DMA Form 1

DEFENSE MINERALS ADMINISTRATION
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DMA Docket No. 3464

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To:	400	Date	8/27/54
To:	Oper Comm	Date	9-8-54
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CONTROLLED DOCUMENT

JAN 24 1955

Mr. William Malosky
112½ East Broadway
Butte, Montana

Re: Docket No. DMEA 3464 - Manganese
New Jersey claim
Silver Bow County, Montana

Dear Mr. Malosky:

Your application for aid for an exploration project and other data available to us in Washington concerning the above referenced 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 the occurrence of a small amount of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

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

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:fcc
1-19-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. REG. I - Northwest Dist.
Mr. DeHuff, USBM
Mr. Kiilsgaard, USGS

January 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $125,750.00
Docket No. 3464 - Manganese
William Maloney
New Jersey claim
Silver Bow County, Montana

The denial of the subject application is recommended by this Division based on the following information:

1. The applicant proposed a five-stage program to explore the New Jersey patented claim, which adjoins on the north the west one-half of the Norwich claim. A summary of the proposed program follows:

a. 16 to 20 hours of bulldozing

b. 100 feet shaft sinking, 600 feet drifting, and 200 feet raising

c. 100 feet shaft sinking and 400 feet drifting

d. 100 feet shaft sinking and 400 feet drifting

e. 100 feet shaft sinking and 100 feet drifting

2. The New Jersey vein is enclosed within granitic rocks of the Boulder batholith and is traceable for about 500 feet in the central part of the claim. Both ends of the vein outcrop are in contact with an extrusive variety of rhyolitic which covers and therefore conceals the vein.

3. Three distinct strands of the vein can be recognized in the exposure made by a drainage ditch. For the most part these strands contain little vein material but are represented by zones of highly altered granite. The strongest strand of the vein consists of a foot or so of manganese-stained quartz and an additional 4 feet of highly altered granite containing several small isolated pods of manganese oxide. All samples taken from this location contained less than one percent Mn.

4. The surface indication of manganese along the New Jersey vein does not compare favorably with the surface indications along either the Norwich or Plutus veins. Although there are lean manganese areas along both the Norwich and Plutus veins, in general, the outcrops, trenches, shallow workings, and dumps along these veins are heavily stained with manganese oxides. This is particularly evident over productive areas. The staining along the New Jersey vein is, for the most part, very weak, and nowhere nearly comparable to the staining evident over productive areas of the Norwich and Plutus veins.

5. The examining member of the field team recommended denial of the subject application for exploration assistance.

6. The Field Team concurs with the recommendations of the examining geologist.

7. The Commodity Division of the Geological Survey recommends denial.

8. The Commodity Division of the Bureau of Mines concurs in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge:fcc
1-19-55
cc to: Docket
Code 400
Adm. Reading File
Operating Coms.

400

IN REPLY REFER TO:

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

January 14, 1955

Re: DMEA-3464
William Mulcahy
(New Jersey Claim)
Silver Bow Co., Mont.
$125,750 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of Field Team examination report

The Field Team has recommended the application be denied.

Evaluation of the New Jersey vein was based on exposures in a shallow shaft, a road cut and the results of sampling at several dumps from old workings along the indicated strike of the vein. All of the samples contain less than 10 percent manganese and though the outcrops along the vein are strongly stained with manganese oxides the vein structure is not comparable to the nearby Norwich or Pintus veins. The New Jersey vein is not on strike with these veins and is comparable to them only insofar as it is a parallel vein structure carrying limited amounts of manganese.

I concur with the Field Team's conclusions, and recommend this application be denied.

E. L. Newcomb

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeHuff, 3523 Interior

400

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN - 6 1955

No. 157 Howard Street
Spokane 4, Washington

December 31, 1954

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

Re: Docket No. DMEA-346 (manganese)
William Maloney
New Jersey Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by J. J. Quinlan, Geological Survey, evaluating the subject application.

The New Jersey vein which the applicant wishes to explore is in the western part of the Butte district. It is about 450 feet north of the Kerwich vein and 950 feet north of the Plutus vein (see Docket No. DMEA 2874 - manganese, Irving and Nelson, Plutus-Kerwich mine, Silver Bow County, Montana, Contract No. Idm-2604). Although the vein is in a favorable manganese area it is not a particularly impressive structure nor do surface indications of manganese along it compare favorably with the surface indications along the productive Kerwich and Plutus veins. For these reasons the Field Team concurs with Quinlan's recommendation that the application be denied.

By Field Team, Region II

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

Wing G. Agnew, Member
U. S. Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
1-10-55
(date)

Enclosure
cc: DMEA (2)
Quinlan

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN - 6 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

MEMORANDUM December 27, 1954

To: DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA 3464 (manganese), Field Examination, William Mulcahy, New Jersey Claim, Silver Bow County, Montana

INTRODUCTION

The New Jersey claim was examined September 17, 1954, with reference to the subject loan application. Mr. William Mulcahy, the applicant, assisted during the examination.

RECOMMENDATION

It is recommended that Mr. Mulcahy's application for Government assistance to explore the New Jersey claim be denied.

APPLICANT

The applicant is Mr. William Mulcahy, 112½ East Broadway, Butte, Montana.

Mr. Mulcahy is an excellent miner, having had about 28 years of experience as a miner and leasor. In September 1951, Mr. Mulcahy entered into Exploration Project Contract No. Idm-E155 with the Government to explore the Summit Mine, Jefferson County, Montana, DMEA Docket No. 1877 (lead). Field Team representatives consider that Mr. Mulcahy did an excellent job under this contract under the most difficult circumstances. It is believed that he is fully qualified to supervise a project such as he proposes to undertake on the New Jersey claim.

Reviewed by
DMEA OPERATING COMMITTEE
1-10-55
(date)

LOCATION

The New Jersey claim is in the western part of the Butte district, Silver Bow County, Montana. It is about a mile west of the city limits of Butte, and is easily reached from the city over graded county roads.

The eastern half of the New Jersey claim is immediately north of the west half of the Norwich claim. The DMEA has considerable information in their files on the Norwich claim and the Plutus claim which adjoins the Norwich claim on the south (DMEA Docket No. 2874 (manganese), Irving and Nelson, Plutus-Norwich mine, Silver Bow County, Montana). The relation of the New Jersey claim to the Norwich and Plutus claims, as well as other claims, is shown on the attached map.

PROPERTY AND OWNERSHIP

The New Jersey claim is a patented quartz lode mining claim, Survey No. 8005, located in sec. 10, T. 3 N., R. 8 W., M.P.M. It is owned by Amis Barker Crandall and William Henry Barker of Butte, Montana, and is under lease to the applicant. A copy of the applicant's lease agreement with the owners dated July 31, 1954, is a part of the application.

PAST PRODUCTION

There is no recorded past production from the property.

WORKINGS

Shallow shafts and pits trace the course of the New Jersey vein for about 400 feet in the central part of the claim. These shafts and pits are shown on the sketch map accompanying this memorandum. All but the easternmost shaft and all the pits are now caved and filled with debris. At the time of the examination there was no rope or ladder available with which to enter the easternmost shaft. This shaft is about 20 feet deep, and it was possible to see and study the vein in its walls.

A road drainage ditch, 120 feet east of the easternmost shaft, cuts the New Jersey vein. Although this drainage ditch was not made to specifically expose the vein, it is the only place besides the easternmost shaft where the New Jersey vein can now be seen.

GEOLOGY

As is evident from the description of the workings, it is possible to trace the course of the New Jersey vein for about 500 feet in the central part of the claim (see attached sketch map). Although the vein can now be seen at only two places within this area, i.e., in the easternmost shaft, and in the road drainage ditch, the dumps of many of the caved shafts along the vein contain some vein material which is an aid in evaluating the structure.

The New Jersey vein is enclosed within granitic rocks of the Boulder batholith. It is about 450 feet north of the Norwich vein and 950 feet north of the Plutus vein. It appears to be approximately parallel to these two veins, striking N. 70°E. and dipping 65°-75° SE.

Three distinct strands of the vein can be recognized in the drainage ditch (see section of vein exposed in drainage ditch on attached sketch map). For the most part these strands contain little

vein material but are represented by zones of highly altered granite. The strongest strand of the vein consists of a foot or so of manganese-stained quartz and an additional 4 feet of highly altered granite containing several small isolated pods of manganese oxide. A sample across the manganese-stained quartz portion of the vein, 1.2 feet wide, assayed no silver, a trace of gold, and 0.99 percent manganese. A sample across the zone of highly altered granite assayed no silver, a trace of gold, and 0.32 percent manganese. The middle strand of the vein is eleven feet in the footwall of the strongest strand. This strand consists of a narrow stringer of iron oxides within a 1-foot wide zone of highly altered granite. There is a 3-foot wide zone of highly altered granite containing some iron oxides eighteen feet in the footwall of the strongest strand. A sample across this zone, 3 feet wide, assayed no silver, a trace of gold, and 0.32 percent manganese.

The vein exposed in the easternmost shaft correlates well with the strongest strand of the vein exposed in the road drainage ditch. In the east wall of the shaft the vein is about 4 feet wide. It consists of a zone of altered granite containing stringers and lenses of quartz and is stained with iron and manganese oxides (see section of vein exposed in shaft on attached sketch map). A strong stringer of manganese oxides is exposed in the west wall of the shaft. This stringer is about a foot wide near the top of the shaft and appears to narrow and die out near the bottom. It was not possible to sample the vein exposed in the shaft, as there was no way of entering the shaft. However, the dump contains a small pile of vein material which appeared to be representative of the vein exposed in the shaft. It is estimated that this pile contained about 50 pounds of vein material. A sample of this pile assayed 1.12 ounces of silver, a trace of gold, and 10.13 percent manganese. It should be noted that this sample contained the highest percentage of manganese of any of the seven samples taken during the examination.

A sample taken from a 50-pound pile of vein material on the dump of the shaft 20 feet west of the easternmost shaft assayed 0.18 ounce of silver, a trace of gold, and 9.8 percent manganese.

