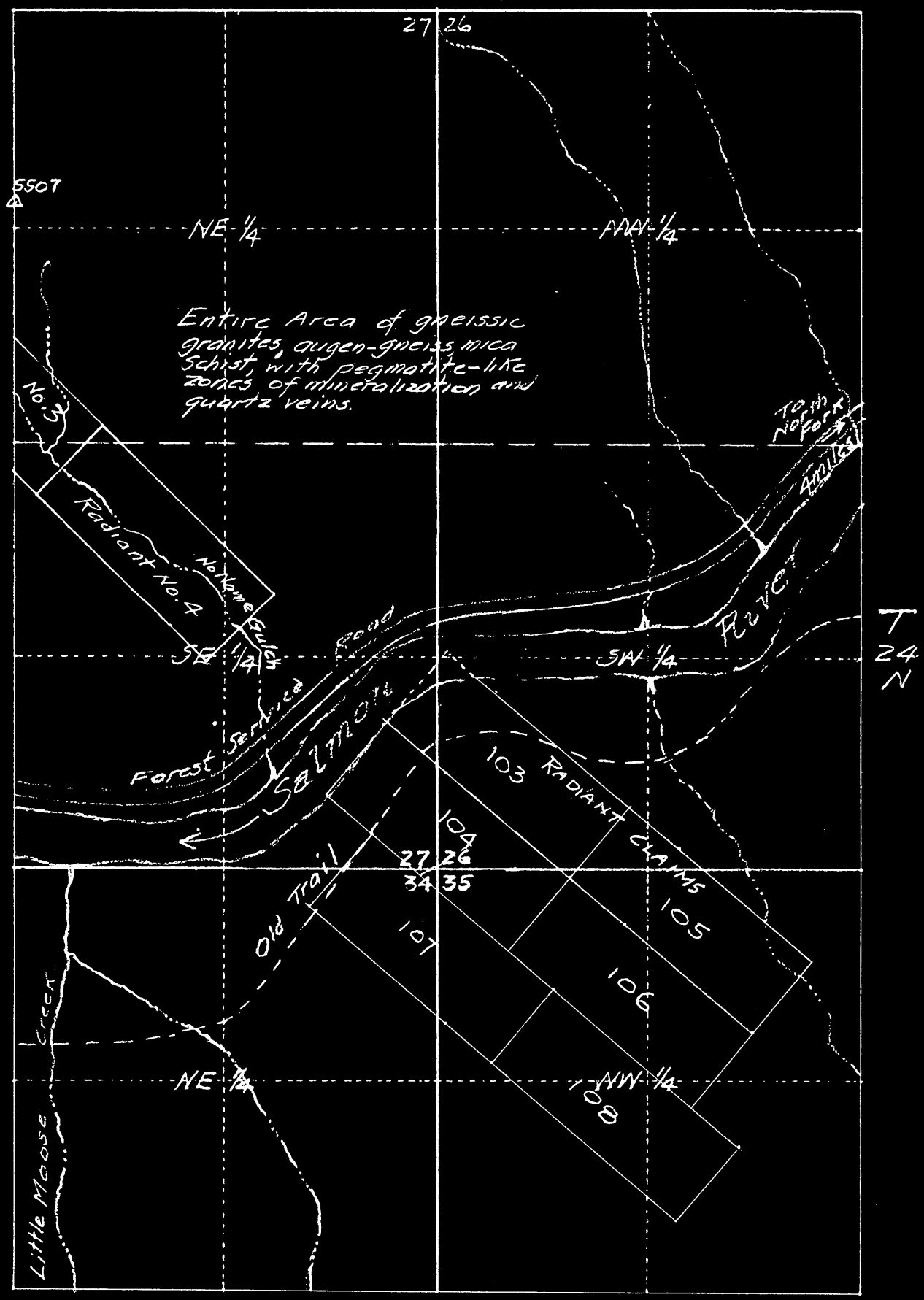
6 (h) Contingencies: 10% of estimated costs $ 2,092.00

