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

400

224 New Customhouse
Denver 2, Colorado

June 18, 1954

WSM

Memorandum

To: C. O. Mittendorf, Administrator, DMEA
Attention: Code 200

From: DMEA Field Team, Region IV

Subject: Report of Examination - DMEA Docket 3319 (Manganese)
H. E. McCray's Black Eagle Manganese mine, Red Rock
Mining District, Grant County, New Mexico

Enclosed are four copies of the Engineering and Geologic examination on the subject property, a copy of the letter of denial to the applicant, and two copies of Form 3b.

W. H. King
W. H. King

Enclosures

for E. M. Haschmann
A. H. Koschmann

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

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

COPY

224 New Customhouse
Denver 2, Colorado

June 18, 1954

Mr. H. E. McCray
908 South Platinum Street
Deming, New Mexico

Re: DMEA Docket 3319 (Manganese)
H. E. McCray's Black Eagle
Manganese Mine, Red Rock
Mining District, Grant County,
New Mexico

Dear Mr. McCray:

Reference is made to your application for Government assistance to explore your Black Eagle mine for manganese.

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

A careful study of your property and data available to this agency reveals that the probability of disclosing mineable reserves of manganese is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application for exploration aid is denied.

Very truly yours,

/s/ W. H. KING
W. H. King
DMEA Field Team, Reg. IV

/s/ E. N. HARSHMAN
for A. H. KOSCHMANN
DMEA Field Team, Reg. IV

RDB:es
cc: DMEA Docket 3319
Administrator, DMEA
Storms
Koschmann (2)
Chron.
AFShride

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

June 22, 1954.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Report of Examination - DMEA Docket 3319 (Manganese), H. E. McCray's Black Eagle Manganese Mine, Red Rock Mining District, Grant County, New Mexico.

Enclosed are the original and eight copies of the Engineering Report of Examination on the subject docket.

The applicant requested $20,422.65 to explore the Black Eagle and Black Eagle No. 1 claims for manganese by means of 470 feet of combined inclined shaft, drifts, and raises.

The examining team does not believe that the property has enough merit to justify Government participation in an exploration project and recommends denial of the application.

We concur in this recommendation.

W. H. King

W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

June 15, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 3319, Black Eagle and Black Eagle No. 1 Manganese Claims, Grant County, New Mexico

Enclosed are 9 copies of a geologic report by W. R. Jones of the U. S. Geological Survey covering the above docket.

It has been recommended that the application be denied because geologic conditions do not indicate that significant amounts of ore will be discovered by additional exploration.

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

Enclosures (9)

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Box 4126 University Station

Tucson, Arizona

June 10, 1954

Memorandum

To: A. N. Koschmann

From: J. N. Faick

Subject: DMEA 3319, Black Eagle and Black Eagle No. 1 Manganese Claims, Grant County, New Mexico

Enclosed are the original and 8 copies of a report on the field examination of the above property by N. R. Jones. The report recommends denial of the application because geological conditions indicate that significant amounts of ore will not be discovered by additional exploration.

The report has my approval.

John N. Faick
Geologist

JNF:ms

cc. Koschmann (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

June 9, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Report on Docket DMEA-3319, M. E. McCray's Black Eagle Manganese Mine, Red Rock Mining District, Grant County, N. Mex.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by Walter R. Storms of the Bureau of Mines and William K. Jones of the Geological Survey, and the section on Engineering by Storms for the above report. A separate section on Geology will be submitted by the Geological Survey.

As it seemed very doubtful that the proposed exploratory project would discover any significant amount of ore, the examiners have recommended denial of the loan.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. H. King (8)
J. N. Faick
DMEA-3319
DF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-3119, M. E. McCrary's Black Eagle Manganese Mine

Red Mesa Mining District

Grant County, New Mexico

Walter R. Storms, Supervising Mining Engineer
U. S. Bureau of Mines

William R. Jones, Geologist
U. S. Geological Survey

June 1954

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By Walter R. Storms[1] and Wm. R. Jones[2]

On April 9, 1954, H. E. McCray of 908 South Platinum Street, Deming, N. Mex. applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for Governmental assistance to explore the Black Eagle manganese deposit in the Red Rock area of Grant County, N. Mex. by 470 feet of inclined shaft, drifts, and raises. The total proposed costs for this work were to be $20,422.65, the Government furnishing 75 percent of the funds, and the applicant the remaining 25 percent. This application was docketed as DMEA-3319, then was sent to the field for an examination.