Samples taken of the small amount of vein material on the two westernmost shaft dumps showed little manganese but some silver. The sample from the westernmost dump was taken from a pile of vein material estimated to contain about 50 pounds of material. This sample assayed 5.88 ounces of silver, 0.004 ounce of gold and 2.61 percent manganese. The sample from the other western dump came from an area of the dump which was predominately vein material and contained several tons of vein material. The sample of this dump material assayed 18.84 ounces of silver, 0.015 ounce of gold and 2.61 percent manganese. The New Jersey vein cannot be found on the surface east or west of the area where it can be traced in the central part of the claim, as these areas are underlain by rhyolitic rocks which are later than the vein.

Two distinct varieties of rhyolitic rocks are recognized in the western part of the Butte district--an intrusive and an extrusive variety. It is extremely difficult to distinguish the two varieties magascopically, and in order to map them separately, it would take a great deal of detailed work. Fortunately, however, the two varieties are distinguished on the map entitled, "Geologic and Vein Map of Butte, Montana, Plate 10", accompanying U. S. Geological Survey Professional Paper 74 by W. H. Weed, 1912. This map shows that the rhyolite to the west of the area where the vein is evident on the New Jersey claim is of the intrusive variety, whereas the rhyolite to the east is of an extrusive variety. This is of interest in that the intrusive variety to the west cuts off the vein, whereas the extrusive variety to the east only covers and therefore conceals the vein.

The surface indication of manganese along the New Jersey vein does not compare favorably with the surface indications along either the Norwich or Plutus veins. Although there are lean manganese areas along both the Norwich and Plutus veins, in general, the outcrops, trenches, shallow workings, and dumps along these veins are heavily stained with manganese oxides. This is particularly evident over productive areas. The staining along the New Jersey vein is, for the most part, very weak, and nowhere is it near comparable to the staining evident over productive areas of the Norwich and Plutus vein.

APPLICANT'S PROPOSAL

The applicant proposes a five-stage program, each succeeding stage contingent on the preceding one, to explore the New Jersey claim. This program is outlined below.

Stage I - 16 to 20 hours of bulldozing to cut one trench across the property, and seven trenches across the vein.

Stage II - sink shaft on vein to 100 level; drift 600 feet on level and drive 2 raises (100 feet each) to surface on vein.

Stage III - sink shaft on vein to 200 level and drift 400 feet on this level.

Stage IV - sink shaft on vein to 300 level and drift 400 feet on this level.

Stage V - sink shaft on vein to 400 level and drift 100 feet on this level.

EVALUATION OF APPLICANT'S PROPOSAL AND CONCLUSION

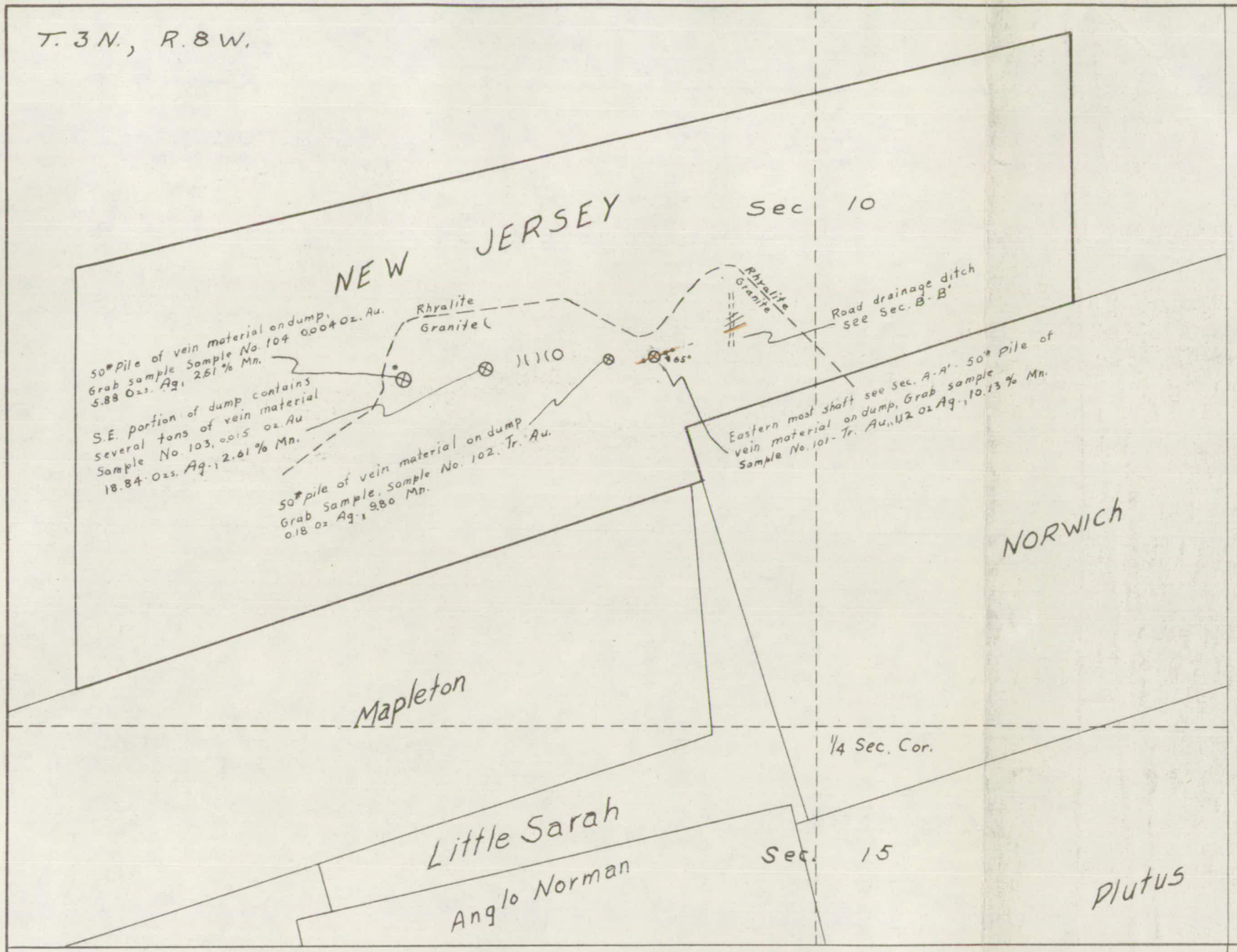
Upon the basis of present information, the New Jersey vein is not considered a particularly favorable manganese target. It is

not an impressive structure at either place where it is exposed, nor do the surface indications of manganese along it compare favorably with the surface indication along the productive Norwich and Plutus veins. Although one sample of vein material from the shaft dumps showed some silver values of interest (18.84 ounces) none of the samples taken from the vein or the dumps during the examination showed any manganese of commercial interest. The highest manganese assay showed only 10.13 percent manganese.

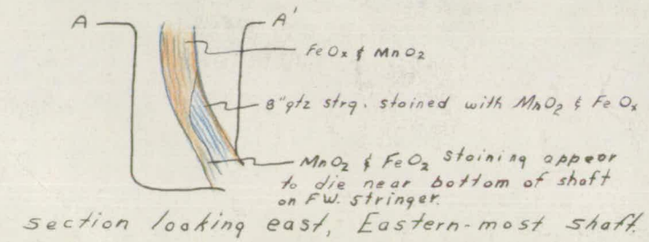
The applicant's proposed program to test the vein by successive stages from the surface to a depth of 400 feet does not offer much chance of success when one considers the poor surface indications along the vein. Considering the number of shafts and pits along the vein in the central area of the claim and the poor manganese showings on the dumps of these pits and shafts, it appears that dozing in this area would turn up very little manganese. Dozing to expose the vein outside the central area of the claim is not feasible, as these areas are underlain by rhyolitic rocks which are later than the vein. Without any favorable surface indication or geologic reason for significant improvement in the grade of the vein with depth, it would not be prudent to sink 100 feet in the hope that the vein will improve. For these reasons it is recommended that the application be denied.

Although exploration of the New Jersey vein does not appear warranted at this time, it may be that future work on neighboring properties may indicate that such work would be justified. In line with this thought, if exploration is carried to greater depths on neighboring properties, and it proves encouraging, it would be well to test the New Jersey vein at vertical intervals of 500 feet, by diamond drilling, to see if any improvement may be indicated. Although such a program is admittedly of a "wild cat" nature, it is believed that it is justifiable when one considers that the New Jersey vein is parallel to producing veins in the area, and the expense of such drilling would not be great. However, such a program would be contingent upon the results of future work on the neighboring properties, and upon the owners of the various claims making satisfactory working agreements.

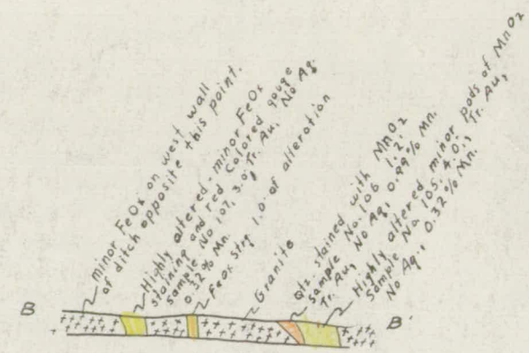
Attachment
Distribution:
DMEA (4)
USBM (2)
USGS (Spo)
Docket
Quinlan



SKETCH MAP SHOWING SURFACE GEOLOGY ALONG NEW JERSY VEIN
MAP ALSO SHOWS RELATIONSHIP OF NEW JERSEY CLAIM TO OTHERS IN AREA
Silver Bow County, Montana
SCALE 1" = 200



Section looking east, Eastern-most shaft



Section looking east. Road drainage ditch

SECTIONS A-A' and B-B'
REFERRED TO ON MAP
1" = 20

SEP 9 1954

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 364 - Manganese
William Mulcahy
New Jersey claim
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and your letter of August 24, 1954, which states that a field examination of the property will be scheduled as soon as possible.

