DMA Form 1

DEFENSE MINERALS ADMINISTRATION
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To:	Code 400, Rm. 3538	Date	5-20-52
To:	Operating Com.	Date	5-23-52
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denied

-400

SEP 4 1952

Mr. Albert A. Blakley
P.O. Box 64
Silver City, New Mexico

Re: Docket No. DMTA 2538 - Manganese
Albert A. Blakley
Black Diamond Mine
Mohave County, Arizona

Dear Mr. Blakley:

Your application for exploration assistance and other reports concerning your Black Diamond property available to us in Washington have been carefully reviewed.

This information, although noting a small amount of high silica, marginal, manganese ore on your property, indicates to us that the probability of disclosing mineable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret, therefore, to inform you that your application is denied.

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

Sincerely yours,

C. O. Mittendorf

Acting Administrator

FAButledge:lm
8/28/52

cc: Admn. Reading File
Docket
N. B. Melcher, DSBM
M. D. Crittenden, DRGS
Field Team Reg. IV
Operating Committee
W. S. Martin
F. A. Butledge

SEP 4 1952

Hon. John J. Dempsey
House of Representatives
Washington, D. C.

My dear Mr. Dempsey:

This is in reply to your letter of August 30, 1952, in which you ask whether a final decision has been reached or a report has been made on Mr. Albert A. Blakley's Black Diamond Mine, Mohave County, Arizona, our Docket No. DMA 2538 (Manganese).

This Administration has denied the above application after a thorough review of the available information, as shown by the enclosed copy of our letter to Mr. Blakley.

If we can be of further aid in this matter, please so inform us.

Sincerely yours,

C. O. Mittendorf

Acting Administrator

Enclosure

W.Martin:lm
9/3/52

cc: Adm. Reading File
Docket
H. R. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
W. S. Martin

Acting Administrator, DMEA August 28, 1952

Iron and Ferro-Alloy Division, DMEA

Denial of application for exploration assistance in the amount of $64,450.00
Docket No. DMEA 2538 - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

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

1. An examination by the field team indicated the property has little merit.

2. The field team recommends denial.

3. There is no geologic probability of finding any significant deposit of manganese ore.

4. Inferred reserves are small, low in manganese content, and contain excessive silica. The Dixie Silica Sand Corporation, St. George, Utah, shipped three lots of hand-sorted ore totaling 122.7219 long tons to the Columbia-Geneva Steel Division of the U. S. Steel Corporation in 1950. The ore shipped averaged 27.6 percent Mn and 40.17 percent SiO_2.

   The Dixie Silica Sand Corporation abandoned the claims after three months of operations.

5. The Commodity Division of the U. S. Geological Survey recommends denial.

FARutledge:lm
8/28/52

W. S. Martin, Acting Chief
Iron and Ferro-Alloy Division

cc: Admn. Reading File
Docket
W. S. Martin
F. A. Rutledge

400

IN REPLY REFER TO:

G-MD-CF

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

August 25, 1952

Memorandum

To: George C. Selfridge, DMEA

From: D. M. Lemmon, USGS

Subject: Field report DMEA 2538 - Manganese
Black Diamond Manganese claims
Elbert A. Blakley
Mohave County, Arizona

These claims were examined during the week of June 9, 1952 by C. S. Brumfield of the Geological Survey and R. W. Ageton of the Bureau of Mines. Their report, dated August 1952, recommends denial of an exploration project costing $64,450.

I concur with the recommendation that the application be denied, and also with the recommendation that a proposed alternative program be denied.

DMLemmon:gt

EXPLORATION

400

Mr. Hibert A. Blakley
P.O. Box 64
Silver City, New Mexico

Re: Docket No. DMEA 253RX - Manganese
Hibert A. Blakley
Black Diamond Mine
Mohave County, Arizona

Dear Mr. Blakley:

Your application for assistance in exploring the Black Diamond Mine in Mohave County, Arizona, has been reviewed by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration and has been referred to Mr. A. E. King, Executive Officer, DMEA Field Team, Region IV, U. S. Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado, for a field examination.

The Regional Office will contact you at an early date in regard to the examination. Any assistance that you can render the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

FARutledge'lm
5/22/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV (2)
Operating Committee
G. C. Selfridge
F. A. Rutledge

EXPLORATION

Hon. John J. Dempsey
House of Representatives
Washington, D. C.

Re: Docket No. DMMA 2536X - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

My dear Mr. Dempsey:

This is in reply to your letter of May 19, 1952, in which you ask to be informed of developments regarding Mr. Elbert A. Blakley's application for exploration assistance.

This Administration received his application on May 19 and referred it to Mr. V. R. King for a field examination as shown by the attached copy of a letter to Mr. Blakley.

If we can be of further aid in this matter, please so inform us.

Sincerely yours,

C. O. Mittendorf

Acting Administrator
Defense Minerals Exploration
Administration

Enclosure

GOSelfridge:lm
5/23/52

cc: Admn. Reading File
Docket
M. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
G. J. Selfridge

IN REPLY REFER TO:

G-MD-MDC

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

400

May 21, 1952

Memorandum

To: George C. Selfridge, DMEA

From: Max D. Crittenden

Subject: Elbert A. Blakley
P.O. Box 64
Silver City, New Mexico

DMEA 2538 - Manganese

In February 1952 a development loan application in the amount of $350,000 was received from Elbert A. Blakley who proposed to develop and operate a manganese prospect in northwestern Arizona known as the Black Diamond and Black Diamond No. 1. The property is reported to be 18 miles east of Mesquite, Nevada on the northwest slope of Mt. Bangs. It is now 80 miles to the railroad but a proposed new road will decrease this distance to 35 miles from the mine to Moapa-Glendale. The operator is reported to have shipped 3 cars to Geneva Steel Company in 1950. The average grade of the shipments was 29%, 26.5% and 27.6%.

The Geological Survey has no first-hand information regarding this deposit. A brief abstract of a private report at one time available to the Survey, indicated that the ore occurred at a bed vein intersection in limestone but the average grade was not more than 30% Mn. It was obvious that the proposition did not warrant any such expenditure for development, and the exploration loan has resulted.

The applicant has not specified what sort of exploration he proposes to do except to indicate that he would like to trench, also core drill and drift along the fault zone wherever feasible from a mining standpoint. The manner of this presentation and the lack of specific information or maps of the property suggests that the applicant is not competent or at least is not prepared now to undertake the proposed exploration. This alone is probably adequate basis to reject the proposal but it may save time in the long run to request that the Field Team appraise the geological prospects.

MDCrittenden:gt

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

224 New Customhouse
Denver 2, Colorado

August 13, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2538 (Manganese)
Elbert A. Blakley's Black Diamond Manganese Claims
Mohave County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application which was a request for exploration aid in the amount of $64,450.

The examiners believe that this deposit does not merit an exploration program and they recommend that the loan be denied.

We concur in this recommendation.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures
cc: WRSterns w/copy final report
AHKoschmann w/copy final report
Mining Div. w/copy final report
DMA Final Report
CAAnderson w/copy final report

Mining Division
Region IV

August 13, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2538 (Manganese)
Elbert A. Blakley's Black Diamond Manganese Claims
Mohave County, Arizona

Enclosed are nine copies of the engineering report by R. W. Ageton of the Bureau of Mines on DMEA 2538.

The examining engineer believes this deposit does not present a large enough target for an exploration loan and he recommends that the loan be denied.

We concur in this recommendation.

W. H. King

W. H. King

Enclosures

Mining Division
Date Rec'd.

AUG 11 1952

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

August 7, 1952

Memorandum

To : W. L. King, Denver Colorado

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

Subject : Final Report, DMA Docket 2538, Albert A. Blakley's Black Diamond Manganese Claims, Navajo County, Ariz.

Enclosed are original and eight copies of the section on Summary, Conclusions and Recommendations by C. S. Bromfield of the Geological Survey and R. A. Ageton of the Bureau of Mines, and the section on Engineering by Ageton. A separate report on Geology will be submitted by the Geological Survey.

As the deposit contains only a small amount of low-grade inferred ore, with no measurable or indicated reserves, the examiners believe that the proposed loan could not be repaid to the Government, therefore they suggest that the loan be denied. I concur with their recommendations.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC: A. S. King (N)
A. F. Shride
DMA-2538
OF

WWRStorms:als

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

[illegible]
[illegible], Colorado

August 12, 1952

Memorandum

To: [illegible]

From: A. H. Koschmann

Subject: [illegible] Placer Diamond Claims, [illegible] County, Colorado.
[illegible] Manganese.

[illegible] the original [illegible] of the geologic report by [illegible] of the U. S. Geological Survey [illegible] the above docket.

[illegible]

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

August 7, 1952

Memorandum

To: A. M. Koschmann, Denver, Colorado

From: A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DM A 2538, Black Diamond Claims (Albert A. Blakley), Mohave County, Arizona (Manganese)

Enclosed are the original and 8 copies of the above report by C. S. Bromfield of the Geological Survey.

This report and the recommendation that an exploration loan be denied, because the exploration potential is for a small tonnage of probably non-minable ore, have my approval.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
NO. K-4 IV

DMEA-453B, Albert A. Blakley's Black Diamond

Manganese Claims

Mohave County, Ariz.

C. S. Bromfield, Geologist
U. S. Geological Survey

R. W. Ayeton, Mining Engineer
U. S. Bureau of Mines

August 1952

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By G. E. Brownfield[1] and R. W. Ageton[2]

Elbert A. Blakley, P. O. Box 64, Silver City, N. Mex., applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for an exploration loan amounting to $64,450.00 (DMEA-253). This loan was to be used to remove overburden from his manganese deposit on the Black Diamond and Black Diamond No. 1 claims, to be followed by core drilling in order to determine the limits of the mineralization. The work was to be completed in 180 days. The Black Diamond and the Black Diamond No. 1 claims are located in Mohave County, Ariz., about 20 miles southeast of Mesquite, Nev. The DMEA examiners visited the property during the week of June 9, 1954.

Present information indicates that the Dixie Silica Sand Corp. of St. George, Utah, first operated the property in 1950, shipping 122.7219 long tons of manganese ore in three shipments of a weighted average of 27.0 percent manganese. After about 3 months of operation it abandoned the claims. The deposit was relocated by a group of five men who sold their interest to Charles A. Howe, Mesquite, Nev. Howe later sold his rights to the Four States Prospecting and Exploration Co., St. George, Utah. The applicant is the owner of a contract of assignment from the latter company.

1/ Geologist, U. S. Geological Survey
2/ Mining engineer, U. S. Bureau of Mines

Manganese oxides are exposed in a fault zone in limestone on the Black Diamond claims. The zone strikes N. 30° E. and is partially exposed over a length of 140 feet. It has a width of from 20 to 70 feet. Apparently, the best part of the zone has been explored by shallow workings. Float and limited exposures indicate that the extension of the zone is very low grade. Manganese occurs as psilomelane, pyrolusite, and wad surrounding and replacing silicified altered limestone. Silica content of the ore is high, ranging from 37 to 44 percent. Most of the zone is of too low a grade to be of any interest at present, the whole probably averaging less than 10 percent manganese. Part of the zone is of better grade and it is estimated that to a depth of 50 feet, 3,000 to 6,000 long tons of 15 to 30 percent manganese is the potential of the deposit.

The deposit has been explored approximately 140 feet along its northerly strike and for a width of 40 feet by an open pit to a depth of about 15 feet. An adit, 3 by 4 by 9 feet, was driven into the deposit without encountering any high-grade manganese. There is no mining equipment on the property and no other facilities such as buildings.

Under present price schedules at Geneva, Utah, it is estimated that $6.14 per dry long ton, net f.o.b. mine, could be realized on ore containing 27.6 percent manganese, the weighted average of the 3 shipments. Careful open-pit mining, sorting and loading might be accomplished at costs ranging from $3.00 to $6.00 per ton. Mining the deposit at depths 40 feet or more below the surface would have

to be done by underground methods at a much higher cost per ton. The present economics of the deposit indicate that there is a small tonnage that is marginal and that possibly a profit could be realized by the applicant.