On May 25, 1954, Walter R. Storms of the Bureau of Mines, and William R. Jones and Samuel L. Moore of the Geological Survey visited the property, accompanied by H. E. McCray, the applicant.

The Black Eagle manganese deposit (formerly called the Black Jack, and later the Two Pints) is situated about 3 miles by air line or approximately 8 miles by road almost due north of Red Rock, N. Mex. Manganese oxides (psilomelane and pyrolusite) occur in a large brecciated fault zone, which strikes N. 25° W. and dips from 65 to 70 degrees to the west-southwest. Pre-Cambrian granite lies on the footwall of the normal fault, while Cretaceous-Tertiary rhyolites occur on the hanging wall side.

1/ Supervising mining engineer, Bureau of Mines
2/ Geologist, Geological Survey

The deposit first was developed by a deep trench along the outcrop. Later a 30-degree incline was sunk beneath the trenched area and considerable manganese ore produced in a stope above the incline and below the original open cut. At the present time the surface cut is about 180 feet long with a maximum depth of approximately 40 feet. Slightly over 300 tons of manganese ore averaging 20 percent manganese have been produced from the property.

The vein can be traced for at least 400 feet north-northwest of Tank Draw, but to the south-southeast the vein and fault pass beneath the gulch and cannot be traced. Evidently the main fault zone continues to the south because what seems to be this same fault was noted about one-half mile to the south where a shallow shaft had been sunk on a narrow fluorspar vein. At the main deposit the mineralized zone ranges up to 10 feet in width. It seems fairly wide near Tank Draw on the south, but narrows to about 2 feet at the northern end of the workings. The open stope ranges up to 6 feet in width.

A few hundred feet north-northwest of the main mine workings, a large lens of black calcite is exposed along the fault on the surface. This lens is approximately 100 feet in length and up to 10 feet in width. No exploratory work has been done on it, but

it seems doubtful if manganese ore occurs beneath this lens. However, at the main workings black manganiferous calcite occurs at the surface, as well as throughout the underground workings.

The main oreshoot may continue for some distance beneath the present stope, but because of the excessive amount of black calcite present and because white calcite also is present at the end of the incline and below the stope floor, it seems doubtful that the ore persists at depth. It also seems doubtful that enough ore could be discovered to repay the Government's share of the proposed $20,422.65 loan.

Therefore, it is recommended that the application be denied.

BLACK EAGLE AND BLACK EAGLE No. 1
GRANT COUNTY, NEW MEXICO
(MANGANESE)

DMEA 3319

Geology

By
W. R. Jones
Geologist, U.S.Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
6-28-54
(date)

BLACK EAGLE AND BLACK EAGLE No. 1
GRANT COUNTY, NEW MEXICO
(MANGANESE)

DMEA 3319

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Figure 1	Location Map	See Engineering Report
Figure 2	Longitudinal Section	See Engineering Report

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Table 1	Shipments from Black Eagle Mine	On page 2

INTRODUCTION

The Black Eagle manganese deposit, formerly called the Black Jack and also the Toro Pinto, which is located in western Grant County, N. Mex. was examined by W. R. Stearns [1] and W. R. Jones [2] in company with N. E. McCray, lessee and applicant, on May 25, 1954.

LOCATION AND ACCESSIBILITY

The deposit is 4 or 5 airline miles northwest of Redrock, N. Mex., a village on the Gila River. To reach the mine (see Fig. 1), follow the road leading northeast from the Redrock General Store a distance of 1.2 miles, turn left and cross bridge over Gila river, proceed for .2 mile at which point bear right, proceed for 1.1 mile then take left fork and follow ridge road for 5.4 miles to Black Eagle mine. The distance from Redrock is 8 miles, and the distance from the nearest railroad shipping point at Lordsburg, New Mexico is 33 miles.