We will, therefore, hold this application in abeyance until the report and recommendations by the Field Team are received.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee

APPROVED:

J. H. Hedges

Member, Bureau of Mines

Thor H. Kilsgaard

Member, Geological Survey

FARutledge:foc
9-3-54
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. Reg. 22
Mr. DeHuff, USBM
Mr. Thor H. Kilsgaard, USGS

SEP 9 1954

Mr. William Mulcahy
112½ East Broadway
Butte, Montana

Re: Docket No. DMEA 3464 - Manganese
New Jersey claim
Silver Bow County, Montana

Dear Mr. Mulcahy:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration. Subject to receiving the Owner's Consent to Lien requested in Mr. Weissenborn's letter of August 24, 1954, your application has been referred to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II, South 157 Howard Street, Spokane 4, Washington, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:foc
9-3-54
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. Reg. II
Mr. DeHuff, USBM
Mr. Kilsgaard, USGS

Interior Department

Defense Minerals Exploration Administration

14X4401(01) Revolving Fund, Defense Production Act, Interior (Allocated Working Fund to the Office of the Secretary).

TELETYPE

SEP 3 1954

To: A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II, Spokane, Washington

Reurlet August 31 requesting status information for following dockets:

1. West Slope Mining Company, DMEA 2267-Tungsten. Contract was mailed to you for execution September 2.

2. Twin Sisters, DMEA 3412-Chromite. We anticipate mailing contract next week.

3. Northfield Mines, DMEA 2436-Cobalt & Copper. Amendment authorizing recess being held in abeyance pending receipt of equipment and supply inventory. Your July 29 letter indicated inventory giving realistic appraisal of possible salvage values would follow shortly.

4. Boulder Ores, Inc., DMEA 2973-Tungsten. You are hereby authorized and requested to prepare amendment covering payment for Mr. Fairweather's services, removing limitation on time but not the other restrictions, as recommended in your letter of August 27.

George C. Selfridge

Chairman, Operating Committee

cc: Docket
Code 400
FT, Reg. 2 - confirmation
Oper. Committee
R. W. Geehan, USBM
Thor. Kiilsgaard, USGS
Adm. Reading File

WSMartin/ls
9-3-54

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

August 24, 1954

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

dmea 3464

Re: New application (manganese)
William Mulcahy
The New Jersey Lode Mining Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are 3 copies of form MF-103 received from William Mulcahy, 112½ East Broadway, Butte, Montana. One copy is being retained for our files. Also enclosed is a copy of a lease agreement between Avis Barker Crandall and William Henry Barker, lessors, and the applicant.

A lead exploration project (Contract No. Idm-5155) with Mr. Mulcahy was recently certified (December 23, 1953); however, the new application is for manganese in a different area.

The proposed exploration seems to be somewhat complicated and expensive and will undoubtedly require a field examination. Due to the peculiar weather this summer, we will schedule a field examination as soon as possible.

Sincerely yours,

Verne C. Fryklund
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM (2)
Quinlan

400

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

WASHINGTON 25, D.C.
So. 157 Howard Street
Spokane 4, Washington

August 24, 1954

Mr. William Mulcahy
112½ East Broadway
Butte, Montana

Amer 3464

Re: "Owner's Consent to Lien"

Dear Mr. Mulcahy:

The Defense Minerals Exploration Administration has issued new forms of the "Owner's Consent to Lien," revised July 1, 1954. Inasmuch as our Washington office, on another application, returned copies made up on the old form and insisted that the applicant use the revised form, I am returning the "Owner's Consent to Lien" forms signed by Barker and Crandall, together with 7 copies of the revised form.

We have sent your application on to Washington but before it can be considered, the new form MF-203 must be forwarded. Therefore, please have the form filled out and signed, and return 5 copies to this office just as soon as possible.

Yours sincerely,

Verne C. Frykland
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: DMEA (2)
USBM (2)
Geologist

DOCKET
SURNAME
100 Rutledge
Martin
DeHuff
Kiilsgaard
Hedges
Selfridge
Johnson

JAN 24 1955

Mr. William Maloney
112½ East Broadway
Butte, Montana

Re: Docket No. DMEA 3464 - Manganese
New Jersey Claim
Silver Bow County, Montana

Dear Mr. Maloney:

Your application for aid for an exploration project and other data available to us in Washington concerning the above referenced 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 the occurrence of a small amount of manganese mineralization on your property, indicates to us that the probability of disclosing minable manganese ore reserves by your proposed program is not sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application is denied.

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

Sincerely yours,

C. O. Mittendorf

Administrator

FARutledge:foc
1-19-55
cc to: Docket
Code 100
Adm. Reading File
Operating Comm.
FT. REG. I - Northwest Dist.
Mr. DeHuff, USBM
Mr. Kiilsgaard, USGS

R.C.S.
c

DOCKET
SURNAME
400 Rutledge
Montana
DE Staff

January 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $125,750.00
Docket No. 3464 - Manganese
William Mulcahy
New Jersey claim
Silver Bow County, Montana

The denial of the subject application is recommended by this Division based on the following information:

1. The applicant proposed a five-stage program to explore the New Jersey patented claim, which adjoins on the north the west one-half of the Moraich claim. A summary of the proposed program follows:

a. 16 to 20 hours of bulldozing

b. 100 feet shaft sinking, 600 feet drifting, and 200 feet raising

c. 100 feet shaft sinking and 400 feet drifting;

d. 100 feet shaft sinking and 400 feet drifting;

e. 100 feet shaft sinking and 100 feet drifting;

2. The New Jersey vein is enclosed within granitic rocks of the Boulder batholith and is traceable for about 500 feet in the central part of the claim. Both ends of the vein outcrop are in contact with an extrusive variety of rhyolitic which covers and therefore conceals the vein.

3. Three distinct strands of the vein can be recognized in the exposure made by a drainage ditch. For the most part these strands contain little vein material but are represented by zones of highly altered granite. The strongest strand of the vein consists of a foot or so of manganese-stained quartz and an additional 4 feet of highly altered granite containing several small isolated pods of manganese oxide. All samples taken from this location contained less than one percent Mn.

R.C.S.

4. The surface indication of manganese along the New Jersey vein does not compare favorably with the surface indications along either the Merwich or Plutus veins. Although there are lean manganese areas along both the Merwich and Plutus veins, in general, the outcrops, trenches, shallow workings, and dumps along these veins are heavily stained with manganese oxides. This is particularly evident over productive areas. The staining along the New Jersey vein is, for the most part, very weak, and nowhere nearly comparable to the staining evident over productive areas of the Merwich and Plutus veins.

5. The examining member of the field team recommended denial of the subject application for exploration assistance.

6. The Field Team concurs with the recommendations of the examining geologist.

7. The Commodity Division of the Geological Survey recommends denial.

8. The Commodity Division of the Bureau of Mines concurs in the denial.

W. S. Martin, Chief
Iron and Ferro-Alloys Division

FARutledge:fec
1-19-55
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.

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

January 19, 1955

MEMORANDUM

To: Administrator, DMEA

From: Iron and Ferro-Alloys Division, DMEA

Subject: Denial of exploration project in the amount of $125,750.00
Docket No. 3464 - Manganese
William Mulcahy
New Jersey claim
Silver Bow County, Montana

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1. The applicant proposed a five-stage program to explore the New Jersey patented claim, which adjoins on the north the west one-half of the Norwich claim. A summary of the proposed program follows:

a. 16 to 20 hours of bulldozing

b. 100 feet shaft sinking, 600 feet drifting, and 200 feet raising

c. 100 feet shaft sinking and 400 feet drifting

d. 100 feet shaft sinking and 400 feet drifting

e. 100 feet shaft sinking and 100 feet drifting

2. The New Jersey vein is enclosed within granitic rocks of the Boulder batholith and is traceable for about 500 feet in the central part of the claim. Both ends of the vein outcrop are in contact with an extrusive variety of rhyolitic which covers and therefore conceals the vein.

3. Three distinct strands of the vein can be recognized in the exposure made by a drainage ditch. For the most part these strands contain little vein material but are represented by zones of highly altered granite. The strongest strand of the vein consists of a foot or so of manganese-stained quartz and an additional 4 feet of highly altered granite containing several small isolated pods of manganese oxide. All samples taken from this location contained less than one percent Mn.

4. The surface indication of manganese along the New Jersey vein does not compare favorably with the surface indications along either the Norwich or Plutus veins. Although there are lean manganese areas along both the Norwich and Plutus veins, in general, the outcrops, trenches, shallow workings, and dumps along these veins are heavily stained with manganese oxides. This is particularly evident over productive areas. The staining along the New Jersey vein is, for the most part, very weak, and nowhere nearly comparable to the staining evident over productive areas of the Norwich and Plutus veins.

5. The examining member of the field team recommended denial of the subject application for exploration assistance.

6. The Field Team concurs with the recommendations of the examining geologist.

7. The Commodity Division of the Geological Survey recommends denial.

8. The Commodity Division of the Bureau of Mines concurs in the denial.

W S Martin
W. S. Martin, Chief
Iron and Ferro-Alloys Division

No check

IN REPLY REFER TO:

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

January 14, 1955

Re: DMEA-3464
William Mulcahy
(New Jersey Claim)
Silver Bow Co., Mont.
$125,750 - Manganese

Memorandum

To: W. S. Martin, Defense Minerals Exploration Administration

From: E. L. Newcomb, U. S. Geological Survey

Subject: Review of Field Team examination report

The Field Team has recommended the application be denied.

Evaluation of the New Jersey vein was based on exposures in a shallow shaft, a road cut and the results of sampling at several dumps from old workings along the indicated strike of the vein. All of the samples contain less than 10 percent manganese and though the outcrops along the vein are strongly stained with manganese oxides the vein structure is not comparable to the nearby Norwich or Plutus veins. The New Jersey vein is not on strike with these veins and is comparable to them only insofar as it is a parallel vein structure carrying limited amounts of manganese.

I concur with the Field Team's conclusions, and recommend this application be denied.

E. L. Newcomb
E. L. Newcomb

Copy retained 400

IN REPLY REFER TO:

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

January 14, 1955

Re: DMEA-3464
William Malosky
(New Jersey Claim)
Silver Bow Co., Mont.
$125,750 - Manganese

Memorandum

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I concur with the Field Team's conclusions, and recommend this application be denied.

E. L. Newcomb

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeHuff, 3523 Interior

IN REPLY REFER TO:

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

January 14, 1953

Re: DMEA-3464
William Malcaty
(New Jersey Claim)
Silver Bow Co., Mont.
$125,750 - Manganese

Memorandum

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From: E. L. Newcomb, U. S. Geological Survey

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I concur with the Field Team's conclusions, and recommend this application be denied.