It is estimated that 21,000 tons of about 23 percent manganese ore would have to be mined and shipped in order to pay for the cost of the minimum exploration program. There are no measured reserves or indicated reserves, and it is estimated the inferred ore reserves to a depth of 50 feet are 3,000 to 6,000 tons of 15 percent to 30 percent manganese ore. It is believed that this deposit does not present a large enough target for the exploration program. Until beneficiation tests have been run on material from the deposit, the silica content of about 30 percent precludes shipment to the Government stockpile.

The marginal economic condition, the small inferred tonnage of 3,000 to 6,000 tons of 15 to 30 percent manganese ore, the high silica content of the deposit, and the remote location combine to suggest that under present conditions the deposit does not merit an exploration program. The examiners recommend that the application be denied.

BLACK DIAMOND CLAIMS
(ELMER A. BLAKLEY)
MOHAVE COUNTY, ARIZONA
DMEA 2538

MANGANESE

Geology

By
Calvin S. Brumfield
Geologist, U. S. Geological Survey

BLACK DIAMOND CLAIMS
(ELBERT A. BLAKLEY)
MOHAVE COUNTY, ARIZONA
DMEA 2538

MANGANESE

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Conclusions and Recommendations	4
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Figure 1	Location Map	See Engineering Report
Figure 2	Geologic Sketch Map, Black Diamond Mine, Virgin Mountains Region, Mohave County, Arizona	Following Page 1

INTRODUCTION

The Black Diamond manganese claims are located on the upper slopes of Pakson Wash in the extreme northwestern corner of Arizona. The Virgin Mountains are close by to the west and the Grand Wash Cliffs are 10 miles to the east. The mine is on an isolated limestone hill which rises 175 to 200 feet above the surrounding area. To the west about one-half mile are prominent cliffs exposing a thick section of westerly dipping Permian red beds overlain by Coconino sandstone which are in turn capped by Kaibab limestone. Immediately to the east are isolated outcrops of buff to red crossbedded sandstones. Farther east a mesa is formed from the beveled edges of the gently dipping Permian red beds, Coconino sandstone, and Kaibab limestone overlain by Quaternary basalt.

BLACK DIAMOND MANGANESE DEPOSIT

Manganese oxides are found in a fault zone in cherty Paleozoic limestone on the Black Diamond claims. The zone strikes N. 30° E. and has a width of 20 to 70 feet. An open cut, two smaller cuts, two short adits, and a trench explore the zone. It is exposed in part over a strike length of 140 feet. At its southwest end, the zone is about 70 feet wide, and along strike abuts brecciated limestone. Where exposed by the open cut the zone is split in two by a brecciated limestone horse (Fig. 2). This horse apparently does not extend much beyond the southwesterly limits of the pit (Fig. 2). Northeast, uphill, along the strike projected, and beyond the open cut the surface is covered by rock debris. The continuation of the structure, however, is indicated by a shallow gully or depression of the surface. About 75 feet north of the open cut a shallow trench indicates the zone to

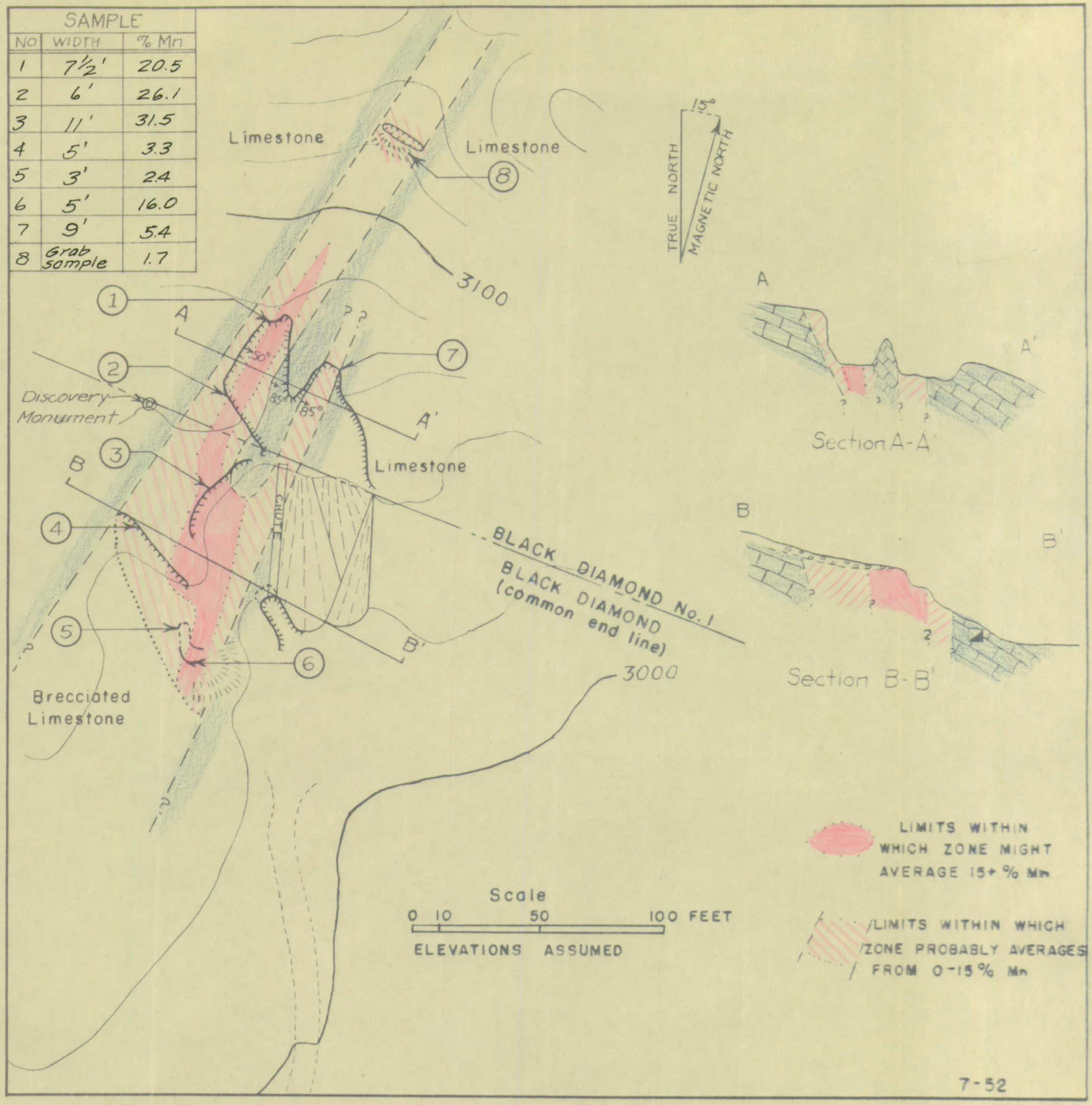

FIG. 2 — GEOLOGIC SKETCH MAP, BLACK DIAMOND MINE, VIRGIN MOUNTAINS REGION MOHAVE CO., ARIZONA

DMEA 2538

have a width of about 20 feet. The zone at this point was very low-grade. A grab sample of the better looking material assayed only 1.7 percent manganese. A saddle is formed where the fault zone crosses the crest of the hill (Fig. 2). At the crestline the zone as indicated by the scale is also about 20 feet wide. Very little evidence of manganese oxides was found along the extension of the fault zone in either direction, and that which was found was low-grade. No high-grade float was observed. Though in large part the structure is covered, indirect evidence is unfavorable and seems to indicate that the most manganiferous part of the zone has been exposed by the present workings.

The depth to which manganese oxides would persist is an unknown factor. There are no other known manganese deposits in the area, and therefore no previous experience to judge by. The fault zone is fairly wide and the breccia very probably was fairly permeable, both of which conditions may favor oxidation and justify some optimism in this regard.

The breccia zone contains manganese oxides in part as psilomelane and pyrolusite, and in part of soft indeterminate oxides best termed "wad." The oxides surround and replace white fragments of silicified and altered limestone which acted as nuclei for manganese deposition. In places the abundance of white breccia fragments makes the manganiferous zone of very low grade.

As exposed, the over-all manganese content of the fault zone would average considerably less than 15 percent manganese. A part of the zone, as indicated on Figure 2, contains a higher proportion

of better grade breccia material and would probably average between 15 and 30 percent manganese. Assays of samples taken by the examining team are shown on Figure 2. Analyses made by the Columbia-Geneva Steel Division of United States Steel Corporation on 3 shipments of ore from this property are attached in the appendix and are undoubtedly a fair indication of the nature of the ore. Silica content is consistently high and ranges from 35 to 44 percent. There are no deleterious amounts of other elements.

As far as is known, total production of the property to date has been 133 tons. The first record of production is of 10 tons of ore averaging 31 percent manganese which was shipped to the Metals Reserve Company in 1944. The lot was rejected. Three cars of manganese ore totaling 123 tons were shipped in 1950 by the Dixie Silica Sand Company to the Columbia-Geneva Steel Division of the United States Steel Corporation at Salt Lake City. The three cars averaged according to settlement sheets, 29, 26.5, and 27.6 percent manganese. The shippers received in payment $13.03, $11.93, and $12.42 per ton on these three cars. The company, the applicant reports, lost money on this venture and thereafter abandoned the property.

ORE RESERVES

The manganese oxide zone is partially exposed over a strike length of 140 feet and has an average width of 50 feet. From this zone it is estimated that 400 to 500 tons of low grade material, probably averaging less than 10 percent manganese, could be mined per vertical foot of depth. Assuming a depth extension of 50 feet the zone might contain 20,000 to 25,000 tons of low grade material. Of this amount

it is estimated 3,000 to 6,000 tons of 15 to 30 percent manganese ore might be recovered.

The writer believes that the widest and best part of the deposit has been exposed and that the extension of the zone in either direction will be very low grade or essentially barren.

CONCLUSIONS AND RECOMMENDATIONS

The potential of the Black Diamond deposit is estimated to be on the order of 3,000 to 6,000 long tons of 15 to 30 percent manganese ore to a projected depth of 50 feet. This tonnage could be obtained only by mining and sorting from a larger tonnage of low-grade (less than 10 percent) material in which it is distributed as lenses or pockets. Evidence from surface exposures, float, and a shallow trench, though not conclusive, indicates that the strike extension of the structure contains only low grade (less than 15 percent) or essentially barren breccia.

In addition to the generally low-grade of the deposit, analyses of the previous shipments show a high silica content of about 35 to 45 percent. Whether it would be possible to beneficiate the ore to meet stockpile specifications, it is not possible for the writer to say. However, Columbia-Geneva Steel at Salt Lake City has purchased the ore in the past. Present value of the selectively mined ore from the Black Diamond claims is approximately $15.00 to $17.00 per ton, purchased by Columbia-Geneva Steel, f.o.b. shipping point. In 1950 previous operators shipped 123 tons to Salt Lake City and received about $13.00 per ton for the ore. According to the applicant these operators lost money on the shipments and abandoned the property.

A further handicap faced by the applicant is a 20 percent royalty on any production from the property. Any loan granted by the Government would raise this royalty to 25 percent. Mining and trucking costs plus the 25 percent royalty would probably make the property uneconomic under present conditions. The applicant, however, though he has had no experience in mining believes that with "efficient" methods he can produce manganese ore at a profit. He is vague about ways and means.

Considering the small potential of the deposit, the low-grade and high silica content of the ore, the deposit would not seem to constitute a significant discovery of manganese ore, and it is doubtful whether operations scaled to this limited potential would be profitable. The writer recommends that the project be denied.