PRODUCTION AND CHARACTER OF ORE

No records are available on the amount or grade of ore produced during initial trenching of the outcrop, done prior to the lease held by N. E. McCray. From the size of the old workings it is estimated that the original operators produced not more than 100 tons of ore.

Production by McCray is summarized in the following table:

1/ Engineer U.S.Bureau of Mines, Tucson, Arizona

2/ Geologist U.S.Geological Survey, Silver City, New Mexico

Table 1

Shipments by McCray to Deming Depot

Black Eagle mine, New Mexico

Date	Certificate	Long Dry Tons	Percent Manganese	Gross Value	Value per ton
9/15/52	8 M-487	45.66	17.55	$ 486.28	$10.65
9/24/52	"	17.39	22.6	327.80	18.85
11/ 3/52		25.75	23.55	643.49	24.99
11/20/52	"	11.87	21.6	249.98	21.06
11/10/53	8 M-585	55.33	22.1	1,165.25	21.06
3/17/53		124.20	18.6	1,922.62	15.48
	Totals	280.20 tons		$4,795.42	$17.11

The ore has been tested by the U.S. Bureau of Mines and by the American Smelting and Refining Company and evidently is amenable to concentration by jig or flotation methods. The ore shipped has not been penalized for deleterious material.

MINE WORKINGS

As may be seen in Fig. 2, a longitudinal section, the vein has been explored over a strike length of 160 feet at the surface and to a maximum depth of about 50 feet. The deposit was explored by an incline, a drift about 35 feet below the surface and by 3 short raises. About 10 feet back from the face of the incline a short raise connects with the 35-foot level. Two raises 60 feet apart extend from the 35-foot level to the floor of the longitudinal trench dug by the original operators along the outcrop of the vein. About two-thirds of

the vein zone bounded by the two raises and the 35-foot level has been stoped. The ore was dropped through the short raise to the incline and pulled up the incline with a slusher. The stoped area is from 6-10 feet thick, but not all the ore mined was ore of commercial grade. The footwall of the deposit is well defined by a fault surface dipping about 70 degrees southwest, but the hanging wall of the deposit is not clearly defined and appears to be determined more by assay than by a definite structure comparable to that which delineates the footwall.

GEOLOGY

The Black Eagle Manganese deposit occurs in a wide brecciated fault zone between coarse granite on the northeast and volcanic rocks on the southwest. The fault strikes about N. 25° W., dips about 65 degrees southwest, and is normal. The fault zone is a regional feature and extends for at least 1/2 mile southeast, and to the northwest extends beyond the mine area. About 1/2 mile southeast of the mine the fault zone is exposed in a shallow prospect pit. At this pit Gila sediments, which are Pliocene or Pleistocene, are faulted down against the granitic country rock; the age of the fault is therefore post-Gila. The fault breccia exposed in the pit contains fluorite but no manganese. At other places along the fault it is mineralized with manganiferous black calcite and white calcite, both of which are younger than the fault. Manganese oxides, which are the ore minerals, are probably a product of weathering of the manganiferous calcite.

A few hundred feet northwest of the Black Eagle mine is a particularly significant exposure of the fault zone; here it has been impregnated thoroughly by black calcite. This body of calcite is about

100 feet long and as much as 10 feet wide. In detail, its boundaries are most irregular; reniform veinlets extend into the footwall granite and into the hanging wall volcanic rocks, which, here and at the mine, are highly altered rhyolitic and latitic tuffs, which possibly are welded tuffs, and flows. As this exposure of manganiferous calcite is largely in the bed of a gully along which there is intermittent flow, little of the manganese oxide produced by weathering is allowed to accumulate, and no mining has been attempted here.

neologismo? Geo says the word is used for tuffs when the fragments become hard like a welded aggregate

The Black Eagle deposit resembles this exposure of black calcite in size and form and was, before oxidation, a lenticular mass of manganiferous calcite. Manganese oxides fill joints, and form small replacement pods between limonitic gouge-lined slips within the mass of calcite; and similar material extends into the altered and brecciated volcanic rocks of the hanging wall.