E. L. Newcomb

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
Gilbert DeHuff, 3523 Interior

Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 6 1955

December 31, 1954

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

WSM

Re: Docket No. DMEA-3464 (manganese)
William Mulcahy
New Jersey Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are four copies of a memorandum by J. J. Quinlan, Geological Survey, evaluating the subject application.

The New Jersey vein which the applicant wishes to explore is in the western part of the Butte district. It is about 450 feet north of the Norwich vein and 950 feet north of the Plutus vein (see Docket No. DMEA 2874 - manganese, Irving and Nelson, Plutus-Norwich mine, Silver Bow County, Montana, Contract No. Idm-E604). Although the vein is in a favorable manganese area it is not a particularly impressive structure nor do surface indications of manganese along it compare favorably with the surface indications along the productive Norwich and Plutus veins. For these reasons the Field Team concurs with Quinlan's recommendation that the application be denied.

By Field Team, Region II

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

Wing G. Agnew, Member
U. S. Bureau of Mines

Reviewed by
DMEA OPERATING COMMITTEE
1-10-55
(date)

Enclosure
cc: USBM (2)
Quinlan

DMEA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN - 6 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
So. 157 Howard Street
Spokane 4, Washington

MEMORANDUM

December 27, 1954

Reviewed by
DMEA OPERATING COMMITTEE
1-10-55
(date)

To: DMEA Field Team, Region II

From: J. J. Quinlan, Geologist, U. S. Geological Survey

Subject: Docket No. DMEA 3464 (manganese), Field Examination, William Mulcahy, New Jersey Claim, Silver Bow County, Montana

INTRODUCTION

The New Jersey claim was examined September 17, 1954, with reference to the subject loan application. Mr. William Mulcahy, the applicant, assisted during the examination.

RECOMMENDATION

It is recommended that Mr. Mulcahy's application for Government assistance to explore the New Jersey claim be denied.

APPLICANT

The applicant is Mr. William Mulcahy, 112½ East Broadway, Butte, Montana.

Mr. Mulcahy is an excellent miner, having had about 28 years of experience as a miner and leasor. In September 1951, Mr. Mulcahy entered into Exploration Project Contract No. Idm-E155 with the Government to explore the Summit Mine, Jefferson County, Montana, DMEA Docket No. 1877 (lead). Field Team representatives consider that Mr. Mulcahy did an excellent job under this contract under the most difficult circumstances. It is believed that he is fully qualified to supervise a project such as he proposes to undertake on the New Jersey claim.

LOCATION

The New Jersey claim is in the western part of the Butte district, Silver Bow County, Montana. It is about a mile west of the city limits of Butte, and is easily reached from the city over graded county roads.

The eastern half of the New Jersey claim is immediately north of the west half of the Norwich claim. The DMEA has considerable information in their files on the Norwich claim and the Plutus claim which adjoins the Norwich claim on the south (DMEA Docket No. 2874 (manganese), Irving and Nelson, Plutus-Norwich mine, Silver Bow County, Montana). The relation of the New Jersey claim to the Norwich and Plutus claims, as well as other claims, is shown on the attached map.

PROPERTY AND OWNERSHIP

The New Jersey claim is a patented quartz lode mining claim, Survey No. 8005, located in Sec. 10, T. 3 N., R. 8 W., M.P.M. It is owned by Avis Barker Crandall and William Henry Barker of Butte, Montana, and is under lease to the applicant. A copy of the applicant's lease agreement with the owners dated July 31, 1954, is a part of the application.

PAST PRODUCTION

There is no recorded past production from the property.

WORKINGS

Shallow shafts and pits trace the course of the New Jersey vein for about 400 feet in the central part of the claim. These shafts and pits are shown on the sketch map accompanying this memorandum. All but the easternmost shaft and all the pits are now caved and filled with debris. At the time of the examination there was no rope or ladder available with which to enter the easternmost shaft. This shaft is about 20 feet deep, and it was possible to see and study the vein in its walls.

A road drainage ditch, 120 feet east of the easternmost shaft, cuts the New Jersey vein. Although this drainage ditch was not made to specifically expose the vein, it is the only place besides the easternmost shaft where the New Jersey vein can now be seen.

GEOLOGY

As is evident from the description of the workings, it is possible to trace the course of the New Jersey vein for about 500 feet in the central part of the claim (see attached sketch map). Although the vein can now be seen at only two places within this area, i.e., in the easternmost shaft, and in the road drainage ditch, the dumps of many of the caved shafts along the vein contain some vein material which is an aid in evaluating the structure.

The New Jersey vein is enclosed within granitic rocks of the Boulder batholith. It is about 450 feet north of the Norwich vein and 950 feet north of the Plutus vein. It appears to be approximately parallel to these two veins, striking N. 70°E. and dipping 65°-75° SE.

Three distinct strands of the vein can be recognized in the drainage ditch (see section of vein exposed in drainage ditch on attached sketch map). For the most part these strands contain little

vein material but are represented by zones of highly altered granite. The strongest strand of the vein consists of a foot or so of manganese-stained quartz and an additional 4 feet of highly altered granite containing several small isolated pods of manganese oxide. A sample across the manganese-stained quartz portion of the vein, 1.2 feet wide, assayed no silver, a trace of gold, and 0.99 percent manganese. A sample across the zone of highly altered granite assayed no silver, a trace of gold, and 0.32 percent manganese. The middle strand of the vein is eleven feet in the footwall of the strongest strand. This strand consists of a narrow stringer of iron oxides within a 1-foot wide zone of highly altered granite. There is a 3-foot wide zone of highly altered granite containing some iron oxides eighteen feet in the footwall of the strongest strand. A sample across this zone, 3 feet wide, assayed no silver, a trace of gold, and 0.32 percent manganese.

The vein exposed in the easternmost shaft correlates well with the strongest strand of the vein exposed in the road drainage ditch. In the east wall of the shaft the vein is about 4 feet wide. It consists of a zone of altered granite containing stringers and lenses of quartz and is stained with iron and manganese oxides (see section of vein exposed in shaft on attached sketch map). A strong stringer of manganese oxides is exposed in the west wall of the shaft. This stringer is about a foot wide near the top of the shaft and appears to narrow and die out near the bottom. It was not possible to sample the vein exposed in the shaft, as there was no way of entering the shaft. However, the dump contains a small pile of vein material which appeared to be representative of the vein exposed in the shaft. It is estimated that this pile contained about 50 pounds of vein material. A sample of this pile assayed 1.12 ounces of silver, a trace of gold, and 10.13 percent manganese. It should be noted that this sample contained the highest percentage of manganese of any of the seven samples taken during the examination.

A sample taken from a 50-pound pile of vein material on the dump of the shaft 20 feet west of the easternmost shaft assayed 0.18 ounce of silver, a trace of gold, and 9.8 percent manganese.

Samples taken of the small amount of vein material on the two westernmost shaft dumps showed little manganese but some silver. The sample from the westernmost dump was taken from a pile of vein material estimated to contain about 50 pounds of material. This sample assayed 5.88 ounces of silver, 0.004 ounce of gold and 2.61 percent manganese. The sample from the other western dump came from an area of the dump which was predominately vein material and contained several tons of vein material. The sample of this dump material assayed 18.84 ounces of silver, 0.015 ounce of gold and 2.61 percent manganese. The New Jersey vein cannot be found on the surface east or west of the area where it can be traced in the central part of the claim, as these areas are underlain by rhyolitic rocks which are later than the vein.

Two distinct varieties of rhyolitic rocks are recognized in the western part of the Butte district--an intrusive and an extrusive variety. It is extremely difficult to distinguish the two varieties megascopically, and in order to map them separately, it would take a great deal of detailed work. Fortunately, however, the two varieties are distinguished on the map entitled, "Geologic and Vein Map of Butte, Montana, Plate 10", accompanying U. S. Geological Survey Professional Paper 74 by W. H. Weed, 1912. This map shows that the rhyolite to the west of the area where the vein is evident on the New Jersey claim is of the intrusive variety, whereas the rhyolite to the east is of an extrusive variety. This is of interest in that the intrusive variety to the west cuts off the vein, whereas the extrusive variety to the east only covers and therefore conceals the vein.

The surface indication of manganese along the New Jersey vein does not compare favorably with the surface indications along either the Norwich or Plutus veins. Although there are lean manganese areas along both the Norwich and Plutus veins, in general, the outcrops, trenches, shallow workings, and dumps along these veins are heavily stained with manganese oxides. This is particularly evident over productive areas. The staining along the New Jersey vein is, for the most part, very weak, and nowhere is it near comparable to the staining evident over productive areas of the Norwich and Plutus vein.

APPLICANT'S PROPOSAL

The applicant proposes a five-stage program, each succeeding stage contingent on the preceding one, to explore the New Jersey claim. This program is outlined below.

Stage I - 16 to 20 hours of bulldozing to cut one trench across the property, and seven trenches across the vein.

Stage II - sink shaft on vein to 100 level; drift 600 feet on level and drive 2 raises (100 feet each) to surface on vein.

Stage III - sink shaft on vein to 200 level and drift 400 feet on this level.

Stage IV - sink shaft on vein to 300 level and drift 400 feet on this level.

Stage V - sink shaft on vein to 400 level and drift 100 feet on this level.