APPENDIX

Analyses of three shipments to the Columbia-Geneva Steel Division of the United States Steel Corporation, March 27, 1950:*

	No. 1 (34.2393 tons)	No. 2 (45 tons)	No. 3 (43.3915 tons)
SiO_2	38.88	43.93	37.27
Al	.84	.68	.23
CaO	.52	1.60	2.56
S	.131	.10	.019
Fe	3.6	5.5	4.7
P	.174	.232	.064
Mn	29.0	26.5	27.6
As	.074	.062	.081
Zn	--	.03	.03

* Data from settlement sheets in possession of Elbert A. Blakley, the applicant.

DMA-534, GILBERT A. BLAKLEY'S BLACK DIAMOND
MANGANESE CLAIMS
MOHAVE COUNTY, ARIZ.

Engineering Report

By R. W. Ageton,
Mining Engineer
U. S. Bureau of Mines

August 1952

[illegible], ROBERT E. CLARK'S BLACK DIAMOND
MINING CLAIMS
MOHAVE COUNTY, ARIZ.

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ILLUSTRATIONS

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2	Geological map	(in Geology section)

INTRODUCTION

This report describes the results of an examination made in connection with the loan application of Elbert A. Blakely, P. O. Box 64, Silver City, N. Mex., to the Defense Minerals Administration under the Defense Production Act of 1950, as amended. The application was docketed as DMA-2538. The applicant requested an exploration loan amounting to $24,450.00, which was to be used to remove overburden from his manganese deposit on the Black Diamond and the Black Diamond No. 1 claims, to be followed by core drilling in order to determine the limits of the mineralization. The property was visited by the DMA examiners during the week of June 9, 1952.

ACKNOWLEDGMENTS

The writer wishes to thank Elbert A. Blakely for his help during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The Black Diamond and the Black Diamond No. 1 claims are on the eastern slopes of the Virgin Mountains about 20 miles southeast of Mesquite, Nev., and approximately 8 miles north of Jacob's Ranch, in an unnamed mining district of Mohave County, Ariz. (figure 1). The area is commonly referred to as the "Strip", since it is a relatively narrow area of the state north of the Colorado River. The claims lie in the section of the "Strip" that is still unsurveyed.

There are two access roads to the mine. The longer of the two (approximately 37 miles long) starts in Nevada at the eastern side of

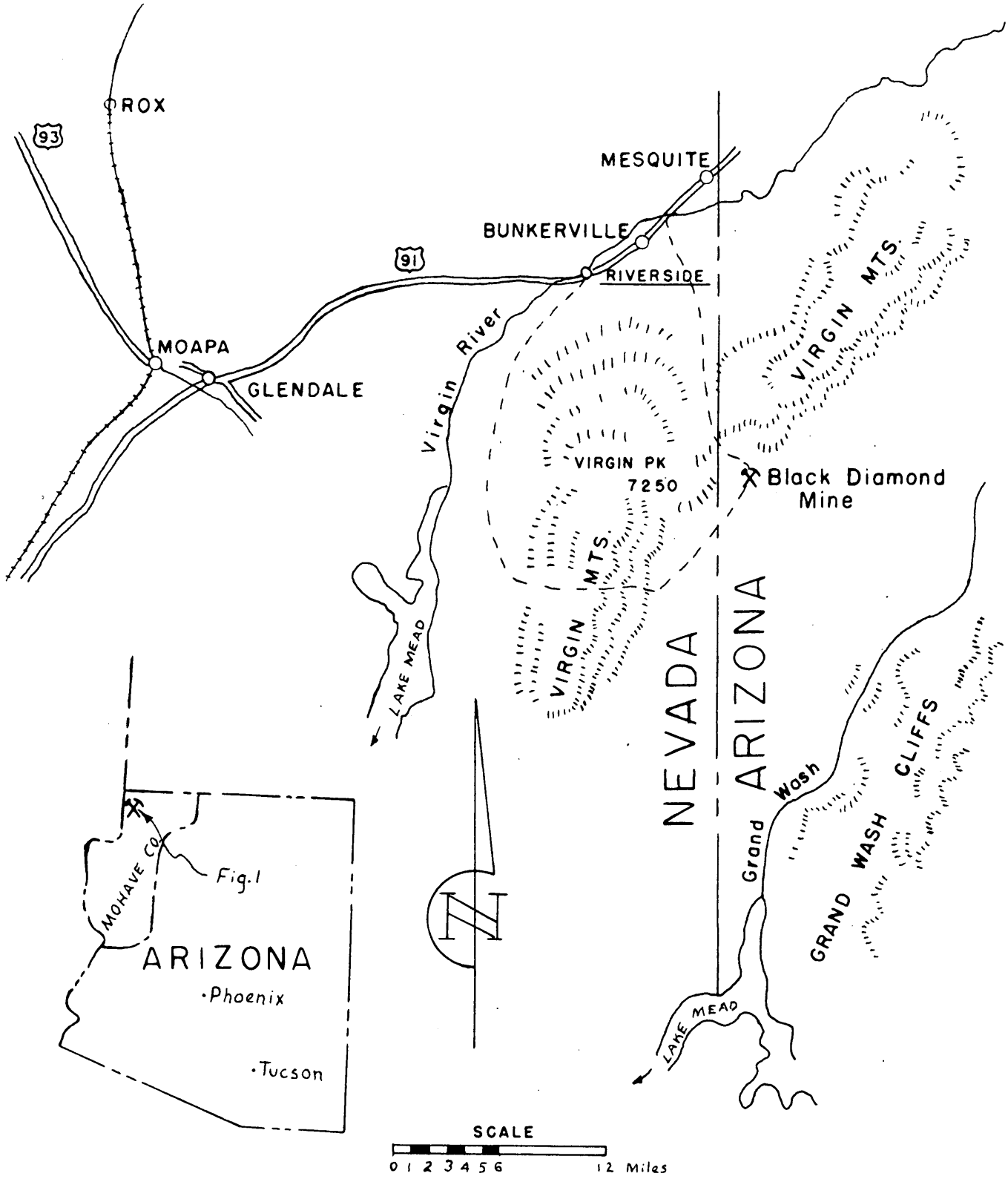

Figure 1—Location Map, Black Diamond Mine
Mohave County, Arizona DMEA 2538

the Virgin River near the town of Riverside, Nev. This road is a good dirt road for about half the distance, then it becomes progressively worse before reaching the property. The other route is about 11 miles long, but it often is impassable, particularly during the rainy seasons.

The topography surrounding the property is moderately rugged, the altitude of the neighboring Virgin peak being 7,450 feet above sea level.

The climate is typical of the mountainous desert areas of the southwest. Vegetation is sparse.

[illegible]

A report, entitled "Recommendation on Access Road Application, Bureau, Service, Arizona - Black Diamond", and written July 6, 1944, states that a letter from the Metals Reserves Company, dated June 14, 1944, revealed a shipment of 23,450 pounds of manganese ore assaying 31 percent manganese was rejected from the Black Diamond deposit.

So far as is known, the Dixie Silica Sand Corp. of St. George, Utah, first operated the property in 1950. After producing 122,749 long tons of manganese ore the property was abandoned. At some later time the claims were relocated by a group of five men who sold their interest to Charles F. Lowe, Mesquite, Nev.

During March and April of 1950, three shipments were made from the Black Diamond property amounting to 122,749 long tons of manganese, the weighted average of which was 47.6 percent manganese.

The settlement assays are as follows:

	Dry long tons	MgO	Mn	S	Zn	Fe	SiO_2	P_2O_5	As
(a)	45.0911	6.65	28.5	0.100	0.09	5.5	43.93	0.232	0.062
(b)	34.2393	7.35	29.0	0.131	0.12	3.6	38.38	0.174	0.074
(c)	43.3915	2.90	27.6	0.019	0.03	4.7	37.27	0.064	0.081

This ore was shipped to the Columbia-Geneva Steel Division of U. S. Steel Co. at Geneva, Utah.

OWNERSHIP AND TITLE

The property consists of two contiguous unpatented mining claims recorded at Kingman, Ariz. as follows:

Black Diamond, Book 48 of Mines at page 515,

Black Diamond No. 1, Book 48 of Mines at page 516.

The applicant is obligated to pay $40,000.00 for the property, payable by a royalty of 20 percent of the net smelter or mill returns from all ores and minerals extracted. Since the applicant's contract to purchase involves an assignment of a right, it would be necessary to obtain subordination agreements from Charles A. Howe, Mesquite, Nev., and from the Four States Prospecting & Exploration Co., of St. George, Utah, before proceeding with an exploration program.

DESCRIPTION OF DEPOSITS

The deposit is in a brecciated zone in silicified limestone. The mineralization occurs along a fault zone which has a strike of N. 30° E. and dips southeast at about 45°. The manganese oxides occur cementing and partially replacing the brecciated silicified limestone. The zone has a width of from 20 to 70 feet and is exposed in part over

a strike length of 1[illegible] feet where it has been explored by an open cut. The mineralized zone is divided at the north end of the open cut by a horse of barren brecciated limestone. Very little evidence of manganese oxides was found along the extension of the fault zone in either direction from the workings.

[illegible]

There are no measured or indicated ore reserves. Inferred reserves, as shown in the section on Geology, are estimated to be from 3,000 to [illegible] tons of material averaging from 15 to 3[illegible] percent manganese.

[illegible]

The deposit has been explored for approximately 1[illegible] feet along its northerly strike, for a width of 4[illegible] feet, and to a depth of about 4[illegible] feet by an open pit (figure [illegible]). An adit, 3 by 4 in cross-section and 9 feet long was driven into the deposit at the southern end.

There is no mining equipment on the property and no other facilities such as buildings.

[illegible]

The applicant proposed to explore the deposit by removal of the overburden by bulldozing. This was to be followed by core drilling, trenching, and drifting. The project was to be completed in [illegible] days at an estimated cost of $[illegible],[illegible].00, itemized as follows:

1 bulldozer	$1[illegible],000.00
1 engineer	5,400.00
2 jackhammer men	5,400.00
1 compressor	3,000.00

1 Geologist	$ 1,200.00
1 Shovel	2,100.00
2 Dump trucks and drivers	750.00
6 Men - surface workers	10,300.00
1 Foreman - blasting	3,600.00
Explosives	5,000.00
Assaying	1,000.00
Accounting	4,500.00
Miscellaneous supplies	1,000.00
Access Road	2,500.00
Total	$64,450.00

The applicants exploration program is not recommended by the examiners. In order to estimate the economics of the deposit a minimum program consisting of two stages was considered as a more feasible plan. This program is as follows:

Stage I : This stage would consist of trenching the deposit with a bulldozer at right angles to the strike of the vein (figure -) with 5 trenches approximately 50 feet long by 10 feet wide by 10 feet deep, to be spaced at 50-foot intervals along the strike. The trenches were to be sampled at 5-foot intervals along the course of the trench. Approximately 15 days would be required for this work.

Estimate of cost of stage 1

250 feet of trenching at a contract price of $100 per day for bulldozer and operator. Estimated time 10 days ...	$ 1,000.00
Supervision and sampling:	
1 supervisor and 1 helper at $34 per day. Estimated time 15 days	510.00
Consulting geologist (part time)	500.00
Workmens compensation, Social Security, etc., 15%	76.50
Miscellaneous (analytical & accounting)..	413.50
Total	$ 2,500.00

Stage II: This stage would be contingent upon the indications obtained from Stage I. The deposit would be explored for depth extension by churn drilling 5 holes to a depth of 100 feet, each at points to be determined after the trenching operations tentatively shown in figure [illegible].