ORE RESERVES

A few tons of manganese ore could be produced from the existing workings, but it would be foolhardy to infer additional ore beyond the present headings, especially the deepest workings. Experience with manganese deposits of this type reveals that the secondarily enriched ore, which may be of commercial grade, usually forms near the surface and is confined to relatively shallow depths. As geological conditions indicate that mineable ore is probably restricted to the zone of oxidation, and as outcrops do not indicate the presence of additional ore shoots, it is believed that the ore reserves are too small to be significant. Possibly a few tens of tons of indicated ore, and a similar amount of inferred ore may be present in the deposit.

PROPOSED EXPLORATION

In his application for aid in an exploration project, Mr. McCray outlines the proposed work as follows: continue the incline about 95 feet and drift both directions along the vein for a total strike length of 198 feet. This level would be 50 feet vertically below the 35-foot level as shown on the longitudinal section, fig.2. From the new level two or three raises would connect to the 35 level, thus blocking out the ore and providing ventilation. Unless the incline was driven outside the ore body, it would appear that considerable vein material would have to be left in pillars above and below the incline, which McCray intends to be the main haulageway.

SUMMARY AND CONCLUSIONS

The Black Eagle manganese mine contains small pod-like bodies and veinlets of manganese oxides in a lenticular mass of coarse black and white calcite. The deposit lies in the brecciated hanging wall of a geologically young northwesterly-trending normal fault of regional extent and which has considerable throw. The manganese ore zone is about 160 feet long, 10 feet wide and has been explored to a depth of about 50 feet. The relatively small volume of manganiferous calcite, from which the commercial grade manganese ore was derived by weathering, and the incompleteness of its decomposition, even close to the surface, argues against the existence of significant tonnages of recoverable manganese in this deposit. The small size of the deposit, and the relatively small amount of recoverable manganese, does not warrant the risks involved in exploration.

RECOMMENDATIONS

It is recommended that the application for aid in exploring the Black Eagle mine be denied because geological conditions do not indicate that exploration of the deposit will result in discovery of significant amounts of manganese ore.

DMEA-3319, H. E. McCRAY'S BLACK EAGLE MANGANESE MINE
RED ROCK MINING DISTRICT
GRANT COUNTY, NEW MEXICO

Engineering Report

By Walter R. Storms
Supervising Mining Engineer
U. S. Bureau of Mines

June 1954

DMEA-3319, H. E. McCRAY'S BLACK EAGLE MANGANESE MINE
RED ROCK MINING DISTRICT
GRANT COUNTY, NEW MEXICO

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INTRODUCTION

In April 1954, M. E. McCray applied to the Defense Minerals Exploration Administration under the Defense Production Act of 1950, as amended, for Governmental assistance to explore his leased Black Eagle manganese deposit about 5 miles north of Red Rock, Grant County, N. Mex. The application, which was for a total sum of $20,422.65, was docketed as DMEA-3319.

On March 25, 1954, Walter R. Storms of the Bureau of Mines, and William R. Jones and Samuel L. Moore of the Geological Survey visited the property with the applicant.

LOCATION, TOPOGRAPHY AND CLIMATE

The Black Eagle manganese deposit is situated about 5 air miles north of Red Rock in southwestern Grant County, N. Mex., in sec. 6 or 7, T. 18 S., R. 18 W. (figure 1). It may be reached by automobile by traveling northwestward from Lordsburg on paved U. S. Highway 70 for about 4 miles to State Highway 188, thence northward on this graded road to the village of Red Rock. From the Red Rock general store, the road goes northeasterly, then north for 1.2 miles to the bridge across the Gila River, thence 0.2 mile northerly to a road fork, thence 1.1 miles northeasterly on the main road past the Martin ranch, thence 5.4 miles to the north on a narrow truck trail that follows the ridges between Red Rock Creek on the west and Ash Creek on the