7 (a) Yes

7 (b) Money and equipment.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

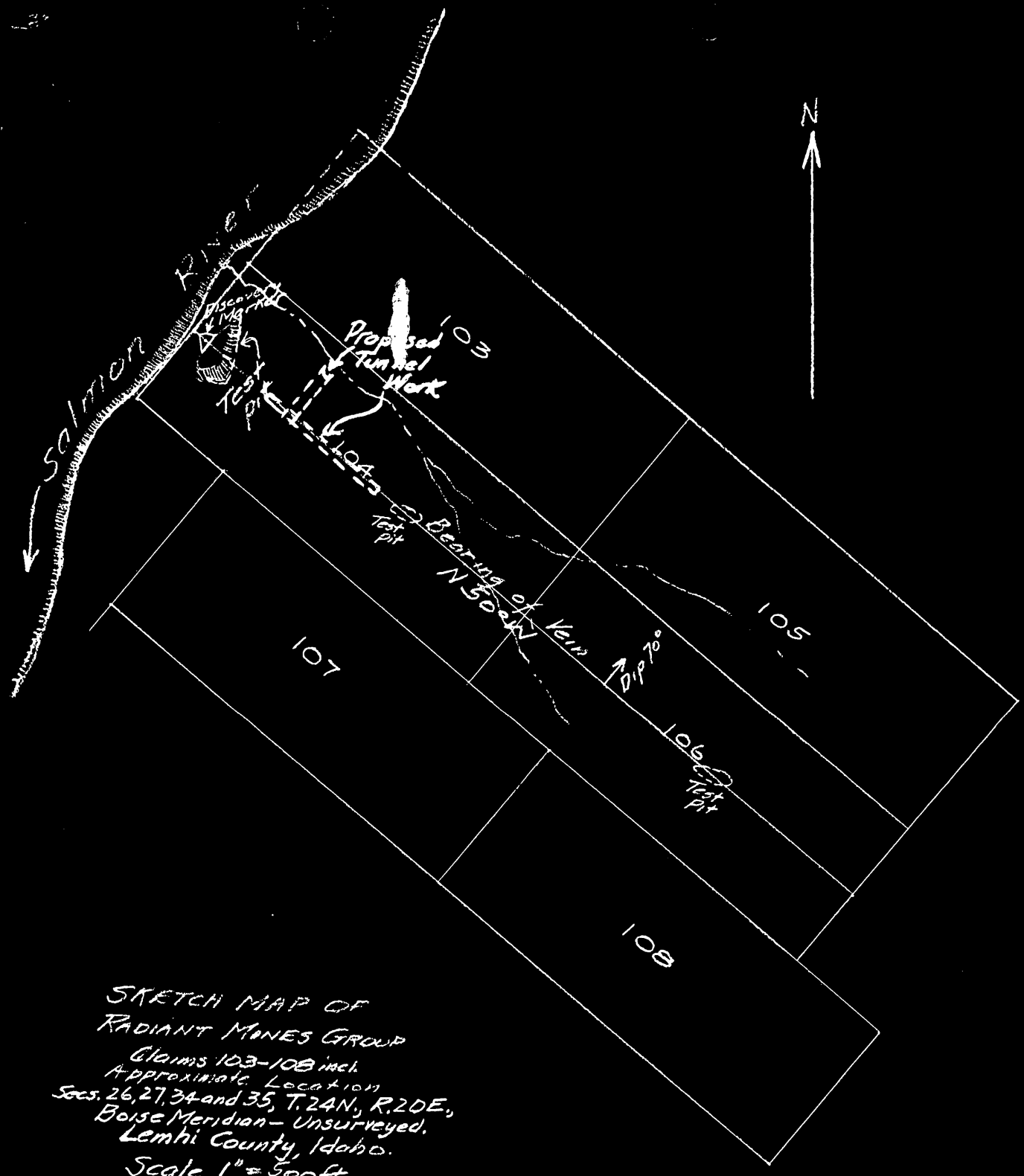
LOCATION MAP RADIANT CLAIMS
LEMHI COUNTY IDAHO



Map Modified from U.S. Forest Service
Salmon National Forest
Land Sections Not Surveyed = Hypothetical Extension
from survey east of area. (Boise Meridian)
Scale 1" = 880 ft.