Estimated cost of Stage II

5 churn drill holes, 100 feet deep at [illegible] per foot (to be contracted), 500 ft. [illegible]	[illegible]
Moving drill [illegible] from one location to another	[illegible]
Supervision and sampling:	
1 supervisor and 1 helper at $34 per day for 15 days	[illegible]
Consulting fees	[illegible]
Workmen's compensation, Social Security, etc.	[illegible]
Miscellaneous (assaying, sample sacks, transportation of samples, etc.)	[illegible]
Mud, a sampler	[illegible]
Total	[illegible]

Cost as estimated by examiners:

Stage I	$2,500.00
Stage II	[illegible]
Total	[illegible]

The estimated cost of [illegible] would have to be paid by Government royalty payments of 5 percent of the net smelter returns. Assuming that mining operations could continue producing sorted ore approximating the weighted average grade of the tons shipped ([illegible] percent manganese), then the economics would be as follows:

Percent manganese (dry basis)	Price per gross ton unit	Value per gross ton ($)
[illegible]	[illegible] f.o.b. railroad cars, shipping point ..... [illegible]	
	1/ gross smelter value ..... [illegible]	
Trucking	[illegible] miles over poor roads at $0.15 per ton mile ..... [illegible]	
	3½ miles on pavement at $0.[illegible] per ton mile ..... [illegible]	
	Total trucking charge ..... [illegible]	
	Smelter sampling charge 2/ ..... [illegible]	
	Total marketing cost ..... [illegible]	
	3/ net smelter value ..... [illegible]	
	Under the assumed royalties (4% net smelter) [illegible]	
	Overall the royalty (5% net smelter) ..... [illegible]	
	Total royalty ..... [illegible]	
	Net to shipper (f.o.b. mine) .... [illegible]	

1/ No payment for the iron content as the weighted average of the 3 shipments was [illegible] iron, well below the low iron minimum set by the steel company.
2/ Based upon the sample charge for the 3 shipments.
3/ There were no penalty deductions on the [illegible].7419 long tons shipped.

The Government's royalty payment of $0.[illegible] per ton divided into the total cost of the proposed project ($[illegible],137.00) gives a [illegible],000 ton of [illegible] percent manganese ore as the tonnage required to be mined and shipped in order to pay for the cost of the project. There are no measured or indicated ore reserves, so this entire tonnage would have to come from inferred ore reserves. From the Geological Report the inferred ore reserves are estimated to be 3,000 to [illegible],000 tons of 15 to 20 percent manganese ore. This tonnage is not adequate to pay for a minimum exploration program.

CONCLUSIONS

Manganese has long been considered one of the United States' most important strategic raw materials. Its indispensability in Steel manufacture makes it vital to the nation's industrial life. Therefore, any domestic deposit should receive adequate attention.

The fact most to be stressed about the Black Diamond Deposit is the unpredictable variability of both ore and gangue. The ore exhibits rapid and marked horizontal and vertical changes in hardness, specific gravity, and grade. Likewise, the gangue is distinctly erratic. The examiners believe that the deposit could be mined by open pit methods, and that by hand sorting, a marketable grade could be produced. Mining the deposit at depths of 40 feet or more below the present surface would have to be done by underground methods.

The applicant stated that he is willing and able to participate to the extent of 25 percent of the cost of the project. Furthermore, the applicant realizes that he must employ a competent engineer or geologist for part time work, not only for the exploration program but also for any mining operation that might develop.

RECOMMENDATIONS

The examiners estimate that $6.14 per dry long ton, net f.o.b. mine, could be realized under the present price schedule at Manaca, Utah, from ore averaging 26.7 percent manganese (the weighted average of the 3 shipments made from the deposit). Careful open-pit mining, sorting, and loading the ore might be accomplished at costs ranging from $3.00 to $4.00 per ton. Mining the deposit at depths of 40 feet

or more below the surface would have to be done by underground methods at much higher costs per ton. The present economics of the deposit indicate that there is a small tonnage that is marginal and that possibly a profit could be realized by the applicant. However, a factor not to be overlooked is that even by hand sorting, the ore could not meet the specifications of the Government stockpile program due to the high silica content. It is not known whether the ore could be concentrated by beneficiation so the silica content could be lowered from 30 percent to the stockpile maximum of 15 percent combined SiO_2 and Al_2O_3.

It is estimated that 21,000 tons of about 24 percent manganese ore would have to be mined and shipped in order to pay for the cost of the minimum exploration program. There are no measured or indicated ore reserves, and C. S. Brownfield of the Geological Survey estimates the inferred ore reserves to be 3,000 to 6,000 tons of 15 to 30 percent manganese ore. It is evident that this deposit does not present a large enough target for an exploration loan.

The marginal economic condition, the small inferred tonnage of 3,000 to 6,000 tons of 15 to 30 percent manganese ore, the high silica content of the deposit, and the remote location combine to suggest that under present conditions the deposit does not merit an exploration loan. The examiners recommend that the application be denied.

FILE COPY 400
SURNAME:

Martin

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

SEP 4 1952

Hon. John J. Dempsey
House of Representatives
Washington, D. C.

My dear Mr. Dempsey:

This is in reply to your letter of August 30, 1952, in which you ask whether a final decision has been reached or a report has been made on Mr. Elbert A. Blakley's Black Diamond Mine, Mohave County, Arizona, our Docket No. DMRA 2538 (Manganese).

This Administration has denied the above application after a thorough review of the available information, as shown by the enclosed copy of our letter to Mr. Blakley.

If we can be of further aid in this matter, please so inform us.

Sincerely yours,

C. O. Mittendorf (for) J.N. 9.4.52

Acting Administrator

Enclosure

WSMartin'lm
9/3/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
W. S. Martin

DEMPSEY
AT LARGE—NEW MEXICO

COMMITTEE:
PUBLIC WORKS

Congress of the United States
House of Representatives
Washington, D. C.

August 30, 1952

Mr. C. O. Mittendorf
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: Docket No. DMEA 2538X - Manganese -- Elbert A. Blakley
Black Diamond Mine, Mohave County, Arizona

Dear Mr. Mittendorf:

Denied 8/28/52. by Divn Before O. C. today 9/3

I would like very much to know if a final decision has been reached or a report made on the above-captioned case.

If you will advise me of its status at your early convenience, it will be appreciated.

Sincerely yours,

John J. Dempsey

JOHN J. DEMPSEY, M. C.

JJD:Mc

SEP 2 1952

FILE COPY 400
SURNAME:

Rutledge
Martin
Melcher

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

Hon. John J. Dempsey
House of Representatives
Washington, D. C.

My dear Mr. Dempsey:

This is in reply to your letter of May 19, 1952, in which you ask to be informed of developments regarding Docket No. DMMA 2538 (Manganese), Elbert A. Blakley, Mohave County, Arizona.

This Administration has denied his application after a thorough review of the available information as shown by the enclosed copy of a letter to Mr. Blakley.

If we can be of further aid in this matter, please so inform us.

Sincerely yours,

Acting Administrator

Enclosure

FARutledge'lm
8/28/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
W. S. Martin
F. A. Rutledge

FILE COPY 400
SURNAME:

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

Rutledge
Martin
Melcher
Lemmon
Hodges
Ellis

SEP 4 1952

Mr. Elbert A. Blakley
P.O. Box 64
Silver City, New Mexico

Re: Docket No. DMEA 2538 - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

Dear Mr. Blakley:

Your application for exploration assistance and other reports concerning your Black Diamond property available to us in Washington have been carefully reviewed.

This information, although noting a small amount of high silica, marginal, manganese ore on your property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret, therefore, to inform you that your application is denied.

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

Sincerely yours,

C. O. Mittendorf (for) JH 9-4-52

Acting Administrator

FARutledge'lm
8/28/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
Operating Committee
W. S. Martin
F. A. Rutledge

FILE COPY 400
SURNAME:

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

Acting Administrator, DMEA

August 28, 1952

Rutledge
Martin
Neuhauser
Lemmon
Hedges

Iron and Ferro-Alloy Division, DMEA

Denial of application for exploration assistance in the amount of $64,450.00
Docket No. DMEA 2538 - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

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

1. An examination by the field team indicated the property has little merit.

2. The field team recommends denial.

3. There is no geologic probability of finding any significant deposit of manganese ore.

4. Inferred reserves are small, low in manganese content, and contain excessive silica. The Dixie Silica Sand Corporation, St. George, Utah, shipped three lots of hand-sorted ore totaling 122.7219 long tons to the Columbia-Geneva Steel Division of the U. S. Steel Corporation in 1950. The ore shipped averaged 27.6 percent Mn and 40.17 percent SiO_2.

   The Dixie Silica Sand Corporation abandoned the claims after three months of operations.

5. The Commodity Division of the U. S. Geological Survey recommends denial.

FARutledge:lm
8/28/52

W. S. Martin, Acting Chief
Iron and Ferro-Alloy Division

cc: Admn. Reading File
Docket
W. S. Martin
F. A. Rutledge

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Acting Administrator, DMEA DATE: August 28, 1952

FROM : Iron and Ferro-Alloy Division, DMEA

SUBJECT: Denial of application for exploration assistance in the amount of $64,450.00
Docket No. DMEA 2538 - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

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

1. An examination by the field team indicated the property has little merit.

2. The field team recommends denial.

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   The Dixie Silica Sand Corporation abandoned the claims after three months of operations.

5. The Commodity Division of the U. S. Geological Survey recommends denial.

W. S. Martin

W. S. Martin, Acting Chief
Iron and Ferro-Alloy Division

IN REPLY REFER TO:

G-MD-CF

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

August 25, 1952

Memorandum

To: George C. Selfridge, DMEA

From: D. M. Lemmon, USGS

Subject: Field report DMEA 2538 - Manganese
Black Diamond Manganese claims
Elbert A. Blakley
Mohave County, Arizona

These claims were examined during the week of June 9, 1952 by C. S. Bromfield of the Geological Survey and R. W. Ageton of the Bureau of Mines. Their report, dated August 1952, recommends denial of an exploration project costing $64,450.

I concur with the recommendation that the application be denied, and also with the recommendation that a proposed alternative program be denied.

Copy retained 400

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

224 New Customhouse
Denver 2, Colorado

August 13, 1952

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2538 (Manganese)
Elbert A. Blakley's Black Diamond Manganese Claims
Mohave County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application which was a request for exploration aid in the amount of $64,450.

The examiners believe that this deposit does not merit an exploration program and they recommend that the loan be denied.

We concur in this recommendation.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
AUG 21 1952

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

Mining Division
Region IV

August 13, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 21 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2538 (Manganese)
Elbert A. Blakley's Black Diamond Manganese Claims
Mohave County, Arizona

Enclosed are nine copies of the engineering report by R. W. Ageton of the Bureau of Mines on DMEA 2538.

The examining engineer believes this deposit does not present a large enough target for an exploration loan and he recommends that the loan be denied.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-25-52
(date)

Mining Division
Date Rec'd.
AUG 11 1952
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

August 7, 1952

Memorandum

To : W. H. King, Denver Colorado

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

Subject : Final Report, DMEA Docket 2538, Elbert A. Blakley's Black Diamond Manganese Claims, Mohave County, Ariz.

Enclosed are original and eight copies of the section on Summary, Conclusions and Recommendations by C. S. Bromfield of the Geological Survey and R. W. Ageton of the Bureau of Mines, and the section on Engineering by Ageton. A separate report on Geology will be submitted by the Geological Survey.

As the deposit contains only a small amount of low-grade inferred ore, with no measurable or indicated reserves, the examiners believe that the proposed loan could not be repaid to the Government, therefore they suggest that the loan be denied. I concur with their recommendations.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC: W. H. King (8)
A. F. Shride
DMEA-2538
DF

wWRStorms:als

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

August 12, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2538, Black Diamond Claims, Mohave County, Arizona. Elbert A. Blakley. Manganese.

Enclosed are the original and 8 copies of the geologic report by C. S. Bromfield of the U. S. Geological Survey covering the above docket.

It has been recommended that the loan be denied.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, University Station
Tucson, Arizona

August 7, 1952

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DMFA 2538, Black Diamond Claims (Elbert A. Blakley), Mohave County, Arizona (Manganese)

Enclosed are the original and 8 copies of the above report by C. S. Bromfield of the Geological Survey.