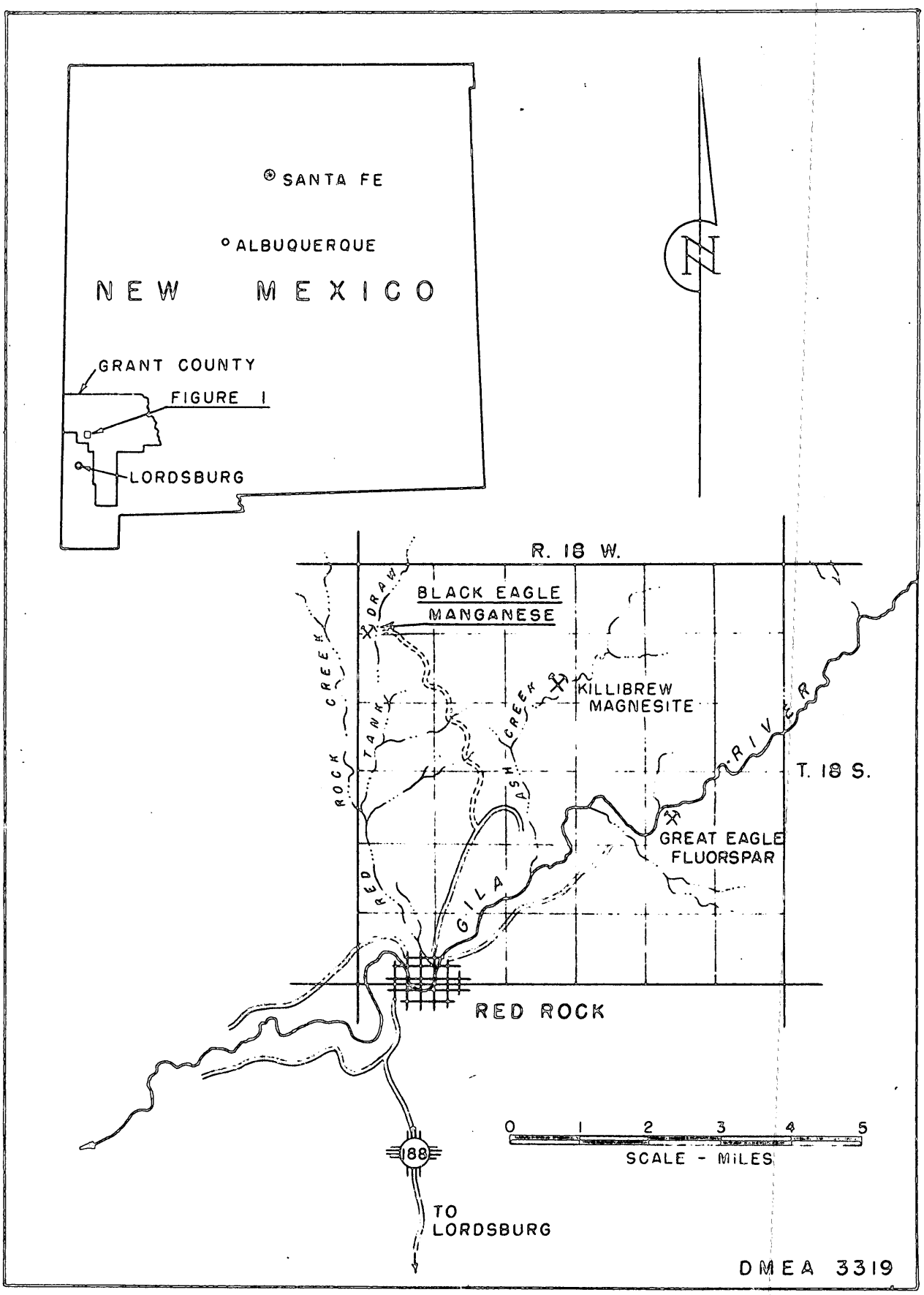

FIGURE 1. — LOCATION MAP
BLACK EAGLE MANGANESE MINE GRANT COUNTY, NEW MEXICO

east. The deposit lies immediately north of Tank Draw, a dry tributary of Red Rock Creek, and about three-quarters of a mile N. 58° E. from Red Rock, the landmark where the village obtained its name.

The locality in the vicinity of the mine is hilly although not rugged. The road from the Gila River is crooked and has many steep grades although it may be traveled easily by truck or passenger car. The usual desert vegetation of southern New Mexico occurs with a few scattered trees along the dry water courses.