EVALUATION OF APPLICANT'S PROPOSAL AND CONCLUSION

Upon the basis of present information, the New Jersey vein is not considered a particularly favorable manganese target. It is

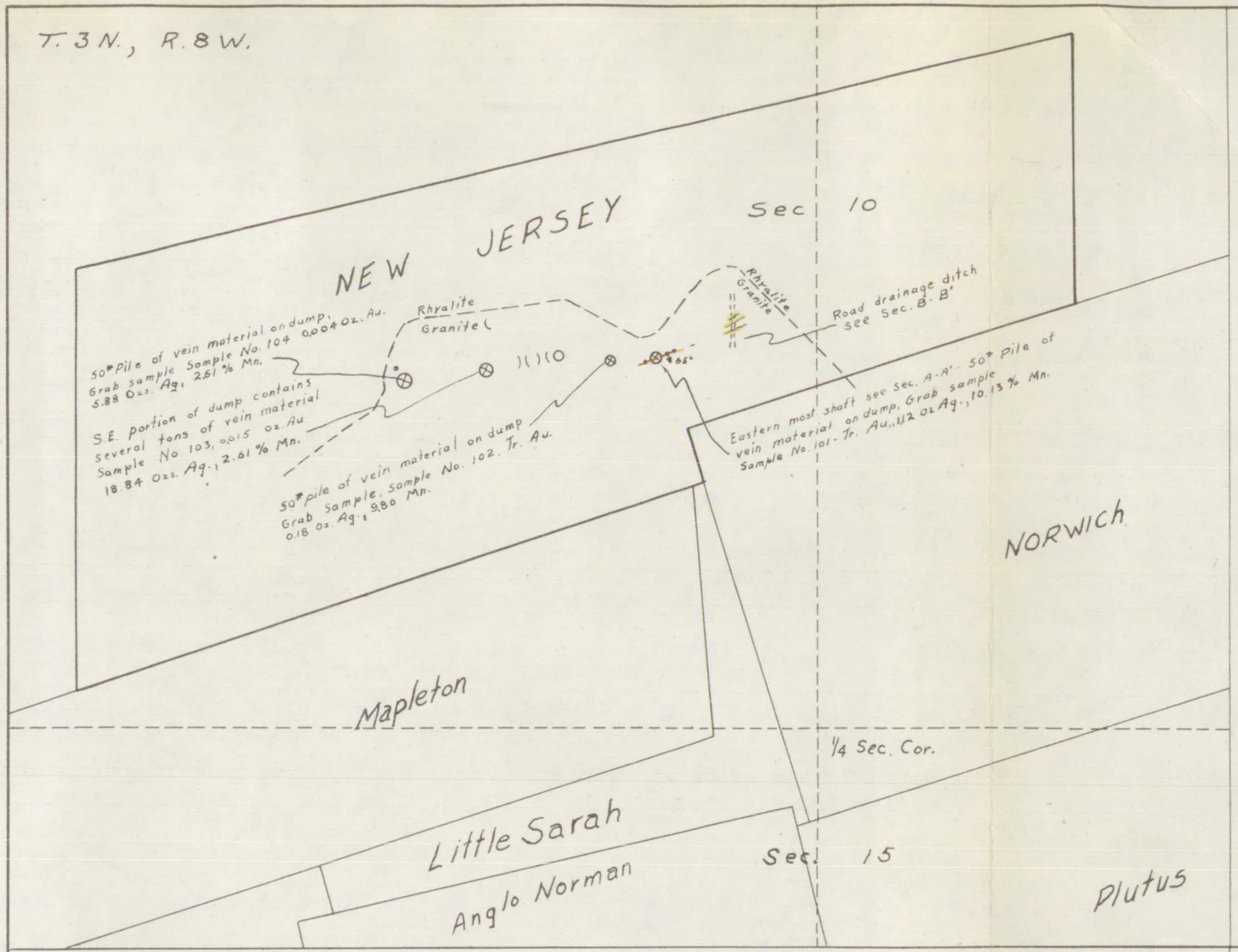
not an impressive structure at either place where it is exposed, nor do the surface indications of manganese along it compare favorably with the surface indication along the productive Norwich and Plutus veins. Although one sample of vein material from the shaft dumps showed some silver values of interest (18.84 ounces) none of the samples taken from the vein or the dumps during the examination showed any manganese of commercial interest. The highest manganese assay showed only 10.13 percent manganese.

The applicant's proposed program to test the vein by successive stages from the surface to a depth of 400 feet does not offer much chance of success when one considers the poor surface indications along the vein. Considering the number of shafts and pits along the vein in the central area of the claim and the poor manganese showings on the dumps of these pits and shafts, it appears that dozing in this area would turn up very little manganese. Dozing to expose the vein outside the central area of the claim is not feasible, as these areas are underlain by rhyolitic rocks which are later than the vein. Without any favorable surface indication or geologic reason for significant improvement in the grade of the vein with depth, it would not be prudent to sink 100 feet in the hope that the vein will improve. For these reasons it is recommended that the application be denied.

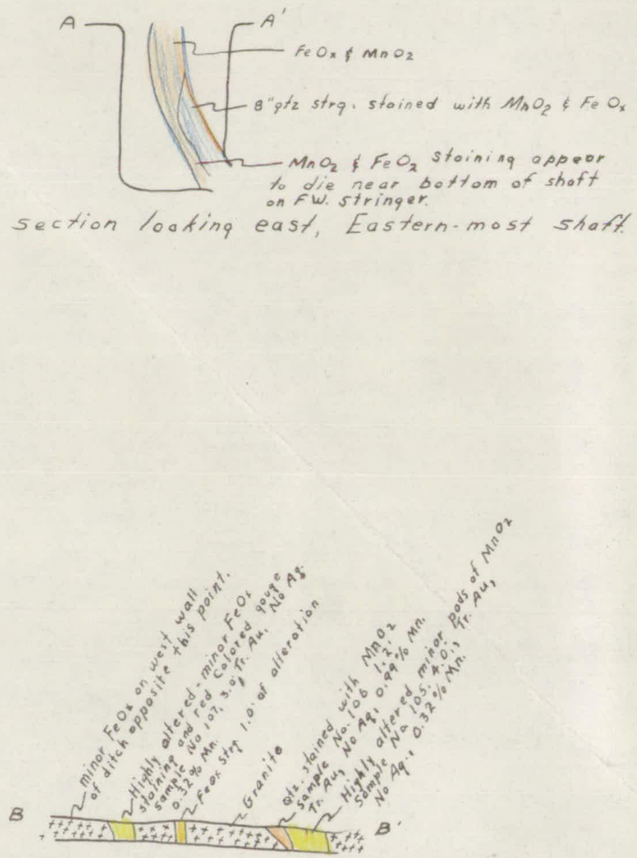
Although exploration of the New Jersey vein does not appear warranted at this time, it may be that future work on neighboring properties may indicate that such work would be justified. In line with this thought, if exploration is carried to greater depths on neighboring properties, and it proves encouraging, it would be well to test the New Jersey vein at vertical intervals of 500 feet, by diamond drilling, to see if any improvement may be indicated. Although such a program is admittedly of a "wild cat" nature, it is believed that it is justifiable when one considers that the New Jersey vein is parallel to producing veins in the area, and the expense of such drilling would not be great. However, such a program would be contingent upon the results of future work on the neighboring properties, and upon the owners of the various claims making satisfactory working agreements.

Attachment
Distribution:
DMEA (4)
USBM (2)
USGS (Spo)
Docket
Quinlan

Docket No. DMEA 3464



SKETCH MAP SHOWING SURFACE GEOLOGY ALONG NEW JERSY VEIN
MAP ALSO SHOWS RELATIONSHIP OF NEW JERSEY CLAIM TO OTHERS IN AREA
Silver Bow County, Montana
SCALE 1" = 200



SECTIONS A-A' and B-B'
REFERRED TO ON MAP
1" = 20

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

Docket
RECEIVED
SEP 13 1954

September 10, 1954

WSM

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

Re: Docket No. DMEA-3464 (manganese)
William Mulcahy
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are six copies of Form MF-203, Owner's Consent to Lien, which are to be used in connection with the above-cited application.

Sincerely yours,

A. E. Weissenborn

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM (2)
Quinlan

... of the Interior
Defense Minerals Administration
RECEIVED
SEP 13 1954

xxxxxxxxxxxxxxxxx
So. 157 Howard Street
Spokane 4, Washington

September 10, 1954

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

Re: Docket No. DMEA-3464 (manganese)
William Maleshy
Silver Bow County, Montana

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Sincerely yours,

A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM (2)
Quinlan

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

William Mulcahy
112½ East Broadway
Butte Montana.

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Silver Bow., described as follows:1/

New Jersey Quartz Lode Mining Claim, Survey # 8005

Section 10, Township 3 North, Range 8 West.

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

2/ William Mulcahy
112½ East Broadway
Butte Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract or any amendment thereof shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract or any amendment thereof there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

_____

_____

_____

Dated this 30th day of August, 1954.

William Henry Baker [Seal]

Avis B. Crandall [Seal]

_____ [Seal]

DEPARTMENT OF THE INTERIOR
Bureau of Mineral Administration
RECEIVED
SEP 13 1954

William Mulcahy
112½ East Broadway
Butte Montana.

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

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New Jersey Quartz Lode Mining Claim, Survey # 8005

Section 10, Township 3 North , Range 8 West.

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2/ William Mulcahy

112½ East Broadway

Butte Montana.

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

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4. Changes and added provisions_____

Dated this 30th day of August, 1954.

William Henry Brooks [Seal]

Avis B. Crandall [Seal]

_____ [Seal]

DEPARTMENT OF THE INTERIOR
Solid Minerals Administration
RECEIVED
SEP 13 1954

William Mulcahy
112½ East Broadway
Butte Montana.

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Silver Bow, described as follows:1/

New Jersey Quartz Lode MiningClaim, Survey #8005

Section 10, Township 3 North, Range 8 West.

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

2/ William Mulcahy

112½ East Broadway

Butte Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

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(OVER)

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4. Changes and added provisions _____

_____

_____

_____

Dated this 30th day of August, 1954.

William Henry Barker [Seal]

Avia B. Crandell [Seal]

_____ [Seal]

DEPARTMENT OF THE INTERIOR
Lease Minerals Admin
RECEIVED
SEP 13 1954

William Mulcahy
112½ East Broadway
Butte Montana.

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Silver Bow, described as follows:1/

New Jersey Quartz Lode Mining Claim, Survey # 8005

Section 10, Township 3 North, Range 8 West.

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

2/ William Mulcahy

112½ East Broadway

Butte Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

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1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

4. Changes and added provisions _____

_____

_____

_____

Dated this 30th day of August 1954

William Henry Burkes [Seal]

Ira B. Crandell [Seal]

_____ [Seal]

DEPARTMENT OF THE INTERIOR
Lease Minerals Administration
RECEIVED
SEP 13 1954

William Mulcahy
112½ East Broadway
Butte Montana.