This report and the recommendation that an exploration loan be denied, because the exploration potential is for a small tonnage of probably non-minable ore, have my approval.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 9

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2538, Elbert A. Blakley's Black Diamond Manganese Claims Mohave County, Ariz.

C. S. Bromfield, Geologist
U. S. Geological Survey

R. W. Ageton, Mining Engineer
U. S. Bureau of Mines

August 1952

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. S. Bromfield[1] and R. W. Ageton[2]

Elbert A. Blakley, P. O. Box 64, Silver City, N. Mex., applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for an exploration loan amounting to $64,450.00 (DMEA-2538). This loan was to be used to remove overburden from his manganese deposit on the Black Diamond and Black Diamond No. 1 claims, to be followed by core drilling in order to determine the limits of the mineralization. The work was to be completed in 180 days. The Black Diamond and the Black Diamond No. 1 claims are located in Mohave County, Ariz., about 20 miles southeast of Mesquite, Nev. The DMEA examiners visited the property during the week of June 9, 1952.

Present information indicates that the Dixie Silica Sand Corp. of St. George, Utah, first operated the property in 1950, shipping 122.7219 long tons of manganese ore in three shipments of a weighted average of 27.6 percent manganese. After about 3 months of operation it abandoned the claims. The deposit was relocated by a group of five men who sold their interest to Charles A. Howe, Mesquite, Nev. Howe later sold his rights to the Four States Prospecting and Exploration Co., St. George, Utah. The applicant is the owner of a contract of assignment from the latter company.

1/ Geologist, U. S. Geological Survey
2/ Mining engineer, U. S. Bureau of Mines

Manganese oxides are exposed in a fault zone in limestone on the Black Diamond claims. The zone strikes N. 30° E. and is partially exposed over a length of 140 feet. It has a width of from 20 to 70 feet. Apparently, the best part of the zone has been explored by shallow workings. Float and limited exposures indicate that the extension of the zone is very low grade. Manganese occurs as psilomelane, pyrolusite, and wad surrounding and replacing silicified altered limestone. Silica content of the ore is high, ranging from 37 to 44 percent. Most of the zone is of too low a grade to be of any interest at present, the whole probably averaging less than 10 percent manganese. Part of the zone is of better grade and it is estimated that to a depth of 50 feet, 3,000 to 6,000 long tons of 15 to 30 percent manganese is the potential of the deposit.

The deposit has been explored approximately 140 feet along its northerly strike and for a width of 40 feet by an open pit to a depth of about 15 feet. An adit, 3 by 4 by 9 feet, was driven into the deposit without encountering any high-grade manganese. There is no mining equipment on the property and no other facilities such as buildings.

Under present price schedules at Geneva, Utah, it is estimated that $6.14 per dry long ton, net f.o.b. mine, could be realized on ore containing 27.6 percent manganese, the weighted average of the 3 shipments. Careful open-pit mining, sorting and loading might be accomplished at costs ranging from $3.00 to $6.00 per ton. Mining the deposit at depths 40 feet or more below the surface would have

to be done by underground methods at a much higher cost per ton. The present economics of the deposit indicate that there is a small tonnage that is marginal and that possibly a profit could be realized by the applicant.

It is estimated that 21,000 tons of about 28 percent manganese ore would have to be mined and shipped in order to pay for the cost of the minimum exploration program. There are no measured reserves or indicated reserves, and it is estimated the inferred ore reserves to a depth of 50 feet are 3,000 to 6,000 tons of 15 percent to 30 percent manganese ore. It is believed that this deposit does not present a large enough target for the exploration program. Until beneficiation tests have been run on material from the deposit, the silica content of about 38 percent precludes shipment to the Government stockpile.

The marginal economic condition, the small inferred tonnage of 3,000 to 6,000 tons of 15 to 30 percent manganese ore, the high silica content of the deposit, and the remote location combine to suggest that under present conditions the deposit does not merit an exploration program. The examiners recommend that the application be denied.

Calvin S. Bromfield
Walter P. Stamm.

A. F. Shride
J. H. Agelton

BLACK DIAMOND CLAIMS
(ELBERT A. BLAKLEY)
MOHAVE COUNTY, ARIZONA
DMEA 2538

MANGANESE

Geology

By
Calvin S. Bromfield
Geologist, U. S. Geological Survey

BLACK DIAMOND CLAIMS
(ELBERT A. BLAKLEY)
MOHAVE COUNTY, ARIZONA
DMEA 2538

MANGANESE

CONTENTS

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Black Diamond Manganese Deposit	1
Ore Reserves	3
Conclusions and Recommendations	4
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ILLUSTRATIONS

Figure 1	Location Map	See Engineering Report
Figure 2	Geologic Sketch Map, Black Diamond Mine, Virgin Mountains Region, Mohave County, Arizona	Following Page 1

INTRODUCTION

The Black Diamond manganese claims are located on the upper slopes of Pakoon Wash in the extreme northwestern corner of Arizona. The Virgin Mountains are close by to the west and the Grand Wash Cliffs are 10 miles to the east. The mine is on an isolated limestone hill which rises 175 to 200 feet above the surrounding area. To the west about one-half mile are prominent cliffs exposing a thick section of westerly dipping Permian red beds overlain by Coconino sandstone which are in turn capped by Kaibab limestone. Immediately to the east are isolated outcrops of buff to red crossbedded sandstones. Farther east a mesa is formed from the beveled edges of the gently dipping Permian red beds, Coconino sandstone, and Kaibab limestone overlain by Quaternary basalt.

BLACK DIAMOND MANGANESE DEPOSIT

Manganese oxides are found in a fault zone in cherty Paleozoic limestone on the Black Diamond claims. The zone strikes N. 30° E. and has a width of 20 to 70 feet. An open cut, two smaller cuts, two short adits, and a trench explore the zone. It is exposed in part over a strike length of 140 feet. At its southwest end, the zone is about 70 feet wide, and along strike abuts barren brecciated limestone. Where exposed by the open cut the zone is split in two by a brecciated limestone horse (Fig. 2). This horse apparently does not extend much beyond the southwesterly limits of the pit (Fig. 2). Northeast, uphill, along the strike projected, and beyond the open cut the surface is covered by rock debris. The continuation of the structure, however, is indicated by a shallow gully or depression of the surface. About 75 feet north of the open cut a shallow trench indicates the zone to

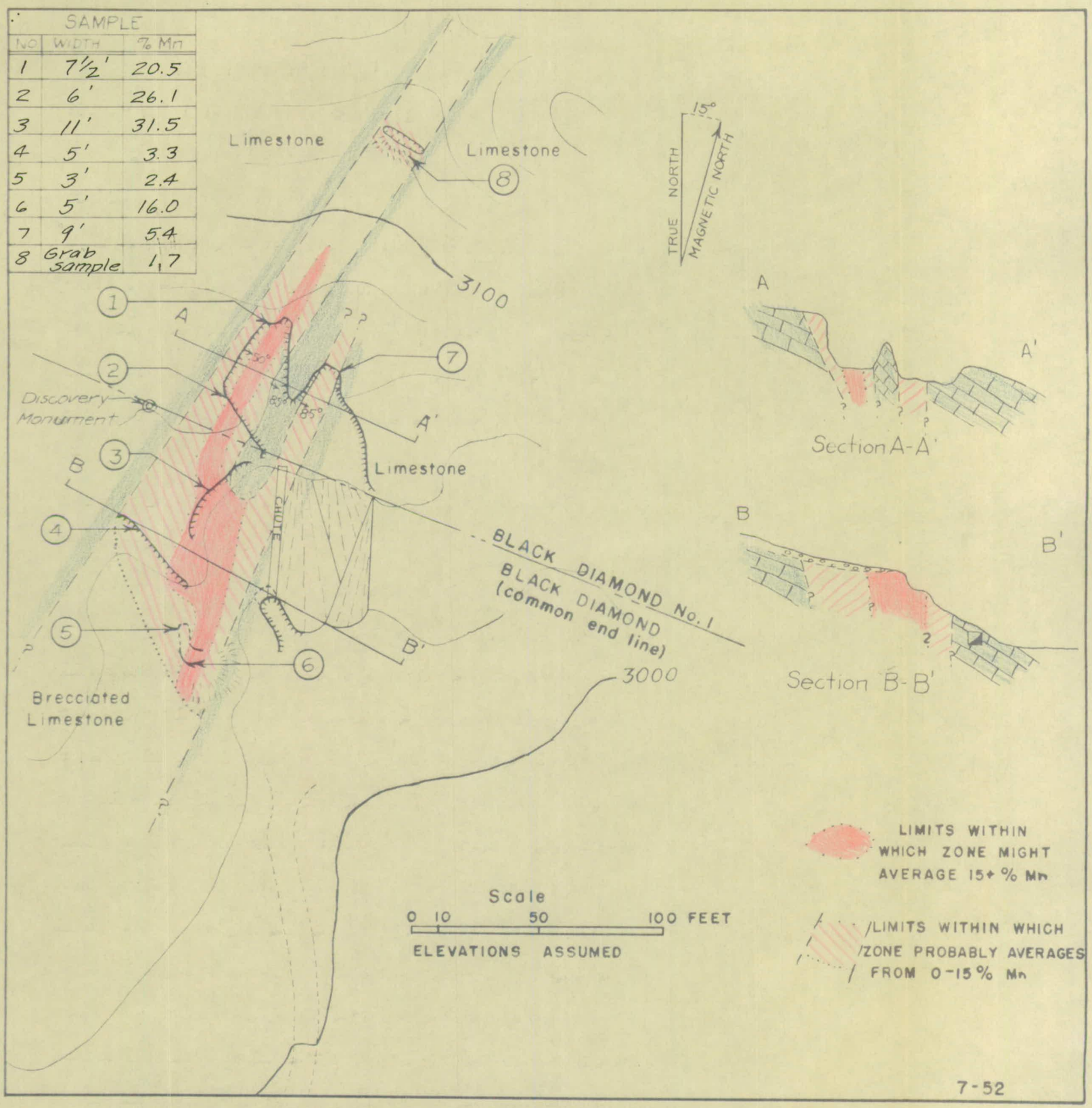

FIG. 2 — GEOLOGIC SKETCH MAP, BLACK DIAMOND MINE, VIRGIN MOUNTAINS REGION MOHAVE CO., ARIZONA

DMEA 2538

have a width of about 20 feet. The zone at this point was very low-grade. A grab sample of the better looking material assayed only 1.7 percent manganese. A saddle is formed where the fault zone crosses the crest of the hill (Fig. 2). At the crestline the zone as indicated by the swale is also about 20 feet wide. Very little evidence of manganese oxides was found along the extension of the fault zone in either direction, and that which was found was low-grade. No high-grade float was observed. Though in large part the structure is covered, indirect evidence is unfavorable and seems to indicate that the most manganiferous part of the zone has been exposed by the present workings.

The depth to which manganese oxides would persist is an unknown factor. There are no other known manganese deposits in the area, and therefore no previous experience to judge by. The fault zone is fairly wide and the breccia very probably was fairly permeable, both of which conditions may favor oxidation and justify some optimism in this regard.

The breccia zone contains manganese oxides in part as psilomelane and pyrolusite, and in part of soft indeterminate oxides best termed "wad." The oxides surround and replace white fragments of silicified and altered limestone which acted as nuclei for manganese deposition. In places the abundance of white breccia fragments makes the manganiferous zone of very low grade.

As exposed, the over-all manganese content of the fault zone would average considerably less than 15 percent manganese. A part of the zone, as indicated on Figure 2, contains a higher proportion

of better grade breccia material and would probably average between 15 and 30 percent manganese. Assays of samples taken by the examining team are shown on Figure 2. Analyses made by the Columbia-Geneva Steel Division of United States Steel Corporation on 3 shipments of ore from this property are attached in the appendix and are undoubtedly a fair indication of the nature of the ore. Silica content is consistently high and ranges from 35 to 44 percent. There are no deleterious amounts of other elements.