RECEIVED
JUL 1 1955

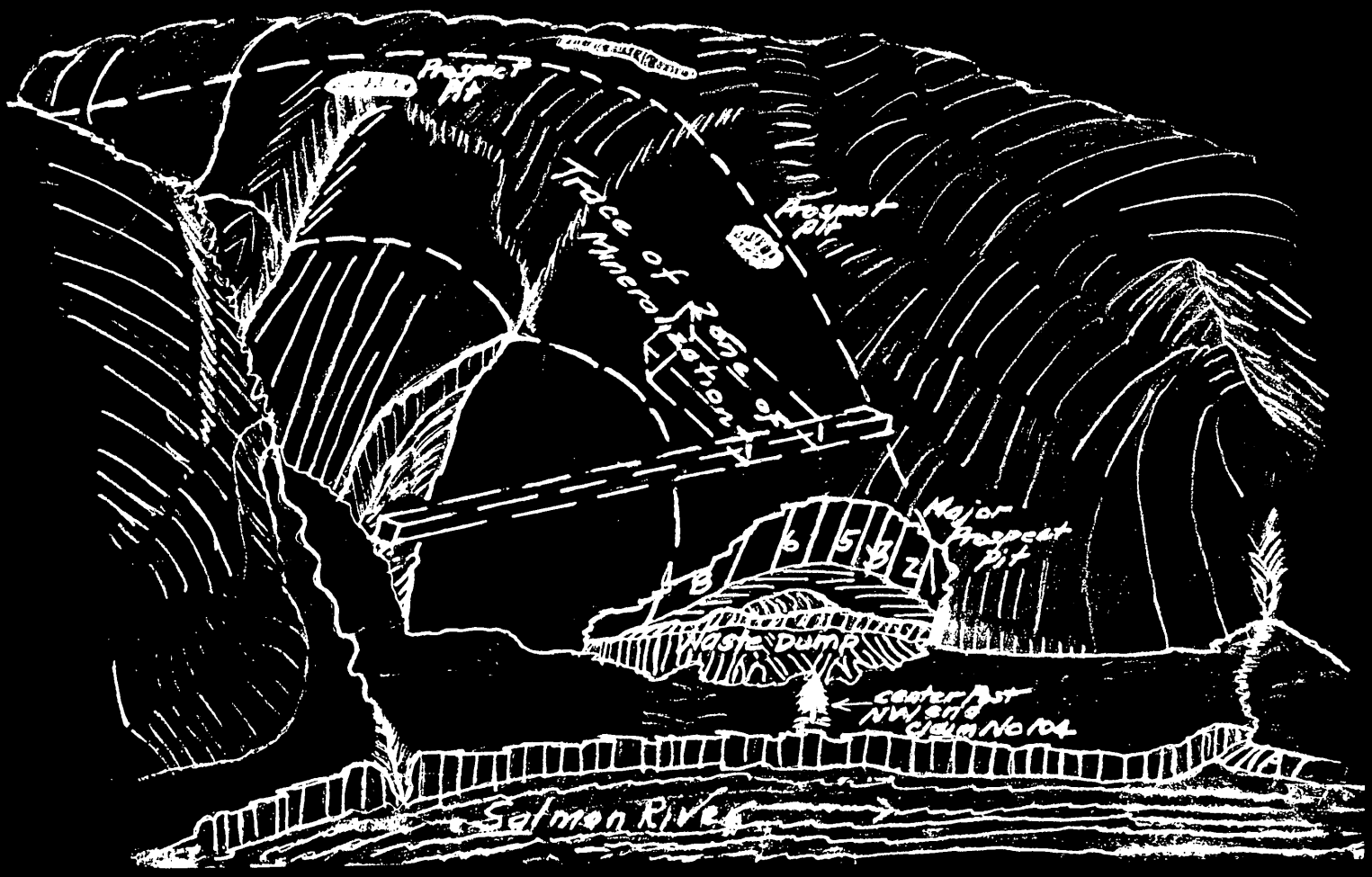
C. E. KNOWLES
KNOWLES-FISHER CORP.
CONANDA, NEW YORK



SKETCH MAP OF
RADIANT MINES GROUP
Claims 103-108 incl.
Approximate Location
Secs. 26, 27, 34 and 35, T. 24N., R. 20E.,
Boise Meridian - Unsurveyed.
Lemhi County, Idaho.
Scale 1" = 500 ft.

RECEIVED
JUL - 1 1955

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK



DIAGRAMMATIC SKETCH

Looking Southeast Along Strike of Zone of Mineralization of Radiant Claim No. 104. Lemhi County, Idaho.

Not Drawn to Scale: Approximate Heighth of Ridge in Foreground 500 feet above River Level. Width of Prospect Pit Face About 25 Feet.

Proposed Tunnel Work Shown by----Lines". Surface Trenching to be Done Along Trace of Zone Connecting Surface Prospects.

Numbers on Face of Prospect Pit Refer to Zones Sampled as Identified in Analyses Submitted with Application.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

TRINITY 4791 FORM 80

COPY

SMITH-EMERY COMPANY

CHEMICAL ENGINEERS AND CHEMISTS
METALLURGICAL AND TESTING ENGINEERS
920 SANTEE STREET
LOS ANGELES 15
CALIFORNIA

OUR NEW ADDRESS
781 E. WASHINGTON BLVD.
LOS ANGELES 21, CALIFORNIA

Return to Applicant

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

LABORATORY No. 388465

Date August 18, 1954.

Sample Ore

Received 8-10-54

Submitted by A.C. Tester, Salmon, Idaho.

Marked "KT 54-SR-8"
(Sample from claim 104, zone 8, composite of 1.5 ft. across zone. Rock is augen-gneiss with feldspars, large porphyry crystals; quartz, mica, and amphiboles. Thorite disseminated in rock; RA very strong, count 17 on 20.0 scale 'High'. ACT)

REPORT OF QUALITATIVE SPECTROGRAPHIC EXAMINATION

Copy to CEK 8/21/54

Element	*Approximate Quantity*
Silicon, Aluminum	Major Constituents.
Calcium, Iron, Sodium	Intermediate Constituents.

Minor Constituents:	
Titanium	0.5%
Barium	0.5%
Magnesium	0.1%
Zirconium	0.05%
Manganese	0.05%
Strontium	0.01%
Lead	0.005%
Boron	0.005%
Vanadium	0.005%
Copper	0.005%
Gallium	0.005%
Chromium	0.001%
Cobalt	Trace
Thorium	Present
Rare Earths	Present
Tungsten	None found
Bismuth	None found
Molybdenum	None found
Uranium	None found
Nickel	None found
Potassium	None found
Columbium	None found
Tantalum	None found

Remarks: There is considerable radioactivity in this sample.

Respectfully submitted,

CHEMISTS AND ENGINEERS.

All reports are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions, or extracts from or regarding them is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

(See statements on reverse side regarding qualitative spectrographic examination)

PROSPECT 3411

FORM 1

COPY

LABORATORY REPORT

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

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C. E. KNOWLES
KNOWLES-FISHER
CORP.
GOWANDA, NEW YORK

LABORATORY No. 388466-67-ADD

Date August 21, 1954

Sample Ore

Received 8/10/54

Marked

Return to Applicant

Submitted by A.C.Tester,
General Delivery,
Salmon, Idaho.

REPORT OF DETERMINATIONS

"KT54-SR-104-2"

Thorium Dioxide (ThO_2) ---------- 0.95%

"KT54-SR-104-3"

Thorium Dioxide (ThO_2) ---------- 1.02%

Respectfully submitted,

SMITH-EMERY CO.

CHEMISTS AND ENGINEERS

EOS

LINDSAY CHEMICAL COMPANY

FOUNDED 1902

WEST CHICAGO, ILLINOIS

C. E. KNOWLES
KNOWLES-FISHER
CORP.
GOWANDA, NEW YORK

October 25, 1954

Dr. Allen C. Tester
P. O. Box 1637
Flagstaff, Arizona

Dear Al:

Below are given the results for the samples from near Salmon, Idaho. The thorium figures are not quite the same as those I gave you on the phone last night.