The altitude of the property probably is about 4,600 feet. No permanent stream is nearer than the Gila River, some 5 miles to the south. The climate is typical of southern New Mexico arid regions with hot summers and mild winters. Annual precipitation averages about 9 inches, with heavy rains during late July and August, and some snow during the winter months.

HISTORY AND PRODUCTION

The manganese deposit originally was located in 1942 by J. M. Harper and Sherman Harper of Lordsburg, N. Mex.[1/] Two lode claims were located along the vein, the Black Jack Nos. 1 and 2. In the spring of 1942, the Harpers leased the claims to Reiland and Blevins of Las Cruces, N. Mex. These men worked the deposit about a month and shipped one car of ore (36 tons), averaging 24.9 percent manganese.

1/ Neuschel, Sherman K., A Memorandum Report on the Black Jack Manganese Group, Grant County, N. Mex., U. S. Geological Survey, April 1943.

The ore was trucked to Lordsburg, a distance of about 30 miles, then shipped via Southern Pacific Railroad to the Government stockpile at Deming, N. Mex. Neuschel reported that no one was working the property when he visited it in April 1943.

In August 1949, J. H. Soule'[2/] of the Bureau of Mines visited the deposit. At that time it was called the Toro Pinto and was owned by Glenn Hood of Tyrone, N. Mex., and Pat Ganer and R. J. McCann of Silver City, N. Mex. Evidently the Harpers had let their claim locations lapse and the property had been relocated. No known production took place during that period.

On April 1, 1953, H. E. McCray of Deming, Roy Henry of Silver City, N. Mex. and John Wright leased the property from Sherman Harper and Olga Harper. Evidently Sherman Harper had relocated the claims sometime after 1949, having relocated two claims, the Black Eagle and Black Eagle No. 1. H. E. McCray applied to the Defense Minerals Exploration Administration on April 9, 1954 for Governmental assistance to explore the deposit.

Total known production is as follows:

2/ Soule', John H., Toro Pinto, Summary Report of Minerals Examination - Soule' No. 45, Bureau of Mines, 1949.

Date	Long Dry Tons	Manganese percent	Gross value
1942	36	24.9	$358.56
9-15-52	45.66	17.55	486.28
9-24-52	17.39	22.6	327.80
11-3-52	25.75	23.55	643.49
11-20-52	11.87	21.6	249.98
11-10-53	55.33	22.1	1,165.25
3-17-54	124.20	18.6	1,922.62
Total	316.20	20.51	$5,153.98

On May 25, 1954, when the BMEA examiners visited the property no work was being done.

PROPERTY AND OWNERSHIP

At the present time, two unpatented lode claims, the Black Eagle and the Black Eagle No. 1, cover the manganese deposit. These claims are owned by Sherman Harper and Olga Harper of Lordsburg, N. Mex. On April 1, 1953, the Harpers leased the property to H. K. McCray of Deming, N. Mex., Ray Henry of Silver City, N. Mex. and John Wright. Evidently Henry and Wright later assigned their part of the lease to McCray.

DESCRIPTION OF DEPOSIT

Neuschel[3/] visited the deposit in 1942 and described it as follows:

"The ore occurs in a well defined vein striking N. 25° W. and dipping 70° SW. The vein appears to be in granite but lies very close to the contact between Pre-Cambrian granites on the east and

3/ Previously cited in footnote 1.

Cretaceous-Tertiary rhyolites on the west. The vein can be traced on the surface by conspicuous calcite outcrop for 400 feet to the north of the trench. The average width along this distance is 4 feet. To the south of the workings there are no exposures of the vein either in the stream bed of Tank Draw or to the east of the stream. The vein material is predominately massive crystalline black calcite with some vug fillings of white calcite. Psilomelane and pyrolusite occur as irregular narrow shoots and small bunches scattered through the calcite. Manganese oxide is found in a one-foot wide band along the hanging wall in the open pit. The average sorting ratio of black calcite to ore exposed in all the workings is judged to be 5 to 1. Even the cleanest sorted ore is very high in $CaCO_3$. A grab sample taken by the writer from a small pile of clean sorted ore assayed 29.9% manganese."