As far as is known, total production of the property to date has been 133 tons. The first record of production is of 10 tons of ore averaging 31 percent manganese which was shipped to the Metals Reserve Company in 1944. The lot was rejected. Three cars of manganese ore totaling 123 tons were shipped in 1950 by the Dixie Silica Sand Company to the Columbia-Geneva Steel Division of the United States Steel Corporation at Salt Lake City. The three cars averaged according to settlement sheets, 29, 26.5, and 27.6 percent manganese. The shippers received in payment $13.05, $11.93, and $12.42 per ton on these three cars. The company, the applicant reports, lost money on this venture and thereafter abandoned the property.

ORE RESERVES

The manganese oxide zone is partially exposed over a strike length of 140 feet and has an average width of 50 feet. From this zone it is estimated that 400 to 500 tons of low grade material, probably averaging less than 10 percent manganese, could be mined per vertical foot of depth. Assuming a depth extension of 50 feet the zone might contain 20,000 to 25,000 tons of low grade material. Of this amount

it is estimated 3,000 to 6,000 tons of 15 to 30 percent manganese ore might be recovered.

The writer believes that the widest and best part of the deposit has been exposed and that the extension of the zone in either direction will be very low grade or essentially barren.

CONCLUSIONS AND RECOMMENDATIONS

The potential of the Black Diamond deposit is estimated to be on the order of 3,000 to 6,000 long tons of 15 to 30 percent manganese ore to a projected depth of 50 feet. This tonnage could be obtained only by mining and sorting from a larger tonnage of low-grade (less than 10 percent) material in which it is distributed as lenses or pockets. Evidence from surface exposures, float, and a shallow trench, though not conclusive, indicates that the strike extension of the structure contains only low grade (less than 15 percent) or essentially barren breccia.

In addition to the generally low-grade of the deposit, analyses of the previous shipments show a high silica content of about 35 to 45 percent. Whether it would be possible to beneficiate the ore to meet stockpile specifications, it is not possible for the writer to say. However, Columbia-Geneva Steel at Salt Lake City has purchased the ore in the past. Present value of the selectively mined ore from the Black Diamond claims is approximately $15.00 to $17.00 per ton, purchased by Columbia-Geneva Steel, f.o.b. shipping point. In 1950 previous operators shipped 123 tons to Salt Lake City and received about $13.00 per ton for the ore. According to the applicant these operators lost money on the shipments and abandoned the property.

A further handicap faced by the applicant is a 20 percent royalty on any production from the property. Any loan granted by the Government would raise this royalty to 25 percent. Mining and trucking costs plus the 25 percent royalty would probably make the property uneconomic under present conditions. The applicant, however, though he has had no experience in mining believes that with "efficient" methods he can produce manganese ore at a profit. He is vague about ways and means.

Considering the small potential of the deposit, the low-grade and high silica content of the ore, the deposit would not seem to constitute a significant discovery of manganese ore, and it is doubtful whether operations scaled to this limited potential would be profitable. The writer recommends that the project be denied.

APPENDIX

Analyses of three shipments to the Columbia-Geneva Steel Division of the United States Steel Corporation, March 27, 1950:*

	No. 1 (34.2393 tons)	No. 2 (45 tons)	No. 3 (43.3915 tons)
SiO_2	38.88	43.93	37.27
Al	.84	.68	.23
CaO	.52	1.60	2.56
S	.131	.10	.019
Fe	3.6	5.5	4.7
P	.174	.232	.064
Mn	29.0	26.5	27.6
As	.074	.062	.081
Zn	--	.08	.03

* Data from settlement sheets in possession of Elbert A. Blakley, the applicant.

DMEA-2538, ELBERT A. BLAKLEY'S BLACK DIAMOND MANGANESE CLAIMS MOHAVE COUNTY, ARIZ.

Engineering Report

By R. W. Ageton,
Mining Engineer
U. S. Bureau of Mines

August 1952

DMEA-2538, ELBERT A. BLAKLEY'S BLACK DIAMOND
MANGANESE CLAIMS
MOHAVE COUNTY, ARIZ.

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ILLUSTRATIONS

Figure		Following page
1	Location map	1
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INTRODUCTION

This report describes the results of an examination made in connection with the loan application of Elbert A. Blakely, P. O. Box 64, Silver City, N. Mex., to the Defense Minerals Administration under the Defense Production Act of 1950, as amended. The application was docketed as DMEA-2538. The applicant requested an exploration loan amounting to $64,450.00, which was to be used to remove overburden from his manganese deposit on the Black Diamond and the Black Diamond No. 1 claims, to be followed by core drilling in order to determine the limits of the mineralization. The property was visited by the DMEA examiners during the week of June 9, 1952.

ACKNOWLEDGMENTS

The writer wishes to thank Elbert A. Blakely for his help during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The Black Diamond and the Black Diamond No. 1 claims are on the eastern slopes of the Virgin Mountains about 20 miles southeast of Mesquite, Nev., and approximately 8 miles north of Jacob's Ranch, in an unnamed mining district of Mohave County, Ariz. (figure 1). The area is commonly referred to as the "Strip", since it is a relatively narrow area of the state north of the Colorado River. The claims lie in the section of the "Strip" that is still unsurveyed.

There are two access roads to the mine. The longer of the two (approximately 37 miles long) starts in Nevada at the eastern side of

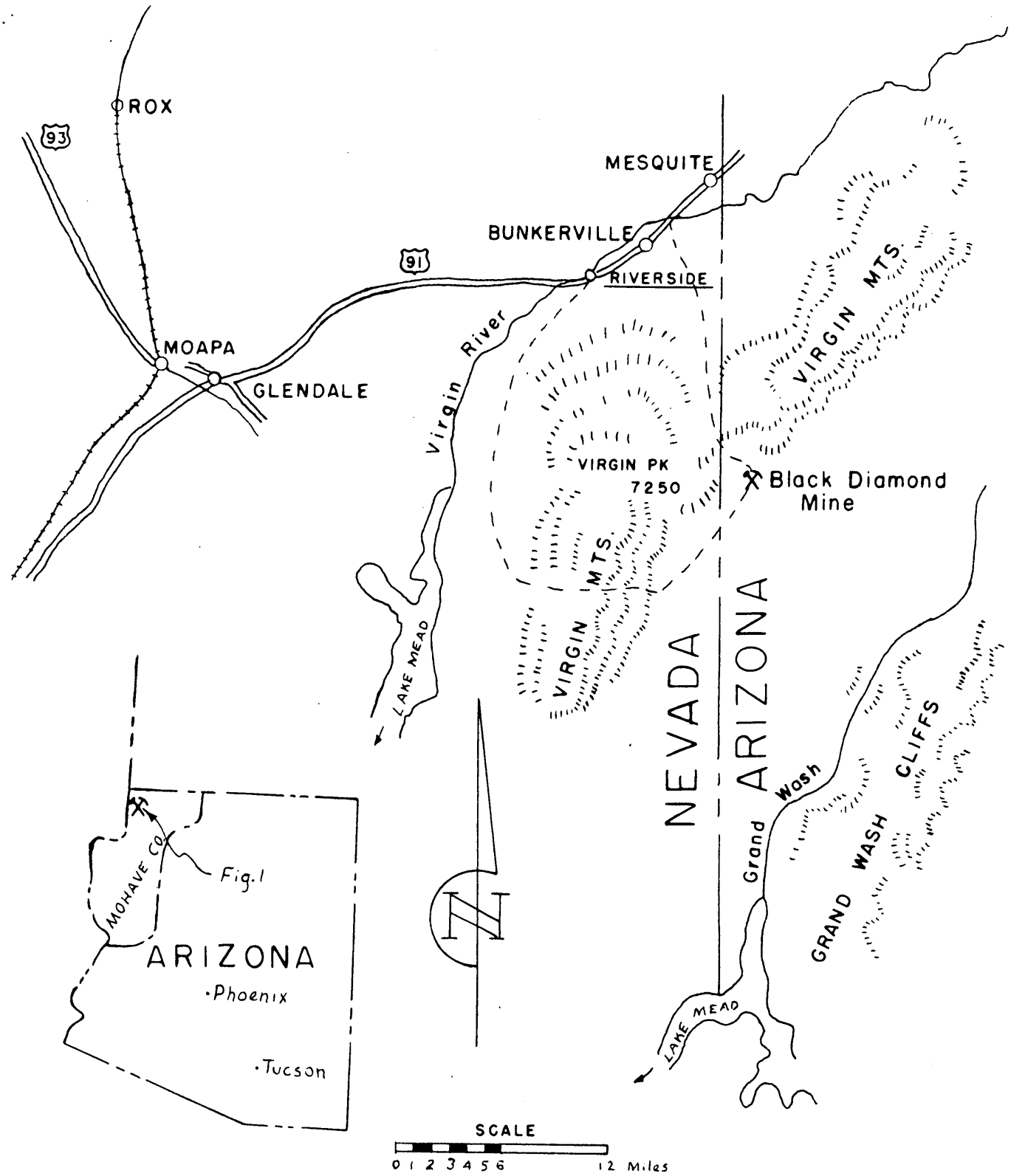

Figure 1—Location Map, Black Diamond Mine
Mohave County, Arizona DMEA 2538

the Virgin River near the town of Riverside, Nev. This road is a good dirt road for about half the distance, then it becomes progressively worse before reaching the property. The other route is about 18 miles long, but it often is impassable, particularly during the rainy seasons.

The topography surrounding the property is moderately rugged, the altitude of the neighboring Virgin Peak being 7,250 feet above sea level.

The climate is typical of the mountainous desert areas of the southwest. Vegetation is sparse.

HISTORY AND PRODUCTION

A report, entitled "Recommendation on Access Road Application, Grazing Service, Arizona - Black Diamond", and written July 6, 1944, states that a letter from the Metals Reserves Company, dated June 14, 1944, revealed a shipment of 23,250 pounds of manganese ore assaying 31 percent manganese was rejected from the Black Diamond deposit.

So far as is known, the Dixie Silica Sand Corp. of St. George, Utah, first operated the property in 1950. After producing 122.7219 long tons of manganese ore the property was abandoned. At some later time the claims were relocated by a group of five men who sold their interest to Charles A. Howe, Mesquite, Nev.

During March and April of 1950, three shipments were made from the Black Diamond property amounting to 122.7219 long tons of manganese, the weighted average of which was 27.6 percent manganese.

The settlement assays are as follows:

	Dry long tons	H_2O	Mn	S	Zn	Fe	SiO_2	Phos	As
(a)	45.0911	6.65	26.5	0.100	0.08	5.5	43.93	0.232	0.062
(b)	34.2393	7.35	29.0	0.131	0.12	3.6	38.88	0.174	0.074
(c)	43.3915	2.90	27.6	0.019	0.03	4.7	37.27	0.064	0.081

This ore was shipped to the Columbia-Geneva Steel Division of U. S. Steel Co. at Geneva, Utah.

OWNERSHIP AND EXTENT

The property consists of two contiguous unpatented mining claims recorded at Kingman, Ariz. as follows:

Black Diamond, Book 4B of Mines at page 515,

Black Diamond No. 1, Book 4B of Mines at page 516.

The applicant is obligated to pay $40,000.00 for the property, payable by a royalty of 20 percent of the net smelter or mill returns from all ores and minerals extracted. Since the applicant's contract to purchase involves an assignment of a right, it would be necessary to obtain subordination agreements from Charles A. Howe, Mesquite, Nev., and from the Four States Prospecting & Exploration Co., of St. George, Utah, before proceeding with an exploration program.