		Rare Earth Oxide + ThO_2	ThO_2
AN 547163	Radiant #104 Zone 5, Central Part 1.0 ft. wide, KT-54,-SR-104-10	0.6%	0.5%
AN 547164	KT-54-SR-104-11 Radiant #104,Central Part Zone 6, 1.2 ft. wide	4.5%	4.0%
AN 547165	KT-54-SR-104-9 Radiant #104,Zone 3 8-10 in. zone along margin of crevice	6.3%	2.0%

Up to the time of this writing, Gene Tom has not called, but I will instruct him to get a note to you at Flagstaff by Saturday of this week.

Gene can then work out a schedule with you.

Regards,

LINDSAY CHEMICAL COMPANY

Howard E. Hemer

Director of Research

HEK-lm

cc: Mr. C. E. Knowles
C. E. Knowles Company
Gawanda, N. Y.

COPY

ORE

LINDSAY CHEMICAL COMPANY

FOUNDED 1902

WEST CHICAGO, ILLINOIS

December 10, 1954

C. E. KNOWLES
KNOWLES-FISHER
CORP.
GOWANDA, NEW YORK

Mr. Allen C. Tester
P. O. Box 1637
Flagstaff, Arizona

Dear Al:

Gene Tom's samples of the thorite vein along the Salmon River have been analyzed with the following results:

Analysis Number	Mark	% ThO_2	% Rare Earth Oxide
549162	E. Contact Zone Width 25 in.	0.3	2.1
549163	E. side Width 59 in.	0.2	0.8
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According to Gene, the samples were taken across the exposed face, and the average (about 0.3% ThO_2) represents a total length of about 16 feet.

We would not say that the results are discouraging. Certainly, more exploratory work is indicated to determine the length of the thorium zone before any serious cost estimates can be made and an ore body blocked out.

We will appreciate your comments on this matter.

Regards.

Sincerely yours,

LINDSAY CHEMICAL COMPANY

Howard B. Herman

Director of Research

HBH-lm

cc: Mr. C. E. Knowles
C. E. Knowles Company
Gawanda, N. Y.

MWE
GFT

COPY

7/25/55 gla

PHONE:
GOWANDA 567
BUFFALO EM. 5777

Knowles-Fisher Corp.

RECEIVED
JUL 25 1955

NON-FERROUS CASTINGS - VALVES - PRECISION MACHINE WORK
METAL STAMPINGS - AUTOMATIC SCREW MACHINE PARTS - PLATING & ASSEMBLIES

GOWANDA, N. Y.

July 14, 1955

United States Department of the Interior
Defense Minerals Exploration Administration
So. 157 Howard Street
Spokane 4, Washington

Attention: Mr. Verne C. Fryklund, Jr.
for A. E. Weissenborn

Re: Docket No. DMEA-3882 (thorite-monazite-ilmenite)
Unnamed property
Lemhi County, Idaho

Gentlemen:

In reply to your letter of July 12, our Dr. Allen Tester will meet your Mr. Nickelson in Salmon, Idaho, on the night of July 25.

I have forgotten the name of the hotel in Salmon. However, there is only one large hotel which is a combination hotel and motel and will probably be the best meeting place. Dr. Tester will be registered there and I will try to be present also.

Very truly yours,

C. E. Knowles

CEK:bg

DMEA

RECEIVED
JUL 18 1955

PHONE:
GOWANDA 567
BUFFALO EM. 5777

Knowles-Fisher Corp.

RECEIVED
JUL 25 1955

NON FERROUS CASTINGS - VALVES - PRECISION MACHINE WORK
METAL STAMPINGS - AUTOMATIC SCREW MACHINE PARTS - PLATING & ASSEMBLIES
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Very truly yours,

C. E. Knowles

CEK:bg

RECEIVED
JUL 18 1955

July 1, 1955
Subject: DMEA-3882
Re: Exploration Assistance

C.E. Knowles
Knowles-Fisher Corp.
Gowanda, New York

Dear Mr. Knowles:

The receipt of your application dated July 1, 1955 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3882 and referred to the Rare and Miscellaneous Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

PHONE:
GOWANDA 567
BUFFALO EM. 5777

Knowles-Fisher Corp.

RECEIVED
JUL - 1 1955

NON FERROUS CASTINGS - VALVES - PRECISION MACHINE WORK
METAL STAMPINGS - AUTOMATIC SCREW MACHINE PARTS - PLATING & ASSEMBLIES
GOWANDA, N. Y.

June 20, 1955

United States Department of the Interior
Defense Minerals Exploration Administration
Washington, D. C.

Re: Application for Aid in a Exploration Project

Gentlemen:

The six"Consent to Lien" forms are now partially signed and are in the mail for the balance of the signatures. The only trouble we anticipate is catching up with two parties who are prospectors and are somewhere in the mountains at present. However, these forms should be back signed within a week or ten days.

The percentage of ownership is as follows:

Knowles-Fisher Corp.	63½%
Kenneth White	21½%
Miley Evans	7½%
Reese Esgar	7½%
	100 %

Very truly yours

KNOWLES-FISHER CORP.

C. E. Knowles

C. E. Knowles

CEK:rf

encl.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau Approved. 42-R1035.2.

RECEIVED
JUL - 1 1955

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. 3882
Metal or Mineral Thorium-Monazite-Ilmenite
Date Received 7-1-55
Estimated Cost $23,017
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: C. E. Knowles
Knowles-Fisher Corp.,
Gowanda, New York.

(*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 Land unsurveyed; estimated by projection of adjacent surveyed land to be in sec. 26, T.24 N., R. 20 E., Boise Meridian, Lemhi County, Idaho. Project to be on Radiant Mineral Claim no. 104; adjacent claims nos. 101-102-103-105-106-107 and 108.