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Montana, County of Silver Bow, described as follows:1/

New Jersey Quartz Lode Mining Claim, Survey # 8005

Section 10, Township 3 North, Range 8 West.

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

2/ William Mulcahy

112½ East Broadway

Butte Montana

hereinafter called the "Operator"; and

WHEREAS, under the provisions of said contract the Government is entitled to a percentage royalty on production and to other rights and equities which do or may conflict with or be adverse to the rights of the undersigned:

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract or any amendment thereof shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract or any amendment thereof there is hereby granted to the Government a lien upon the land above referred to and upon any production of minerals therefrom until said royalty is fully paid or ten years have elapsed from the date of the contract, whichever occurs first.

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

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3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

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4. Changes and added provisions _____

_____

_____

_____

Dated this 30th day of August, 1954.

William Henry Barker [Seal]

Avia B. Crandall [Seal]

_____ [Seal]

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 13 1954

MF-203
(Revised July 1, 1954)

OWNER'S CONSENT TO LIEN

William Mulcahy
112½ East Broadway
Butte Montana.

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2/ William Mulcahy
112½ East Broadway
Butte Montana.

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3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

(OVER)

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4. Changes and added provisions _____

_____

_____

_____

Dated this 30th day of August 1954.

William Henry Barker [Seal]

Avia B. Crandall [Seal]

_____ [Seal]

400

Docket
Surname
Rutledge
Martin
Nelder
Newcomb
Selfridge
Fagerman

SEP 9 1954

Mr. A. E. Weissenborn, Executive Officer
DMEA Field Team, Region II
South 157 Howard Street
Spokane 4, Washington

Re: Docket No. DMEA 3464 - Manganese
William Mulcahy
New Jersey claim
Silver Bow County, Montana

Dear Mr. Weissenborn:

Reference is made to the subject docket and your letter of August 24, 1954, which states that a field examination of the property will be scheduled as soon as possible.

We will, therefore, hold this application in abeyance until the report and recommendations by the Field Team are received.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

APPROVED:

J. H. Hedges

Member, Bureau of Mines (JHB)

Thor H. Kiilsgaard

Member, Geological Survey (JHB)

FARutledge:foc
9-3-54
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. Reg. 22
Mr. DeHuff, USBM
Mr. Thor H. Kilsgaard, USGS

R.C.S.

400

Surname
Docket
Rutledge
Martin
Mulcahy
Newcomb
Hedges
Selfridge
Kilsgaard
Kjelman

SEP 9 1954

Mr. William Mulcahy
112½ East Broadway
Butte, Montana

Re: Docket No. DMEA 3464 - Manganese
New Jersey claim
Silver Bow County, Montana

Dear Mr. Mulcahy:

The above-docketed application for exploration assistance has been reviewed by the Iron and Ferro-Alloys Division of the Defense Minerals Exploration Administration. Subject to receiving the Owner's Consent to Lien requested in Mr. Weissenborn's letter of August 24, 1954, your application has been referred to Mr. A. E. Weissenborn, Executive Officer, DMEA Field Team, Region II, South 157 Howard Street, Spokane 4, Washington, for a field examination of the property.

Any assistance that you can render the members of the Field Team will be appreciated.

Sincerely yours,

C. O. Mittenderf (for)

Administrator

FARutledge:foc
9-3-54
cc to: Docket
Code 400
Adm. Reading File
Operating Comm.
FT. Reg. II
Mr. DeHuff, USBM
Mr. Kilsgaard, USGS

R.C.G.

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

August 27, 1954

Memorandum

To: Executive Officer, DMEA Field Team, Region II

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region II.

DMEA - 3464 William Mulcahy

Robert E. Adams,
Chief, Operation's Control
and Statistics Division

August 27, 1954

Mr. William Mulcahy
112 1/2 East Broadway
Butte, Montana

Subject: DMEA-3464
Re: Exploration Assistance

Dear Sir:

The receipt of your application dated August 17, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3464 and referred to the Iron and Ferro Alloys Division.

Kindly refer to in any future correspondence relating to your application.

Sincerely yours,

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

August 24, 1954

Mr. William Mulcahy
112½ East Broadway
Butte, Montana

Re: "Owner's Consent to Lien"

Dear Mr. Mulcahy:

The Defense Minerals Exploration Administration has issued new forms of the "Owner's Consent to Lien," revised July 1, 1954. Inasmuch as our Washington office, on another application, returned copies made up on the old form and insisted that the applicant use the revised form, I am returning the "Owner's Consent to Lien" forms signed by Barker and Crandall, together with 7 copies of the revised form.

We have sent your application on to Washington but before it can be considered, the new form MF-203 must be forwarded. Therefore, please have the form filled out and signed, and return 6 copies to this office just as soon as possible.

Yours sincerely,

Verne C. Fryklund
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: DMEA (2)
USBM (2)
Geologist

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
~~WASHINGTON 25, D.C.~~
So. 157 Howard Street
Spokane 4, Washington

August 24, 1954

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

Re: New application (manganese)
William Mulcahy
The New Jersey Lode Mining Claim
Silver Bow County, Montana

Dear Mr. Selfridge:

Enclosed are 3 copies of form MF-103 received from William Mulcahy, 112½ East Broadway, Butte, Montana. One copy is being retained for our files. Also enclosed is a copy of a lease agreement between Avis Barker Crandall and William Henry Barker, lessors, and the applicant.

A lead exploration project (Contract No. Idm-E155) with Mr. Mulcahy was recently certified (December 23, 1953); however, the new application is for manganese in a different area.

The proposed exploration seems to be somewhat complicated and expensive and will undoubtedly require a field examination. Due to the peculiar weather this summer, we will schedule a field examination as soon as possible.

Sincerely yours,

Verne C. Fryklund

Verne C. Fryklund
For: A. E. Weissenborn
Executive Officer, DMEA
Field Team, Region II

Enclosures

cc: USBM (2)
Quinlan

WILLIAM MULCAHY 112½ East Broadway, Butte Montana

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

RECEIVED
AUG 18 1954
U. S. G. S.
SPOKANE, WASH.

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. 3464
Metal or Mineral MANGANESE
Date Received
Estimated Cost $125,750
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: William Mulcahy, 112½ East Broadway, Butte, Montana

(*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 The New Jersey Lode Mining Claim, Survey No. 8005, in Township 3 North, Range 8 West of the Montana Principal Meridian.

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

(*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

(*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 Manganese

(*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 30 days and be completed within 24 months from the date of an exploration project contract.

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

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 [ ] 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 August 17, 1954

William Mulcahy
(Applicant)

By

1124 East Broadway
Butte Mont.

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

WILLIAM MULCAHY
112½ East Broadway,
Butte, Montana

4(a) The only work done on this claim was location - and assessment work to secure a patent. One shallow pit shows the vein and manganese oxide.

(c) The geologic features of the property are about the same as the Butte District and particularly of the West Side where there are numerous outcroppings of Manganese Oxide in vein type deposits striking easterly and westerly and dipping about sixty degrees to the South. This vein parallels the Norwich and Mapleton vein being about 300' North, both producing manganese oxide and carbonate ores, and right now I believe this to be the best claim to use my time and money to explore for manganese ore. The Butte-Philipsburg Districts have produced about 1/10th of their quota so I believe there is room for one more producer. See enclosed Sheet #1.

(d) Good road about 3 miles to manganese depot, 2½ miles from Butte.

(e) Plenty of miners, also supplies, water, equipment, an 8800 volt power line crosses the property

The Exploration Project.

William Mulcahy
112½ East Broadway
Butte, Montana

#5 (a) MANGANESE.

(b) I propose to develop this property in stages.
Stage No. 1, See Sheet No. 2. 16 to 20 hours of bulldozing depending on size of equipment. One cut completely across property. Seven cuts across exposed veins. Then select the most likely place for the shaft.

Stage No. 2. See Sheet No. 3. Sink a 4'x7' (in the clear) incline shaft 100' on the footwall of the vein, drift 300' each way on the vein from the shaft, then if ore is discovered as an operational project punch two raises on the ore to the surface using them for stoping, safety, and ventilation.

Stage No. 3. See Sheet No. 3. Sink another 100' of shaft drift 200' each way from the shaft. At this depth manganese carbonate ore should be found.

Stage No. 4. See Sheet No. 3. If ore is found on the 200' level sink 100' drift 200' each way from the shaft.

Stage No. 5. If ore is found on the 300' level sink 100' drift 300' each way from the shaft.

(c) See application.

(d) I have been mining since 1926, started leasing in 1937 and completed Contract Idm-E155 in 1953, everyone connected with this project are miners and leasors.

William Mulcahy
112½ East Broadway
Butte, Montana

#6. ESTIMATE OF COSTS.

All work will be done on contract. I will work with the Contractors and supervise the job. They will have their own equipment and will be paid when their work is certified by the D.M.E.A. Engineer.

Bulldozing, 20 hours at		$15.00 per hour	.....	$ 300.00
Shaft Sinking	1st 100'	95.00 per foot	.....	9,500.00
" "	2nd 100'	105.00 per foot	.....	10,500.00
" "	3rd 100'	125.00 per foot	.....	12,500.00
" "	4th 100'	150.00 per foot	.....	15,000.00
			TOTAL - - - -	$ 47,800.00

Drifting:

5'x7'	some timber	100 Ft. Level	600' at	$32.00	.....	$ 19,200.00
5'x7'	" "	200 Ft. "	400' at	35.00	.....	14,000.00
5'x7'	" "	300 Ft. "	400' at	39.00	.....	15,600.00
5'x7'	" "	400 Ft. "	600' at	45.00	.....	27,000.00
					TOTAL- - - -	$ 75,800.00

(F) 1 Quonset or other make of hut 10'x20'x36' fireproof, cement floor, erected ..... $ 1,650.00

1 Head frame 25' high 8" x 8" timbers, 24" sheave wheel, 2 12"x12"x15' Stringers, erected ..... $ 500.00

TOTAL - - - $ 125,750.00

(H)

Water may give us some trouble below the 100 Ft. Level, definitely so if the Norwich mine closed down.

William Mulcahy
112½ East Broadway
Butte, Montana

#7 (a) Yes.