DESCRIPTION OF DEPOSITS

The deposit is in a brecciated zone in silicified limestone. The mineralization occurs along a fault zone which has a strike of N. 30° E. and dips southeast at about 45°. The manganese oxides occur cementing and partially replacing the brecciated silicified limestone. The zone has a width of from 20 to 70 feet and is exposed in part over

a strike length of 140 feet where it has been explored by an open cut. The mineralized zone is divided at the north end of the open cut by a horse of barren brecciated limestone. Very little evidence of manganese oxides was found along the extension of the fault zone in either direction from the workings.

ORE RESERVES

There are no measured or indicated ore reserves. Inferred reserves, as shown in the section on Geology, are estimated to be from 3,000 to 6,000 tons of material averaging from 15 to 30 percent manganese.

PRESENT STATUS

The deposit has been explored for approximately 140 feet along its northerly strike, for a width of 40 feet, and to a depth of about 20 feet by an open pit (figure 2). An adit, 3 by 4 in cross-section and 9 feet long was driven into the deposit at the southern end.

There is no mining equipment on the property and no other facilities such as buildings.

PROPOSED EXPLORATION

The applicant proposed to explore the deposit by removal of the overburden by bulldozing. This was to be followed by core drilling, trenching, and drifting. The project was to be completed in 180 days at an estimated cost of $64,450.00, itemized as follows:

1 Bulldozer	$12,600.00
1 Engineer	5,400.00
2 Jackhammer men	5,400.00
1 Compressor	3,600.00

1 Geologist	$ 1,200.00
1 Shovel	2,100.00
2 Dump trucks and drivers	750.00
6 Men - surface workers	10,800.00
1 Powderman - blasting	3,600.00
Explosives	5,000.00
Assaying	1,000.00
Accounting	4,500.00
Miscellaneous supplies	1,000.00
Access Road	2,500.00
Total	$64,450.00

The applicants exploration program is not recommended by the examiners. In order to estimate the economics of the deposit a minimum program consisting of two stages was considered as a more feasible plan. This program is as follows:

Stage I : This stage would consist of trenching the deposit with a bulldozer at right angles to the strike of the vein (figure 2) with 5 trenches approximately 50 feet long by 10 feet wide by 10 feet deep, to be spaced at 50-foot intervals along the strike. The trenches were to be sampled at 5-foot intervals along the course of the trench. Approximately 15 days would be required for this work.

Estimate of cost of stage 1

250 feet of trenching at a contract price of $100 per day for bulldozer and operator. Estimated time 10 days ...	$ 1,000.00
Supervision and sampling:	
1 supervisor and 1 helper at $34 per day. Estimated time 15 days	510.00
Consulting geologist (part time)	500.00
Workmens compensation, Social Security, etc., 15%	76.50
Miscellaneous (analytical & accounting)..	413.50
Total	$ 2,500.00

Stage II: This stage would be contingent upon the indications obtained from Stage I. The deposit would be explored for depth extension by churn drilling 5 holes to a depth of 100 feet, each at points to be determined after the trenching operations tentatively shown in figure 2.

Estimated cost of Stage II

5 churn drill holes, 100 feet deep at $8 per foot (to be contracted), 500 ft. @ $8	$ 4,000.00
Moving drill rig from one location to another	250.00
Supervision and sampling:	
1 supervisor and 1 helper at $34 per day for 15 days	510.00
Consulting fees	500.00
Workmens compensation, Social Security, etc.	76.50
Miscellaneous (assaying, sample sacks, transportation of samples, etc.)	700.00
Sludge sampler	100.00
Total	$ 6,137.00

Cost as estimated by examiners:

Stage 1	$2,500.00
Stage 2	6,137.00
Total	$8,637.00

This estimated cost of $8,637.00 would have to be paid by Government Royalty payments of 5 percent of the net smelter returns. Assuming that mining operations could continue producing sorted ore approximating the weighted average grade of the tons shipped (27.6 percent manganese), then the economics would be as follows:

Percent Manganese (Dry Basis)	Price per gross ton unit	Value per gross ton (2,240)
27.6	$0.60 f.o.b. railroad cars, shipping point	$16.56
	1/ Gross smelter value	$16.56
Trucking:	20 miles over poor roads at $0.15 per ton mile $3.00	
	35 miles on pavement at $0.12 per ton mile 4.20	
	Total trucking charge.....	$7.20
Smelter sampling charge 2/.....		1.20
	Total marketing cost	8.40
	3/ Net smelter value	$ 8.16
Owner and assignor royalties (20% net smelter)		$1.63
Government's Royalty (5% net smelter)		0.41
	Total royalty	2.04
	Net to shipper (f.o.b. mine)	$ 6.14

1/ No payment for the iron content as the weighted average of the 3 shipments was 4.69% iron, well below the 10% iron minimum set by the steel company.
2/ Based upon the sample charge for the 3 shipments.
3/ There were no penalty deductions on the 122.7219 long tons shipped.

The Government's royalty payment of $0.41 per ton divided into the total cost of the proposed project ($8,637.00) gives 21,066 tons of 27.6 percent manganese ore as the tonnage required to be mined and shipped in order to pay for the cost of the project. There are no measured or indicated ore reserves, so this entire tonnage would have to come from inferred ore reserves. From the Geological Report the inferred ore reserves are estimated to be 3,000 to 6,000 tons of 15 to 30 percent manganese ore. This tonnage is not adequate to pay for a minimum exploration program.

CONCLUSIONS

Manganese has long been considered one of the United States' most important strategic raw materials. Its indispensability in Steel manufacture makes it vital to the nation's industrial life. Therefore, any domestic deposit should receive adequate attention.

The fact most to be stressed about the Black Diamond deposit is the unpredictable variability of both ore and gangue. The ore exhibits rapid and marked horizontal and vertical changes in hardness, specific gravity, and grade. Likewise, the gangue is distinctly erratic. The examiners believe that the deposit could be mined by open pit methods, and that by hand sorting, a marketable grade could be produced. Mining the deposit at depths of 40 feet or more below the present surface would have to be done by underground methods.

The applicant stated that he is willing and able to participate to the extent of 25 percent of the cost of the project. Furthermore, the applicant realizes that he must employ a competent engineer or geologist for part time work, not only for the exploration program but also for any mining operation that might develop.

RECOMMENDATIONS

The examiners estimate that $6.14 per dry long ton, net f.o.b. mine, could be realized under the present price schedule at Geneva, Utah, from ore averaging 26.7 percent manganese (the weighted average of the 3 shipments made from the deposit). Careful open-pit mining, sorting, and loading the ore might be accomplished at costs ranging from $3.00 to $6.00 per ton. Mining the deposit at depths of 40 feet

or more below the surface would have to be done by underground methods at much higher costs per ton. The present economics of the deposit indicate that there is a small tonnage that is marginal and that possibly a profit could be realized by the applicant. However, a factor not to be overlooked is that even by hand sorting, the ore could not meet the specifications of the Government stockpile program due to the high silica content. It is not known whether the ore could be concentrated by beneficiation so the silica content could be lowered from 38 percent to the stockpile maximum of 15 percent combined SiO_2 and Al_2O_3.

It is estimated that 21,000 tons of about 28 percent manganese ore would have to be mined and shipped in order to pay for the cost of the minimum exploration program. There are no measured or indicated ore reserves, and C. S. Bromfield of the Geological Survey estimates the inferred ore reserves to be 3,000 to 6,000 tons of 15 to 30 percent manganese ore. It is evident that this deposit does not present a large enough target for an exploration loan.

The marginal economic condition, the small inferred tonnage of 3,000 to 6,000 tons of 15 to 30 percent manganese ore, the high silica content of the deposit, and the remote location combine to suggest that under present conditions the deposit does not merit an exploration loan. The examiners recommend that the application be denied.

Owner's Consent to Lien form necessary
from: Black Diamond Mine
Ernest Walker
LeRoy Condie
H. D. Abbott
Ellis J. Pickett

Subordination Agreement form necessary
from Four States Prospecting and
Exploration Company

FILE COPY
SURNAME:

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

Selfridge
Lehmann
Wedgeo
K. Johnson

MAY 26 1952

Hon. John J. Dempsey
House of Representatives
Washington, D. C.

Re: Docket No. DMEA 2538X - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

My dear Mr. Dempsey:

This is in reply to your letter of May 19, 1952, in which you ask to be informed of developments regarding Mr. Elbert A. Blakley's application for exploration assistance.

This Administration received his application on May 19 and referred it to Mr. W. H. King for a field examination as shown by the attached copy of a letter to Mr. Blakley.

If we can be of further aid in this matter, please so inform us.

Sincerely yours, cc 5/26

C. O. Mittendorf (for)

Acting Administrator
Defense Minerals Exploration
Administration

Enclosure

GCSelfridge'lm
5/23/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV
G. C. Selfridge

NAME / ADDRESS: Dempsey, Hon. John J.
House of Representatives

263854
CONTROL NUMBER

r4

DATED: 5-19-52

RE

Re: DMPA 2304- Manganese. Hopes expeditious action may be taken on Mr. Blakley's application, and that he will be informed of developments in Mr. Blakley's case.

FILE

PLEASE ACKNOWLEDGE WITHIN DAYS

REFER TO

1. Holderer
2.
3.
4.

DATE 5-20-52

TYPE OF CORRESPONDENCE

REG. MAIL	AIR MAIL	SPEC. DEL.	REG'STD	TEL'GR'M	N. A. R.
X					

CORRESPONDENCE CONTROL RECORD

FWA - E 366

JOHN J. DEMPSEY
AT LARGE—NEW MEXICO

COMMITTEE:
PUBLIC WORKS

Congress of the United States
House of Representatives
Washington, D. C.

May 19, 1952

Application rec'd 3 pm 5/20 in Code 400 - dmen

Mr. George B. Holderer
Chief -- Ferro-Alloys Branch
Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Re: DMPA 2304 - Manganese

Dear Mr. Holderer:

Mr. Elbert A. Blakley, of Silver City, New Mexico, advised me recently that he had forwarded to the Defense Minerals Exploration Administration forms which show a total estimate cost for exploration purposes on his property in the amount of $64,450.00.

I sincerely hope that expeditious action may be taken on Mr. Blakley's application, and that I may be informed of developments in the case at your early convenience.

Sincerely yours,

JOHN J. DEMPSEY, M. C.

JJD:Mc

FILE COPY
SURNAME:

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

Rutledge
Selfridge
Mittendorf
Melcher
Lemmon
Hodges
Adams

MAY 26 1952

Mr. Elbert A. Blakley
P.O. Box 64
Silver City, New Mexico

Re: Docket No. DMEA 2538X - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

Dear Mr. Blakley:

Your application for assistance in exploring the Black Diamond Mine in Mohave County, Arizona, has been reviewed by the Iron and Ferro-Alloy Division of the Defense Minerals Exploration Administration and has been referred to Mr. W. H. King, Executive Officer, DMEA Field Team, Region IV, U. S. Bureau of Mines, 224 New Customhouse Building, Denver 2, Colorado, for a field examination.

The Regional Office will contact you at an early date in regard to the examination. Any assistance that you can render the members of the field team during the examination will be appreciated.

Sincerely yours,

C. O. Mittendorf (for) 5/26

Acting Administrator
Defense Minerals Exploration
Administration

FARutledge:lm
5/22/52

cc: Admn. Reading File
Docket
N. B. Melcher, USBM
M. D. Crittenden, USGS
Field Team Reg. IV (2)
Operating Committee
G. C. Selfridge
F. A. Rutledge

Docket Copy

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

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

Dear Sir:

We attach "Review of Application for Exploration Assistance" on:

Applicant Elbert A. Blakley

Docket No. DMEA 2538

Commodity Manganese

Amount $ 64,050.00

Please expedite consideration of the application with particular reference to the points raised in the attached "Review".