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

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Controlling interest in recorded claims. See attached sheet.

(*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 None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. Claim no.104 recorded Nov.7,1953 Book 5, page 272, Lemhi County Ida
Claim no.103 " Nov.17,1953 " 5, " 281 " " "

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. See attached sheet

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. None

(*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. See attached sheet

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

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

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Thorite, Monazite, Ilmenite

(*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. See attached sheet

(*c*) The work will start within 90 days and be completed within 6 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. See attached sheet

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)? Yes

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

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

Explain in detail on acompanying paper.

CERTIFICATION

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

Dated May 12, 1955

C. E. Knowles
(Applicant)

By

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

Form MF-103

Application for aid in an exploration project, pursuant to DMEA Order 1, under the defense production act of 1950, as amended.

3 (d) Claim 104 recorded under names of White, Evans, Knowles and Esgar.

4 (a) Exploration of thorite-bearing vein has been done by tracing surface exposures and opening a large pit at the base of steep slope cutting the strike of the vein. Approximately 20 feet has been exposed across the vein for a height of about 12 feet.

No actual mining nor production of ore has been done. The open pit is available for examination, though some sluming has covered a part of the exposed vein. All operations have been done at my expense.

4 (b) None

4 (c) The area is a deeply eroded terrain of metamorphosed Belt Series (pre-Cambrian) sedimentary rocks. The topography is of rugged, steep ridges and canyons, bordering the Salmon River.

The highly metamorphosed sediments indicate by vestiges of sedimentary structures a strike of North 54° West with dips 73-80 degrees, to 110° (overturned 20°) direction right and left, due to close folds, in the area. The zone of mineralization is bordered on both sides by wide belts of coarse augen-gneiss with interzones of feldspathic and mica schists. Bull quartz veins at irregular intervals cross approximately normal to the strike of the principal rocks. Small dioritic dikes were observed in the area.

The principal zone of mineralization is 16 feet wide in the prospect pit and appears to be approximately parallel to the strike of the metamorphosed sediments, but there are places where the vein shows a divergence of 10 to 15 degrees; the dip of the zone in the immediate area is steep and nearly the same as the country rock.

The vein may be a hydrothermal alteration of a pre-existing carbonate-bearing zone in the sediments as evidenced by the presence of monazite, actinolite, tremolite, siderite and some calcite, accompanied by injected mineral solutions providing thorite, ilmenite, allanite, and some quartz. Thorite also occurs disseminated in the augen-gneiss wall rock.

The apparent reason for wishing to explore the claims is the relative abundance of thorite in the mineralized zone. Accompanying assays and reports (to be returned to applicant) support this belief.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

4 (d) The claims are located adjacent to the south bank of the Salmon River. A good natural gravel road is on the north side of the River, but there are no bridges for vehicles for many miles. No other roads are available for access to the claims. (A cable car crossing is contemplated for men and materials). At present, access to the claims is by boat crossing. The Salmon River is too deep and swift to ford vehicles.

The forest service road on the north side of Salmon River connects with U.S. 93 at North Fork, 4 miles upstream. Darby, Montana, the nearest rail point, is 53 miles north of North Fork on U.S. 93, and Missoula, Montana is 64 miles farther north. Salmon, Idaho, without railroad, is 26 miles south of the claims, on U.S. 93, and is the normal supply and residence point.

4 (e) Manpower is generally available at Salmon, and in the surrounding mining areas.

General supplies and materials are available at Salmon, Idaho, but Missoula, Montana (121 miles) would be the major source of mining machinery and heavy equipment. Ample water is available from the adjacent Salmon River. Electric power is available from transmission line at North Fork (4 miles).

5 (a) See application form.

5 (b) The proposed work includes two types:

1) A drift tunnel in solid ground following the lead of the vein and zone of mineralization, to obtain true characteristics free from slumping and surface weathering.

By starting the drift at the face of the present prospect pit and following the footwall, the tunnel would penetrate solid ground and prospect the zone of mineralization at considerable depth (300 feet plus) below the topographic surface.

2) Surface test pitting and bull-dozer trenching along the strike of the vein and the trace on the high ridges. Core drilling at appropriate indications.

5 (c) Answered on the application.

5 (d) Dr. Allen Tester, Geologist, age 57, 35 years teaching and field work. Will handle all geological work.

Coyle E. Knowles, Civil Engineer, age 54, Civil Engineering and General Construction for 30 years. Will either hire rock work done or supervise.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

6 Total estimated cost: $23,017.00.

6 (a) All tunnel and surface exploration to be contracted.

Estimates of each type:

Tunnelling, at $20.00 per ft. x 500 ft.	$10,000.
Core drilling at $3,00 per ft. x 1500 ft.	4,500.
Bulldozer work at $12.50 per hr. x 160 hrs.	2,000.
Total Contract	$16,500.

6 (b) Labor included in contracted work: geological and engineering consultants and expenses $ 2,475.

6 (c) Included with contract estimates.

6 (d) Operating equipment costs, rentals etc., to be included with contracted work.

6 (e) Not applicable.

6 (f) Estimates for new operating installations:

Cable car crossing Salmon River	$ 850.00
Tool, equipment, and working shed	300.00
Powder magazines, excavation and materials	150.00
	$ 1,300.00

6 (g) Analytical work $400.00; core boxes $100.00; accounting $150.00. Balance not applicable, to be included with contracts. $ 650.00

6 (h) Contingencies: 10% of estimated costs $ 2,092.00

7 (a) Yes

7 (b) Money and equipment.