(b) I have about $13,000.00; some in the bank, Post Office, National Service Insurance, Life Insurance, commercial bonds and stocks. I have a good lease and a good location. I have offers to buy interests in my lease if the loan is granted and several requests for work agreements after the bulldozing work is done.

I intend to drift from the shaft say about the 50 foot level or where the vein looks good to explore for Manganese oxide. It has been found in the adjacent claims. My plan is to sublease all above the 100 foot level, the ore qould be shipped in my name. I would receive an over-riding royalty after the Government and owners got theirs.

GOVERNMENT COPY.

WILLIAM MULCAHY

112½ East Broadway
Butte, Montana

QUARTZ MINING LEASE

THIS AGREEMENT, made and entered into this 31st day of July, 1954, by and between AVIS BARKER CRANDALL, of 343 West Lawrence Street, Helena, Montana, owning a one-half interest, and WILLIAM HENRY BARKER, of 6 East LaPlatte, Butte, Montana, owning a one-half interest, (hereinafter called "Lessors"), the parties of the first part, and WILLIAM MULCAHY, of 112½ East Broadway, Butte, Montana, (hereinafter called "Lessee"), the party of the second part, WITNESSETH THAT:

It is mutually agreed by and between the parties hereto as follows:

1. RIGHTS GRANTED TO LESSEES: The Lessors, for and in consideration of the rent and royalty to be paid, and the covenants and agreements to be observed, kept and performed by the Lessee for the period hereinafter stated, and upon the terms and conditions hereinafter set forth, do hereby lease, demise and let unto the Lessee the following described property situated in the County of Silver Bow, State of Montana, to-wit:

The New Jersey Lode Mining Claim, Survey No. 8005, in Township 3 North, Range 8 West of the Montana Principal Meridian.

2. EFFECTIVE DATE AND TERM: This agreement shall take effect on the date hereof, and shall continue in full force and effect to and including the 31st day of July, 1964, unless sooner terminated as hereinafter provided.

3. ROYALTY: All ores, concentrates and minerals shall be shipped in Lessee's name and he shall pay royalties to Lessors as follows:

1. On manganese ores or concentrates, Lessee shall pay to the Lessors 10% royalty;

2. On all other ores, concentrates and minerals:

The Lessee shall pay to the Lessors a royalty based upon the net mill or smelter returns thereof according to the following schedule:

(a) On ores, concentrates and minerals having a value of $15.00 per ton, 10% royalty;

(b) On ores, concentrates and minerals having a value of more than $15.00 and not more than $25.00 per ton, 15% royalty;

(c) On ores, concentrates and minerals having a value of more than $25.00 and not more than $35.00 per ton, 20% royalty;

(d) On ores, concentrates, and minerals having a value of more than $35.00 and not more than $50.00 per ton, 25% royalty;

(e) On ores, concentrates and minerals having a value of more than $50.00 per ton, 30% royalty.

By "net mill or smelter returns" is meant the amount received for such ores after deducting therefrom the cost of milling or smelting and freight and haulage charges from mine to mill, smelter or other purchaser.

Payment of the royalties on manganese ores or concentrates shall be made by Lessee to the Lessors at their post office addresses above mentioned, or to such other addresses as may hereafter be designated by them in writing, within ten days after final settlement therefor by the purchaser thereof; payment of all other royalty hereunder shall be made directly to the Lessors at their said respective post office addresses by the mill, smelter or other purchaser of ores, concentrates or minerals. Settlement returns shall be delivered therewith.

In case the Lessee shall receive any bonus or other amounts from the sale of or for the production of such ores over and above the settlement made by the mill, smelter or other purchaser, Lessee shall pay to the Lessors, the same percentage of such additional receipts as specified in the above scale of royalties for the lots for which settlement is made. With the payment of such additional royalty the Lessee shall submit to the Lessors a written statement showing the lot for which the additional payment was received, together with proof of the amount of such additinnal payment. Provided, however, that Lessee will not be required to pay any royalty on settlements on which governmental regulation prohibits the same.

4. LESSEE TO PAY TAXES AND ASSESSMENTS: The Lessee, in addition to paying the royalty herein stipulated, shall pay before the same become delinquent all taxes and all assessments which during the term hereof may be lawfully levied or assessed upon all structures and improvements, equipment and other property erected, constructed, installed or used by the Lessee in connection with the exercise of the rights herein granted, and shall also pay when due all net proceeds, occupation, license and output taxes lawfully levied upon all ores, or minerals extracted from said premises hereunder. The Lessee, upon the payment of such taxes and assessments, shall promptly furnish the Lessors with satisfactory evidence of such payment.

5. DEMISED PREMISES TO BE WORKED SEPARATELY: The demised premises shall be worked separately from all other lands, and all ore mined and removed therefrom shall be kept segregated from all other ore mined by the Lessee until the weight and value thereof shall be fully determined.

6. INSPECTION OF MINE: The Lessors, personally and through their authorized representatives, shall at all times during the term of this lease have the right to enter upon and inspect the mine or mines and all the workings thereof on the demised premises and to make any survey that they may deem necessary, either for the purpose of checking the amount of ores mined or for an examination of the physical condition of the property and workings.

7. CONDUCT OF MINING OPERATIONS: The Lessee shall enter at once upon said mine or premises and work the same in a manner necessary to good and economical mining so as to take out the greatest possible amount of commercial ore free from waste, having due regard to the safety, development and preservation of said premises as a workable mine, and shall work said mine and premises as aforesaid continuously and steadily from the date of this lease, weather conditions permitting, and in the prosecution of said work shall perform at least the following amounts of work during each year of the effective period hereof, to-wit:

1. During the first year he shall perform sixteen hours of bulldozing work in a search for leads and ore deposits, and shall sink and timber a mining shaft of at least the usual size and kind, a vertical distance of fifty feet;

2. During the second year he shall sink and timber such shaft an additional vertical distance of fifty feet, and shall drive and timber two hundred feet of drift.

3. During each of the remaining eight years thereof he shall sink and timber such shaft an additional vertical distance of fifty feet.

4. If during any year Lessee shall perform more than the amount of work required therefor, he shall be credited with the additional work against the requirements for the subsequent year or years.

In consideration of said lease the Lessee hereby covenants and agrees with the Lessors that he will well and sufficiently timber said mine at all points where proper and repair all old timbering whenever it may become necessary in order to preserve the mine in a workable condition;

That he will occupy and hold all unappropriated cross and parallel veins, leads, dips, spurs, feeders, crevices or mineral deposits of any kind which may be discovered in working under this lease, or in any development work connected with the working of said lease by said Lessee, or by any person or persons under him in any manner and not during the term of this lease locate or attempt to locate or record the same, or allow the same to be located or recorded except in the names of the Lessors and the same shall be included in and become subject to this lease and option.

That he will keep all shafts, drifts, tunnels and workings in good condition of repair, and will keep the same drained and clear of loose rock and debris of all kinds;

That he will adequately fence, cover or otherwise protect all shafts, cuts or other surface openings made or used by him under this lease.

8. BOOKS AND ACCOUNTS: The Lessee shall keep books and accounts showing the amount of ores extracted from said mine, the amount of ores shipped, sold or treated, and the amount of money received from said ore, or the value extracted therefrom, and the Lessors shall have free and full access to said books, accounts and records of the Lessee at all reasonable times.

9. DISPOSAL OF WASTE, REFUSE AND MINE WATER: The Lessee shall make such provision for the disposal of waste, refuse and mine water from the mine or mines on the demised premises that the same shall not be a nuisance nor injure the property of the Lessors, or of others, nor obstruct or contaminate any stream, or obstruct any right of way or other means of transportation or travel on the lands of the Lessors or others.

10. LABOR AND MATERIAL TO BE FURNISHED BY LESSEE: The Lessee shall, at his own cost and expense, furnish all labor, material and supplies necessary for the proper operation of the demised premises under this lease, and shall operate under this lease as an independent operator and not as an agent or employee of the Lessors. Lessee shall be free to select, employ and discharge all persons who perform work or render services for him under this agreement.

11. LIENS: The Lessee shall, when due, fully pay for all machinery, equipment, and materials joined or affixed to the premises herein described, and shall, when due, pay in full all persons who perform labor upon said premises, and shall not permit or suffer any liens of any kind or nature to be enforced against said premises for any work done or machinery, equipment or materials furnished thereon at the instance or request or on behalf of the Lessee.

12. STATE AND FEDERAL ENACTMENTS AND CITY ORDINANCES: The Lessee, in the operation and development of said premises, shall observe and comply with all applicable Federal and State Laws, safety regulations, and city ordinances, and shall comply with the laws of the State of Montana in reference to Workmen's Compensation, and shall insure and keep insured during the term hereof all persons employed by Lessee under the provisions of said Workmen's Compensation Law.

13. ASSUMPTION OF RISK - INDEMNITY: (a) The Lessee assumes all risk of personal injury to the servants and employees of the Lessee and persons with whom he may be transacting business while on the demised premises, and all risk of loss or damage to buildings or contents, and also to any other property brought upon or in proximity to, said premises by the Lessee, or by others with the knowledge or consent of the Lessee.

(b) The Lessee agrees to, and does hereby, indemnify and hold harmless the Lessors against any and all damages, liability, liens, claims, demands, costs, causes of action, suits at law or in equity in any way growing out of this agreement, or because of the operation or the carrying on of the work contemplated hereunder.

14. LESSORS TO BE GIVEN NOTICE OF LITIGATION: The Lessee shall promptly notify the Lessors in writing of the institution of any litigation involving the rights granted by this agreement, and in the event the Lessors are, in their judgment, in any way interested therein, they may at their option, enter into the conduct and defense of such litigation to the extent they may deem advisable.

15. DEFAULT BY LESSEE: Time is of the essence of this agreement and in case the Lessee shall fail to keep and perform all, or

any one of the covenants and agreements herein written and contained to be by him on his part performed in the manner, form or at the time as herein agreed, or shall discontinue work upon said mining claim for sixty days without the Lessors' written consent, then the Lessors may, at their option, upon thirty days' notice in writing to Lessee declare this agreement terminated and at an end, unless during the said period the Lessee shall have remedied said default or have resumed work in good faith; but upon any subsequent discontinuance of work for thirty days without Lessors' written consent, and their giving of such notice to Lessee, this agreement shall be immediately terminated; upon any such termination all the rights of the Lessee shall cease and be wholly terminated and at an end.