At the present time the deposit has been more fully developed, but the above description still seems appropriate. Much black calcite still is found in all parts of the workings and some white calcite also occurs, especially at the bottom of the incline (figure 2).

Three channel samples were taken by the BMEA examiners. These locations are shown on figure 2. Most of the stope floor was covered with loose muck so it could not be sampled thoroughly.

These three samples were as follows (see figure 2):

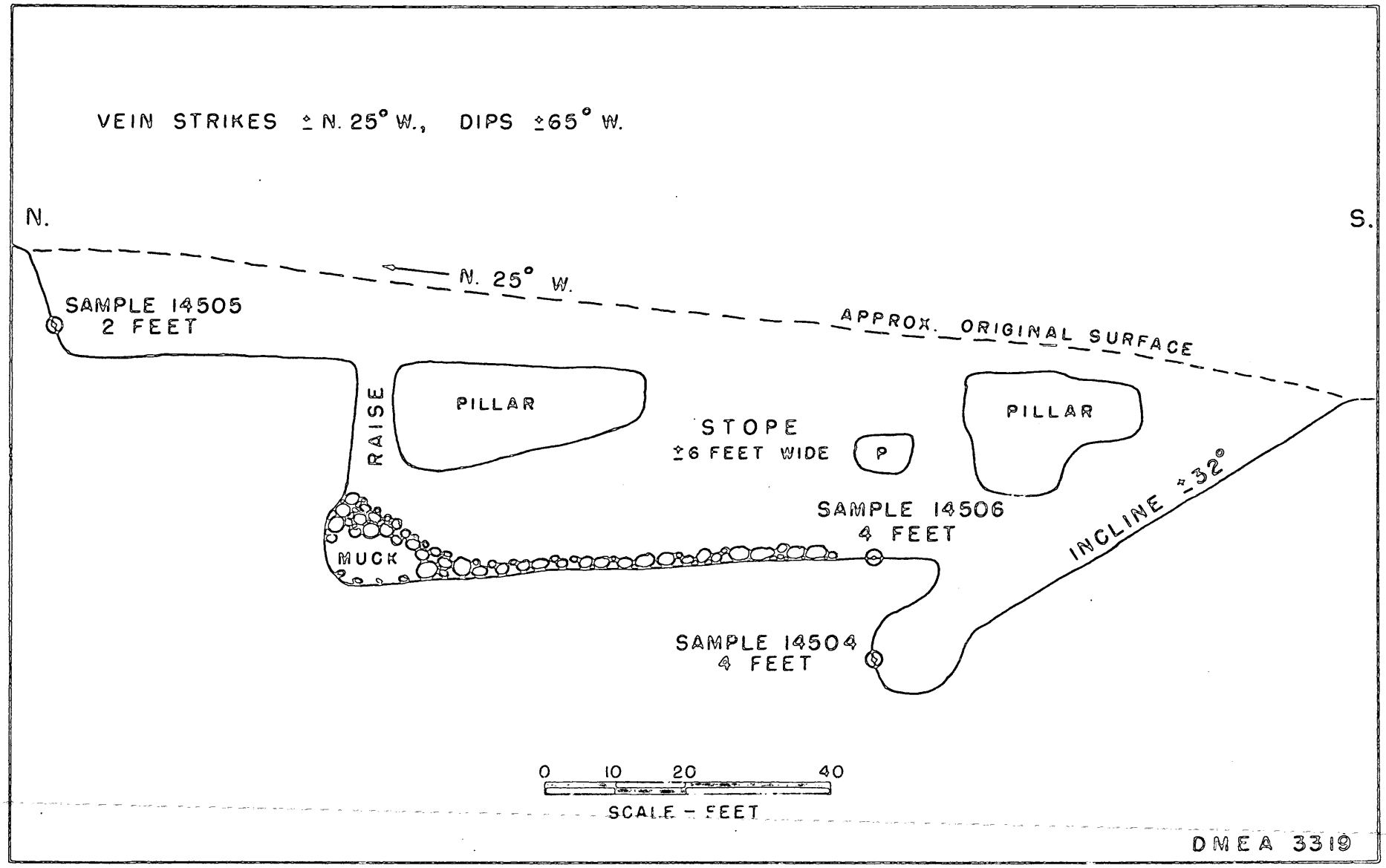

FIGURE 2. — LONGITUDINAL SECTION ON VEIN

BLACK EAGLE MANGANESE MINE GRANT COUNTY, NEW MEXICO

Sample No.	Description	Manganese, percent
14504	4-ft. cut across bottom of incline	8.14
14505	2-ft. cut at north end of open cut near surface	7.24
14506	4-ft. cut across stope floor.	5.93