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

TRINITY 4791 FORM 50

COPY

SMITH-EMERY COMPANY

CHEMICAL ENGINEERS AND CHEMISTS
METALLURGICAL AND TESTING ENGINEERS
920 SANTEE STREET
LOS ANGELES 15
CALIFORNIA

OUR NEW ADDRESS
781 E. WASHINGTON BLVD.
LOS ANGELES 21, CALIFORNIA

Return to Applicant

C. E. KNOWLES
KNOWLES-FISHER CORP.
GOWANDA, NEW YORK

LABORATORY No. 388465

Date August 18, 1954.

Sample Ore

Received 8-10-54

Submitted by A.C. Tester, Salmon, Idaho.

Marked "KT 54-SR-8"
(Sample from claim 104, zone 8, composite of 1.5 ft. across zone. Rock is augen-gneiss with feldspars, large porphyry crystals; quartz, mica, and amphiboles. Thorite disseminated in rock; RA very strong, count 17 on 20.0 scale 'High'. ACT)

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Magnesium	0.1%
Zirconium	0.05%
Manganese	0.05%
Strontium	0.01%
Lead	0.005%
Boron	0.005%
Vanadium	0.005%
Copper	0.005%
Gallium	0.005%
Chromium	0.001%
Cobalt	Trace
Thorium	Present
Rare Earths	Present
Tungsten	None found
Bismuth	None found
Molybdenum	None found
Uranium	None found
Nickel	None found
Potassium	None found
Columbium	None found
Tantalum	None found

Remarks: There is considerable radioactivity in this sample.

Respectfully submitted,

CHEMISTS AND ENGINEERS.

All reports are submitted as the confidential property of clients. Authorization for publication of our reports, conclusions, or extracts from or regarding them is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

(See statements on reverse side regarding qualitative spectrographic examination)

PROSPECT 3411

FORM 1

LABORATORY REPORT

COPY

SMITH-EMERY COMPANY

ESTABLISHED 1910

CHEMISTS - ENGINEERS

781 EAST WASHINGTON BOULEVARD

LOS ANGELES 21, CALIFORNIA

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LABORATORY
No. 388466-67-ADD

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GOWANDA, NEW YORK

Date August 21, 1954

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General Delivery,
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Thorium Dioxide (ThO_2) ---------- 1.02%

Respectfully submitted,

CHEMISTS AND ENGINEERS

LINDSAY CHEMICAL COMPANY

FOUNDED 1902

WEST CHICAGO, ILLINOIS

C. E. KNOWLES
KNOWLES-FISHER
CORP.
GOWANDA, NEW YORK

October 25, 1954

Dr. Allen C. Tester
P. O. Box 1637
Flagstaff, Arizona

Dear Al:

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Up to the time of this writing, Gene Tom has not called, but I will instruct him to get a note to you at Flagstaff by Saturday of this week.

Gene can then work out a schedule with you.

Regards,

LINDSAY CHEMICAL COMPANY

Howard E. Kerner

Director of Research

HEK-lm

cc: Mr. C. E. Knowles
C. E. Knowles Company
Gawanda, N. Y.

COPY

ORE

LINDSAY CHEMICAL COMPANY

FOUNDED 1902

WEST CHICAGO, ILLINOIS

December 10, 1954

C. E. KNOWLES
KNOWLES-FISHER
CORP.
GAWANDA, NEW YORK

Dr. Allen C. Tester
P. O. Box 1637
Flagstaff, Arizona

Dear Al:

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We will appreciate your comments on this matter.

Regards.