A Waiver by the Lessors of a particular breach of any covenant or agreement shall not be deemed or held to be a waiver of or effect any other breach or impair their rights resulting therefrom.

16. FOREST FIRE SAFEGUARDS AND REGULATIONS: The Lessee shall observe and comply with all regulations of the United States and State Forestry Departments now in effect, or which may hereafter be put in effect, concerning operations within forest lands, and particularly all such regulations relating to fire hazards, and to the burning or disposal of any material in any National or State Forest.

17. SURRENDER OF PROPERTY: Upon the termination of this agreement for any cause, the Lessee shall immediately surrender unto the Lessors all of the premises herein demised without delay or hindrance and the Lessors shall have the right immediately upon the expiration or termination of this agreement to enter upon the premises aforesaid and to take immediate possession thereof without declaration of forfeiture, act of reentry or process of law.

18. REMOVAL OF EQUIPMENT: The Lessee shall have the right to remove from the demised premises all machinery, tools and other equipment placed thereon by him within a period of ninety (90) days from the termination hereof, and unless so removed within said period the same shall immediately become the property of the Lessors, but he shall not remove or impair any supports, mine props or mine timbers which may be necessary for the protection of any openings of such mine or mines.

19. The Lessee shall have the option to purchase the said mining claim for the sum of One Hundred Thousand Dollars ($100,000.00) at any time during the term of this lease, providing the same is then in full force and effect and Lessee is not then in default thereunder, by giving written notice of such election to the Lessors and by paying the said purchase price; provided further that all royalties paid hereunder shall be credited upon the said purchase price.

20. HOW NOTICES TO BE GIVEN: Allnotices given or required to be given under the terms of this agreement shall be in writing, sent by United States mail postage prepaid and shall be addressed to the Lessors at the same addresses mentioned above for payment of royalties.

21. SUCCESSORS AND ASSIGNS: This agreement shall be binding upon and inure to the benefit of the parties hereto, their heirs,

executors, administrators, successors and assigns; PROVIDED, however, that the Lessee shall not transfer or assign this agreement or any interest therein or any right granted hereunder or sublet any portion of said mining claim without the written consent of the Lessors, but he may enter into working agreements with others for the performance of work thereon or the extraction of ores and minerals therefrom.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

Avis Barker Crandall

William Henry Barker

LESSORS

William Mulcahy

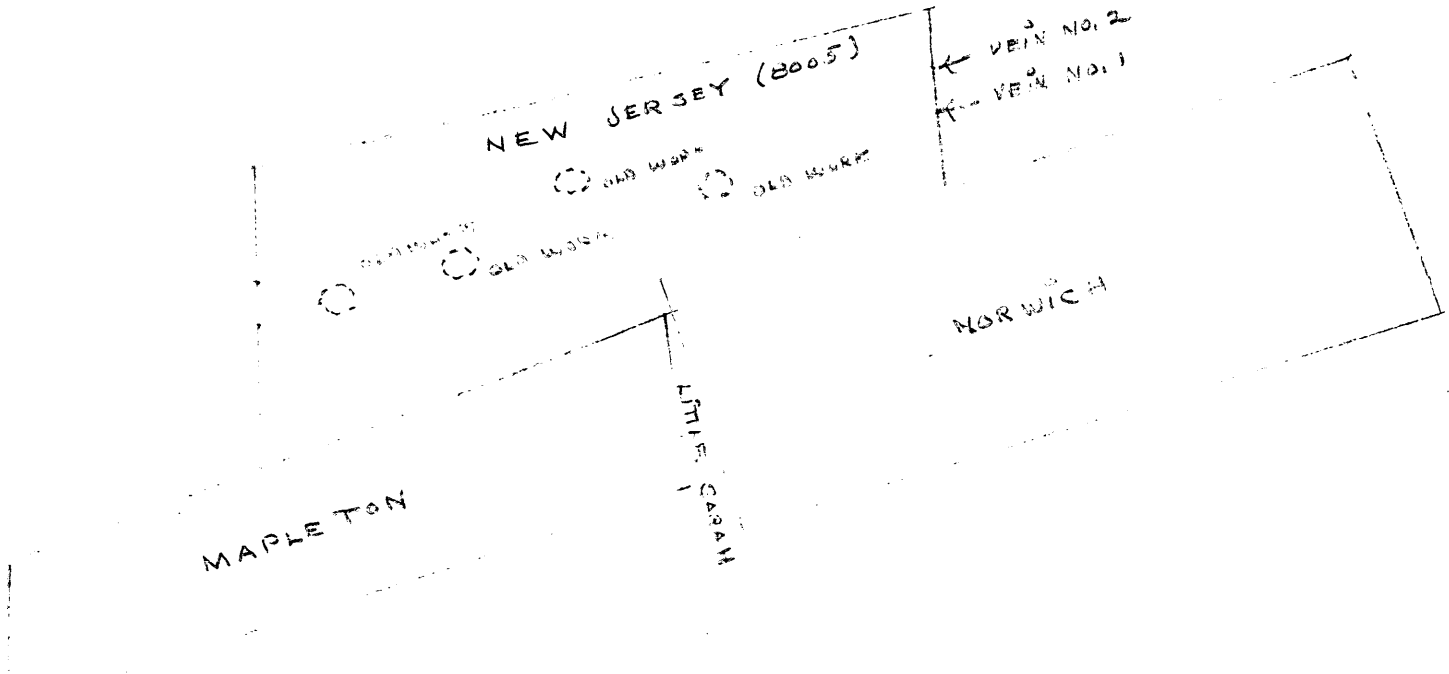
LESSEE

STATE OF MONTANA)
: ss.
County of Silver Bow)

On this 31st day of July, in the year 1954, before me, Howard A. Johnson, a Notary Public in and for the State of Montana, personally appeared Avis Barker Crandall, William Henry Barker and William Mulcahy, known to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

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

Howard A. Johnson
Notary Public for the State of Montana
Residing at Butte, Montana
My commission expires Jan. 5, 1955

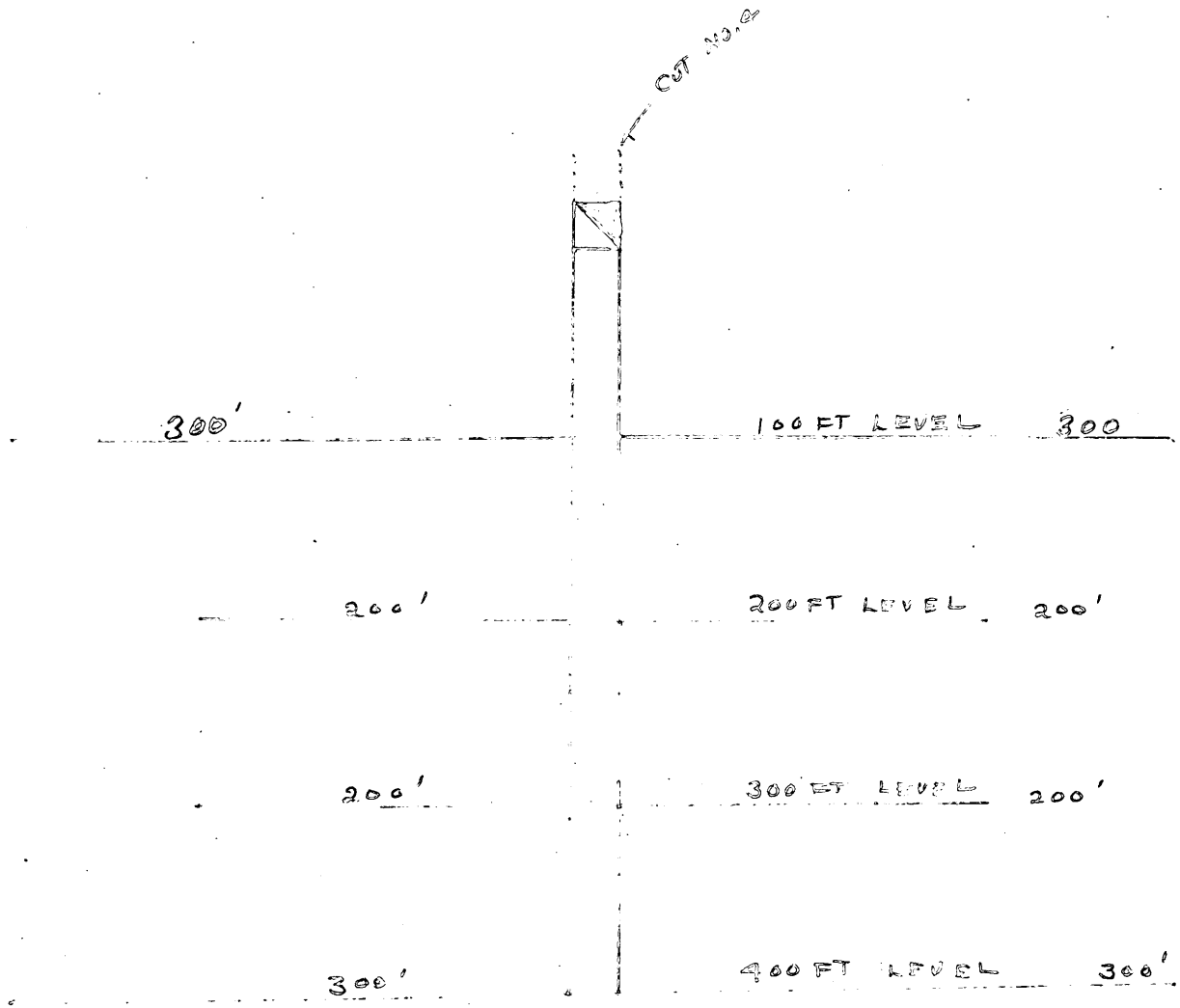


William Mulcahy 112½ East Broadway Butte Mont.

SHEET NO. 2
PROPOSED WORK
STAGE NO. 1

William Mulcahy 112½ East Broadway Butte Mont.

SHEET NO. 3
PROPOSED WORK
STAGE NO. 2, 3, 4, 5



William Mulcahy 112½ East Broadway Butte Mont.