ORE RESERVES

No measured ore can be estimated in the Black Eagle mine. A few tens of tons of ore might be indicated and a similar amount inferred.

PRESENT STATUS

On May 25, 1954, the mine was closed and probably had been closed for several months. A Caterpillar 35 tractor with a front end loader, a 1½-ton truck containing a water tank (McCray had hauled water 4.5 miles for mine use while he operated the property), a 110-cfm. Worthington compressor powered by a 137-hp. General Motors Diesel engine, and a small slusher or scraper were the only equipment at the mine. Three tent houses, which had been used to house mine employees, still were standing.

As shown on figure 2, the principal oreshoot had been developed originally by an open cut along the fault zone into the hillside for some 180 feet. Later, a small amount of ore had been mined by an underhand stope below the open cut level. McCray started an incline as shown on figure 2 from near Tank Draw at the southern end of the deposit and drove it some 76 feet at a 32 degree inclination down the ore body. When he encountered low-grade vein material with a large amount of white calcite, he stopped the incline and stoped ore above it and to the northwest. A raise was driven up to the

open cut, as shown on figure 2, near the northern end of the cut. Ore from the stope was dropped into the incline and scraped up this incline to the surface. McCray hand-sorted all material and shipped 280.2 long dry tons of ore to the Deming depot of the General Services Administration that averaged 19.95 percent manganese. Gross receipts from these shipments were $4,795.42, or $17.11 per ton.

PROPOSED EXPLORATION

The applicant's proposed exploration program is as follows: "Propose to sink the incline, as shown in red on attached map, level off and drift both north and south. The raises as shown is for air, it has been our experience that the workings are very hot for some reason and ventalation is necessary, this condition will also delay operation considerably which makes it difficult to determin deffnontly the time element. The workings would be on the strike of the vein and would be the quickest method for developing possible ore. All proposed work is shown in red on the map."

Total costs as given by the applicant are:

Labor, etc.	$10,050.00
Operating materials and supplies	2,575.90
Operating equipment (rentals)	4,000.00
Miscellaneous (repairs, taxes, assaying, and accounting)	2,849.24
Contingencies, 10%	1,947.51
Total	$20,422.65 4/

4/ Applicant made an error in addition as the sum of these 5 items is $21,422.65, not $20,422.65.

For this total amount, the applicant proposed to drive 470 feet of incline, drifts and raises for $43.45 per foot. Total time to complete the project was estimated at 125 work days or 5 months.

Applicant's costs seem reasonable although the inclined shaft probably would cost over $43.45 per foot, while the drifts and raises should cost less. The inclined shaft and drifts probably would come under the heading of "exploration", but it seems doubtful if all of the raises could be so classified. Actually, the applicant proposed to sink the incline 100 feet, drift 198 feet from the bottom and 45 feet on the 35 level, then drive 127 feet in three raises (50, 35 and 42 feet) from the bottom level to the 35 level.

CONCLUSIONS

Although approximately 300 tons of manganese ore have been produced from the Black Eagle mine, because of the large amount of black manganiferous calcite on the surface and scattered throughout the ore body, and the white calcite at the lower end of the incline, it seems very doubtful if any significant quantity of manganese ore would be discovered by the proposed exploratory work. The present oreshoot might extend fr another 50 feet at depth, but this seems doubtful; and if it did extend to the 85-foot level, it seems doubtful if enough ore could be developed to repay the Government's share of the loan, or $15,316.99.

15,317.20
$30,634.40

RECOMMENDATIONS

It is recommended that Governmental exploration assistance for the total amount of $20,422.65 be denied the applicant.