Sincerely yours,

LINDSAY CHEMICAL COMPANY

Howard E. Kremer

Director of Research

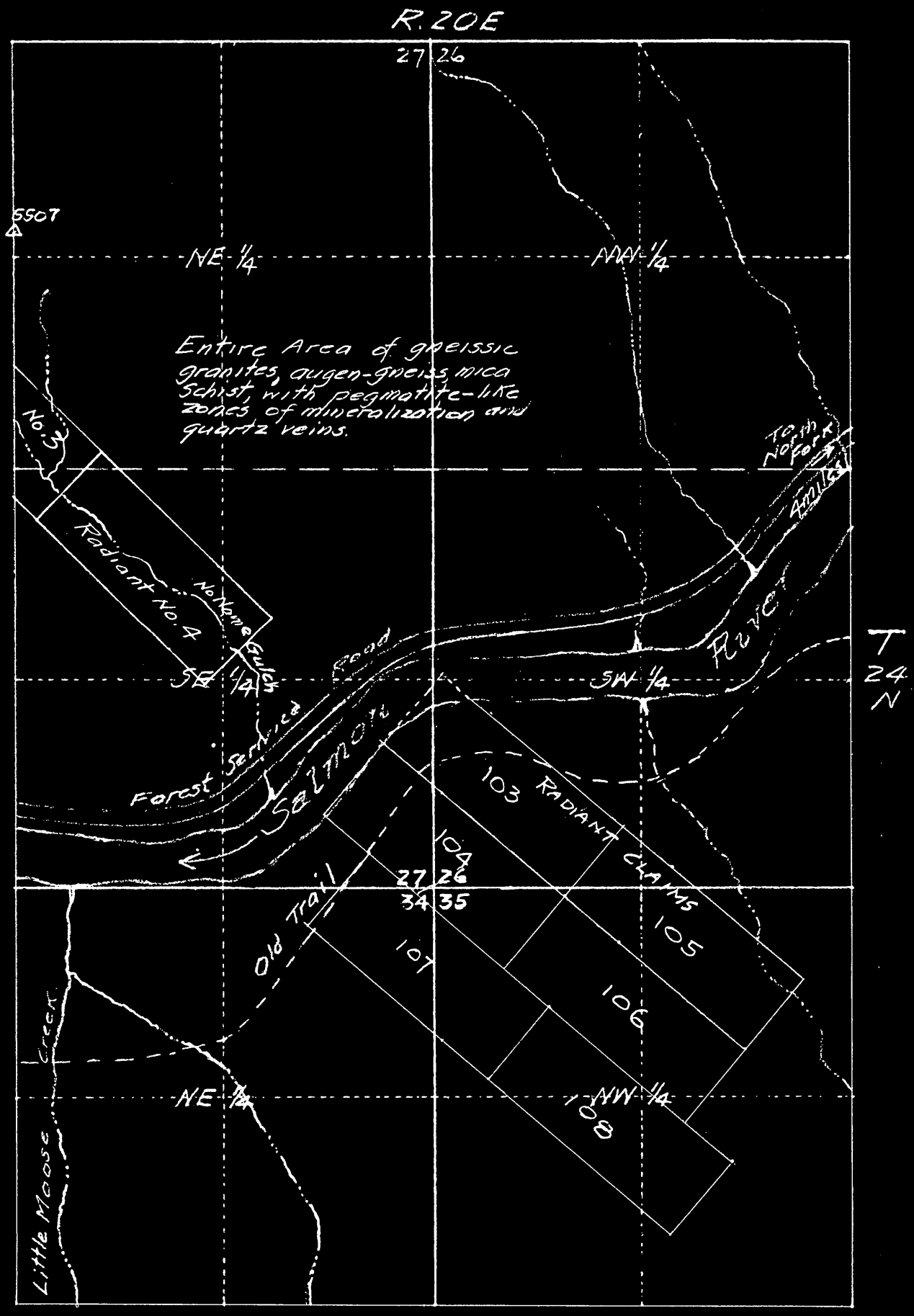
HEK-lm

cc: Mr. C. E. Knowles
C. E. Knowles Company
Gawanda, N. Y.

COPY

MWE
GFT

LOCATION MAP RADIANT CLAIMS
LEMHI COUNTY IDAHO



Map Modified from U.S. Forest Service
Salmon National Forest
Land Sections Not Surveyed = Hypothetical Extension
from survey east of area. (Boise Meridian)
Scale 1" = 880 ft.

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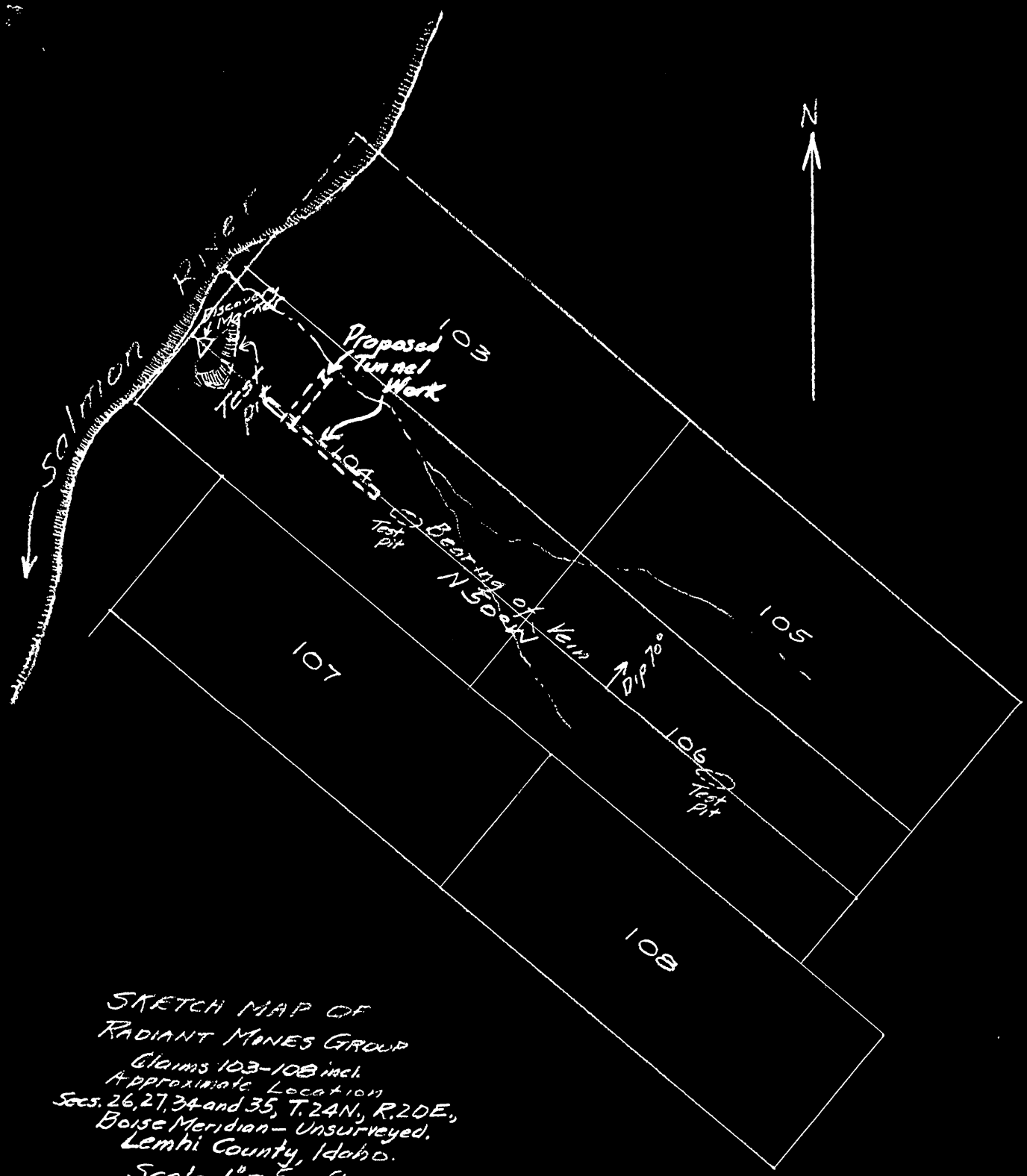