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED:

J. H. Hedges

Member, Bureau of Mines

D. M. Lemmon

Member, Geological Survey

13759

Defense Minerals Administration

Review of Application for Exploration Assistance

Docket No. DMEA-2538

Commodity Manganese

Total Amount $64,450.00

Govt. Participation 75%

1. Name and Address of Applicant Elbert A. Blakley, P.O. Box 64, Silver City, New Mexico.

2. Location of Property Black Diamond and Black Diamond No. 1, unpatented lode claims in Mohave County, Arizona.

3. Mineral or metal Manganese Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery--based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good —

b) Poor —

c) None —

d) Don't know--needs field examination ✓

e) Is there an alternative and favorable project? _____
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? No.
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached? —

Does the lease have sufficient time to run to cover a future productive period? —

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? —

b) MF-202? —

(c) MF-203 —

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Do not Know

b) Equipment and supplies Do not Know
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Do not Know

d) Water (question 13)* Do not Know

e) Power (question 13)* Do not Know

Is a field check needed on any of these points? Yes, all of them.

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* No. He has not had the necessary experience.

Is a field check needed on this point?

10. Exhibit A. (question 21 and 22)*

a) Is the project adequately described? No

If not, are there sufficient data given so that you can describe the project? No If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? No

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes, but Field Team should make ~~If not, what part of it is?~~ concrete proposal after examination.

Is this part a worthwhile exploration project? —

d) Are the cost estimates detailed? No.

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable? —

f) Should more information be requested from applicant? —

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes though not requested.

b) If so, are sufficient data furnished? No If so, attach a draft.

c) Is a field check needed? Yes.

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? —

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? —

c) Is the schedule excessive for the work proposed? —

d) Are the proposed wages and salaries reasonable? —

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data? —

c) Reasonable? —

d) Field check needed? —

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Need book and page number of each recorded location notice. A copy of the assignment of agreement to purchase dated July 18, 1951 by Howe to the Four States Prospecting and Exploration Company is also needed.

The data available to date are ~~is~~ practically nil. It may be necessary for the Field Team to procure practically all of the required information if an exploration contract is warranted.

Reviewed by: F. A. Partridge

Date May 21, 1952

IN REPLY REFER TO:

G-MD-MDC

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

Sent to F.T for inform 5/22

May 21, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 22 1952

Memorandum

To: George C. Selfridge, DMEA

From: Max D. Crittenden

Subject: Elbert A. Blakley
P.O. Box 64
Silver City, New Mexico

DMEA 2538 - Manganese

In February 1952 a development loan application in the amount of $350,000 was received from Elbert A. Blakley who proposed to develop and operate a manganese prospect in northwestern Arizona known as the Black Diamond and Black Diamond No. 1. The property is reported to be 18 miles east of Mesquite, Nevada on the northwest slope of Mt. Bangs. It is now 80 miles to the railroad but a proposed new road will decrease this distance to 35 miles from the mine to Moapa-Glendale. The operator is reported to have shipped 3 cars to Geneva Steel Company in 1950. The average grade of the shipments was 29%, 26.5% and 27.6%.

The Geological Survey has no first-hand information regarding this deposit. A brief abstract of a private report at one time available to the Survey, indicated that the ore occurred at a bed vein intersection in limestone but the average grade was not more than 30% Mn. It was obvious that the proposition did not warrant any such expenditure for development, and the exploration loan has resulted.

The applicant has not specified what sort of exploration he proposes to do except to indicate that he would like to trench, also core drill and drift along the fault zone wherever feasible from a mining standpoint. The manner of this presentation and the lack of specific information or maps of the property suggests that the applicant is not competent or at least is not prepared now to undertake the proposed exploration. This alone is probably adequate basis to reject the proposal but it may save time in the long run to request that the Field Team appraise the geological prospects.

Max D. Crittenden Jr

Copy retained 400
Copy retained 400

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

May 22, 1952

Memorandum for the files

Subject: Docket No. DMEA 2538X - Manganese
Elbert A. Blakley
Black Diamond Mine
Mohave County, Arizona

Blakley has agreed to pay 20 per cent royalty; 10 per cent to original owners and 10 per cent to Four States Prospecting and Exploration Company until purchase price of $40,000 is paid.

Black Diamond Mine owned by Ernest Walker, LeRoy Condie, H. D. Abbott, and Ellis J. Pickett.

Copies of agreement dated July 18, 1951, between above and Charles A. Howe of Mesquite, Nevada, to purchase claims for $20,000.00 in DMPA-2304 file.

No copy of assignment by Charles A. Howe to Four States Prospecting and Exploration Company in either docket.

Copies of agreement dated August 24, 1951, between Four States Prospecting and Exploration Company and Elbert A. Blakley, Silver City, New Mexico, to purchase claims for $40,000, $20,000 to Four States Prospecting and Exploration Company and $20,000 to original owners are also in DMPA-2304 docket.

EXPLORATION

Subject: DMEA-2538
Re: Exploration Loan
May 19, 1952

Mr. Elbert A. Blakley
P. O. Box 64
Silver City, New Mexico

My dear Mr. Blakley:

This will acknowledge receipt of your application dated May 16, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2538 and referred to the Iron and Ferro-Alloys Division.

Kindly refer to DMEA-2538 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams
Administrative Officer

7862

DMEA-2538

Silver City, New Mexico
P. O. Box 64
May 17, 1952

Office of Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

I have on file with the Defense Materials Procurement Agency an application, DMPA-2304, for a direct loan to equip and operate a manganese property in Mohave County, Arizona. The property has not been sufficiently explored to get the metallurgical reports and assay maps necessary for the loan.

On March 7, 1952, Mr. George B. Holderer, Chief, Ferro-Alloys Branch, Defense Materials Procurement Agency, wrote to me enclosing the necessary forms for an exploration loan.

These forms are filled out and enclosed herewith.

Any action to consumate this request will be greatly appreciated.

Yours very truly,

Elbert A. Blakley

Elbert A. Blakley

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 19 1952

EAB/sg

FO[illegible]-103
(Revised [illegible]1951)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.1.

MF-103 Should Be Filed With General Technical Data Form MF-100

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

Not To Be Filled in by Applicant

Docket No. DMEA-2538
Metal or Mineral
Date Received 5-19-52
Amount $
Participation (Government %)

Defense Minerals Administration
RECEIVED
MAY 19 1952

Elbert A. Blakley
P. O. Box 64
Silver City, New Mexico

Name and address of applicant

Date May 16, 1952

If you have already filed MF-100, give date filed January 29, 1952 type of assistance requested Loan,

DMA Docket Number (if available) 2304 - Manganese

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four copies each, of the signed application form, General Technical Data Form MF-100, and answers to questions as specified, to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive office thereof, with your name and address on each sheet of the application and all accompanying papers. If you have previously filed MF-100, it is not necessary to file it again. However, you should indicate in space provided above the type of assistance previously applied for (loans, procurement contracts, etc.) and DMA Docket Number, if available. *When a question is inapplicable it should be so stated in the form.* Additional sheets should be attached in answering any questions or in supplying additional information. IF YOU CANNOT ANSWER A QUESTION, SO STATE.

1. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.

   (*b*) If you are not the owner of the property, submit a copy of the lease, purchase option, or other agreements under which you are authorized to operate the property with each copy of your application.

   (*c*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

   NOTE: (1) If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*c*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

   (2) If applicant is not the owner of the property or if there are any liens or encumbrances against the property, copy of agreements of claimants, lienors, encumbrances, and lessors subordinating their interests in the property to the interest of the Government under the Exploration Project Contract will be required for attachment to the Contract.

2. (*a*) What metals or minerals do you expect to find?

   (*b*) Furnish statement of the geologic features of your property, giving type of ore deposit and reasons for expecting to find commercial ore bodies. Illustrate with maps or sketches. If you have a geologic or engineering report, or assay maps showing width and grade, please send them with application, stating whether or not you wish to have them returned.

The information requested in questions 3, 4, 5, 6, 7, 8, and 9 below should be answered specifically and in detail, as this information will be attached to and incorporated as part of the Exploration Project Contract, if such contract is entered into with you by the Government.

ANSWER EACH QUESTION ON SEPARATE SHEETS OF PAPER AND SUBMIT A COPY OF EACH ANSWER FOR EACH COPY OF YOUR APPLICATION.

3. (*a*) Describe fully the proposed work and give the total cost of the project.

   (*b*) State the time required to start the project and to complete it.

4. Submit a map or sketch of the property involved showing a plan (and cross section, if needed) of the present mine workings and the *location of the proposed exploration work* as related to geologic features, such as contacts, veins, ore-bearing beds, etc.

5. Furnish an itemized list of existing facilities, buildings, installations, and fixtures with a statement of the cost of any necessary rehabilitation or repairs to put into useful and operable condition.

6. Furnish a detailed list of additional facilities, buildings, and fixtures to be purchased, installed, or erected by you, with the estimated cost of each item.

7. Furnish a detailed list of operating equipment, separated into items to be—

   (*a*) Rented

   (*b*) Purchased

   (*c*) Furnished by you

   with the rental, purchase price, or depreciation of each item, as the case may be, to be charged as a cost of the project.

8. Furnish an itemized schedule of labor, by numbers and classes (miners, muckers, etc.) and of supervisors by numbers and positions, with the maximum wages or salaries to be paid to each.

9. Furnish a detailed list with estimated cost of each item for materials, supplies, engineering, assaying, accounting, power, water, utilities, and any other items not provided for above.

10. (*a*) How much are you prepared to invest in the proposed project?

    (*b*) Is this amount sufficient to pay your part of the cost of the project, in accordance with the regulations on Government participation (Sec. 9 of MO–5)?

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

CERTIFICATION

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

(Name of company)	By Ellis a Blakley (Signature of authorized official)
May 16 - 1952 (Date)	Owner (Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—64067-2

Robert A. Blakley
P.O. Box 64
Silver City, New Mexico

Form MF-103

1. A,B,C and Notes 1 and 2 may be answered by a copy of the purchase agreement already on file with the Defense Material Procurement Agency, Washington 25, D. C.

2. a. Manganese.

   b. This statement of geologic features cannot be furnished until further exploration has been accomplished. Reasons for believing a commercial body of ore exist came from the extent of the natural out-croppings from which assays have been taken, copies of which you have in my file. Also, from the fact that three (3) carloads of ore were taken in a very unskilled manner from one point on the property. At this time it is practically impossible to furnish a geological report or assay maps, but will be glad to furnish them when further exploration and assays may warrant.

3. a. The proposed work is to remove overburden; to properly expose the leads now shown in the outcroppings; to trench and drift along the veins or ore for determing their width and depth. Also, the core drilling would afford the information at various points for the depth of ore body. I would like to definitely establish the indications of the continuity and character of the zone and the average width and grade of ore from place to place along the veins. This work can best be accomplished by drifting along the fault zone wherever more feasible from a mining standpoint. The total cost of this project would be $64,450.00 For detailed list see item #9.

   b. Project can be started immediately and can be completed in 180 working days.

4. This information can be furnished when exploration is such that it is available.

5. None.

6. None.

7. a. Investigation has been made with men nearby who have suitable equipment, and in my judgement, it is advisable to operate on a contract rental basis, rather than purchase this equipment. For detailed list see item #9.

Elbert A. Blakley
P. O. Box 64
Silver City, New Mexico

Form MF-103 - page #2

7. b. None.

c. None.

8. See Item # 9.

9. Here is an estimated and itemized cost:

1. Bulldozer	$12,600.00
1. Engineer	5,400.00
2. Jack Hammer men	5,400.00
1. Compressor	3,600.00
1. Geologist	1,200.00
1. Shovel	2,100.00
2. Dump truck & drivers	750.00
6. Men - surface workers	10,800.00
1. Powder man - blasting	3,600.00
Explosives	5,000.00
Assaying	1,000.00
Accounting	4,500.00
Core drilling	5,000.00
Sundry supplies	1,000.00
Road for accessibility at mine	2,500.00
Total	$64,450.00

With the exception of the men listed above all other labor is furnished with the equipment on a contract basis.

10. a. $16,500.00

b. Yes.

11. Any water and utilities that is needed for the work will be furnished by the contractor doing the work.