SKETCH MAP OF
RADIANT MINES GROUP
Claims 103-108 incl.
Approximate Location
Secs. 26, 27, 34 and 35, T. 24 N., R. 20 E.,
Boise Meridian — Unsurveyed.
Lemhi County, Idaho.
Scale 1" = 500 ft.

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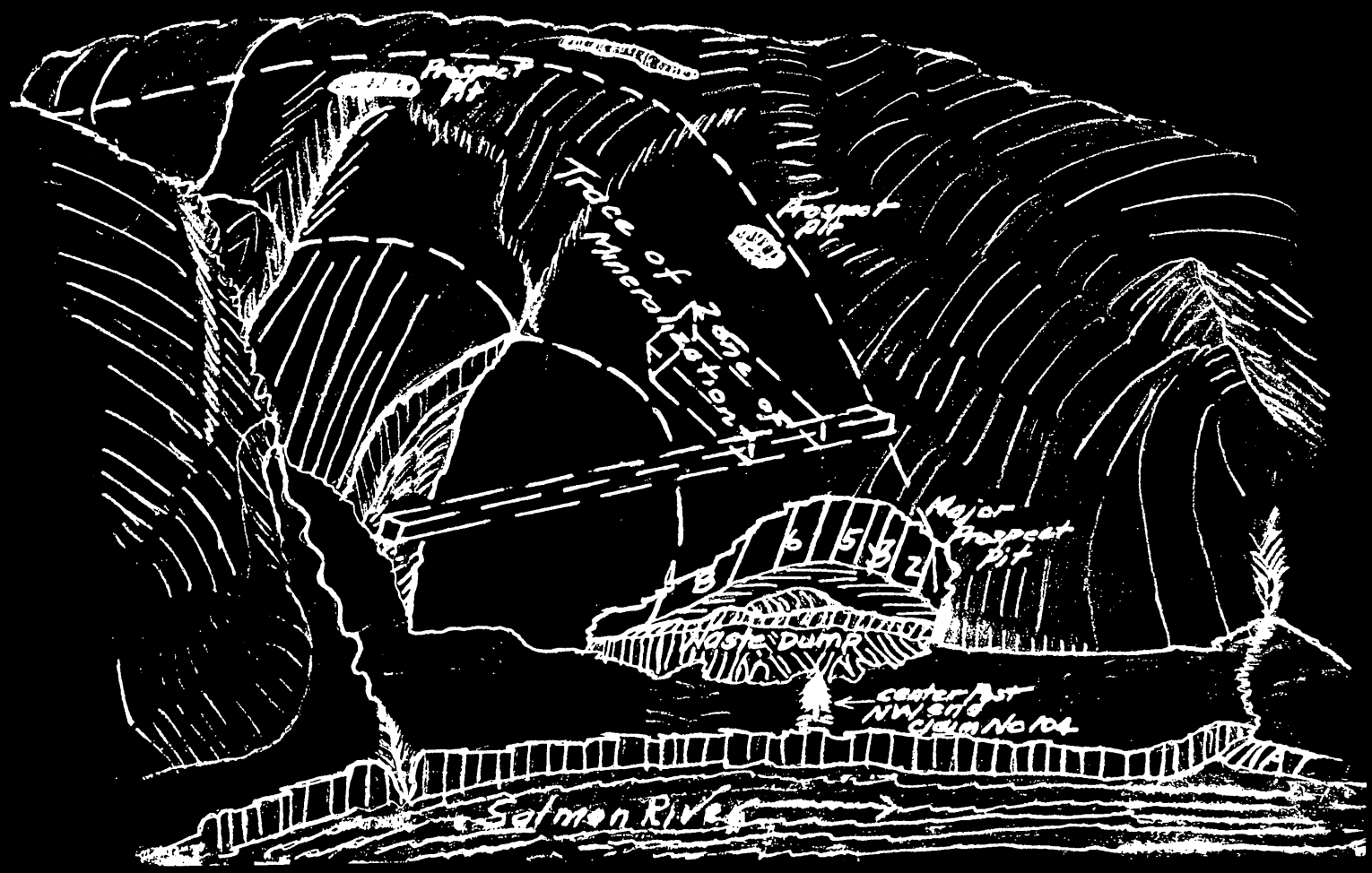

DIAGRAMMATIC SKETCH

Looking Southeast Along Strike of Zone of Mineralization of Radiant Claim No. 104. Lemhi County, Idaho.

Not Drawn to Scale: Approximate Heighth of Ridge in Foreground 500 feet above River Level. Width of Prospect Pit Face About 25 Feet.

Proposed Tunnel Work Shown by----Lines". Surface Trenching to be Done Along Trace of Zone Connecting Surface Prospects.

Numbers on Face of Prospect Pit Refer to Zones Sampled as Identified in Analyses Submitted with Application.

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