224 New Customhouse
Denver 2, Colorado

August 20, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration, Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 1368X, Norway Lode Manganese Company, Summit County, Colorado

Enclosed are the original and three copies of the final report on DMEA 1368X, the original and one copy of Form 3b, and a copy of the letter of denial to the applicant.

for John T. Shaw
H. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

HMC:jp
cc Subject
Chron
AHKoschmann (2)

Mining Division
Region IV

August 20, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 1368X, Norway Lode Manganese Company, Summit County, Colorado

Enclosed are eight copies of the final report on DMEA 1368X by C.M. Harrer of the Bureau of Mines.

The examining engineer concludes that the manganese outcrops probably represent a gossan cap over a small underlying sulfide deposit and recommends that the exploration assistance be denied.

We concur in this recommendation.

for John F. Shaw
W. H. King

Enclosures

HMC
HMC:jp
cc Subject
Chron
AHKoschmann (2)

224 New Customhouse
Denver 2, Colorado

August 20, 1952

Norway Lode Manganese Company
c/o Mr. Max Dercum
Dillon, Colorado

Dear Mr. Dercum:

Reference is made to your application for Government aid in exploration work on the Norway Lode Manganese Claims.

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 by your proposed exploration program is not considered sufficiently promising to justify Government participation. Under these circumstances, we regret to advise you that your application for Government aid is denied.

Very truly yours,

for John F. Shaw

W. H. King
Field Team, Region IV

HMC:jp
cc Actg. Administrator DMEA
WMTraver
Subject
Chron
AHKoschmann (2)

A. H. Koschmann

A. H. Koschmann
Field Team, Region IV

DMEA Form 3b
(Revised)

DEFENSE MINERALS EXPLORATION ADMINISTRATION

CONTROLLED DOCUMENT
Revised Abstract

DMEA Docket No. 1363X

Name of Applicant Norway Lode Manganese Co.

Change:	From		To	
	III 1	☐	III 1	☐
	III 2	☐	III 2	☒ 8-20-52
	III 3	☐	III 3	☐
	III 4	☒	III 4	☐
	III 5	☐	III 5	☐

Add:

II 7 $ 1500

II 8 $ None

II 8a %

Remarks:

Initials of person preparing sheet HMC

Date sheet prepared 8-20-52

17367

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado

August 6, 1952

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 136X (Manganese), Norway Lode Manganese Company, Grand County, Colorado

Enclosed find original and eight copies of the "Summary, Conclusions, and Recommendations", by C. M. Harper and D. H. Maclaren, and of Harper's engineering report on the above project.

Harper, in his unnecessarily exhaustive engineering report, concludes from exposure and structural relationships which are not encouraging that the manganese outcrops probably represent a gossan capping over a small underlying sulfide deposit. Reserves are too small and low grade to be of economic importance and the loan requested is insufficient to explore the ore body properly. He recommends denial and I concur.

W. M. Traver, Jr.

W. M. Traver, Jr.

Enclosures

WMT/bam

cc: 6
DMEA 136X
DMEA Chron.

Extra copies

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA 1368X, Norway Lode Manganese Company

Summit County, Colorado

Manganese

C. M. Harrer, Mining Engineer
Bureau of Mines

D. R. MacLaren, Geologist
U. S. Geological Survey

August 5, 1952

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

D. R. Mackey
Geologist
U. S. Geological Survey

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and D. R. MacLaren

Max Dercum, manager of Norway Lode Manganese Company, of Dillon, Colo., applied for a Defense Minerals Exploration Administration loan to explore for manganese on the Norway claims 1 to 4, inclusive. He proposed to construct about 2 miles of access trail for jeep and bulldozer entry, and trench the surface over the deposits with the bulldozer at various locations, at a total cost of $1,500.00, Government participation 75 percent.

The company has, since the examination, combined the Norway claims with other property near Montezuma, Colo., and incorporated under the laws of Colorado as the Chihuahua Mining and Milling Company.

Oxides of manganese and iron occur as lens-like bodies in fissure and shear zones in pre-Pennsylvanian sediments. The presence of zinc in the assays suggests the possibility of shallow zinc sulfides which implies a very limited vertical range of manganese-iron oxides in shallow, leached outcrops.

Meager exposures and the structural relationships on the Norway Lode Manganese claims are not encouraging for the development of important manganese reserves, and analyses of the ore indicate low-grade material. Contaminants, particularly zinc, make the ore unacceptable

metallurgically. Inaccessibility of the deposits and curtailed operating season would interfere with production. Lack of concentration facilities, distance from potential markets, and very high costs make this an unattractive venture.

Reserves based on geologic inference probably would not exceed 9,000 tons with an assay from the average of two samples by the applicant and two samples by the examining team of:

Percent											
Mn	Fe	SiO_2	Al_2O_3	P	CaO	MgO	BaO	S	Zn	Pb	Cu
24.2	23.7	8.9	1.30	0.03	1.10	1.62	0.09	0.07	2.29	<.10	<.05

< less than

A program of diamond drilling or shaft sinking to gain the information necessary for a complete appraisal of the property will cost considerably more than the applicant was prepared to invest at the time of the examination.

The application for an exploration loan of $1,500.00, docket DMA 1368X, by Max Dercum to explore the Norway Lode Manganese claims is recommended for denial.

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

Engineering Report

By C. M. BAXTER
Mining Engineer
Bureau of Mines

DNA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

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ILLUSTRATIONS

Figure — Follows Page

1. Location map, Norway Lode Manganese Company, Summit County, Colorado..... 2
2. Claim map, Norway claims, Summit County, Colorado..... *

* See figure following Geologic Report.

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

Max Derouo, a partner in the Norway Lode Manganese Company, of Breckenridge, Colo., applied in the fall of 1951 for a Defense Minerals Administration loan of $1,500.00 to explore the manganese possibilities of the unpatented Norway claims 1 to 4, inclusive, by bulldozing through an access trail and trenching the surface over the deposits in various locations. The property now forms part of the newly incorporated Chihuahua Mining and Milling Company, of Montezuma, Colo., with the same and additional officers.

Field examination of surface exposures on all four claims was made July 1, 1952, by an examining team of the Defense Minerals Exploration Administration.

ACKNOWLEDGMENTS

Max Derouo and R. F. Mackie accompanied the examining team as guides and furnished all information available on the property. Publications and maps of the U. S. Geological Survey, by G. D. Singewald, were referred to for general geological information on the area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Norway Lode Manganese claims 1 to 4, inclusive, are in sec. 26, T. 7 S., R. 78 W., 6th P. M., Pollock Mining District, Summit County, Colo. (fig. 1), at altitudes ranging between 11,500 and 12,000 feet above sea level. The property lies across a rugged ridge between McCullough and Spruce gulches. At present there is no road or trail in to the property. Nearest access is from Breckenridge, south over Colorado State Highway 9 for 6.8 miles; thence west up McCullough Gulch 1.7 miles, and north for 1 mile to the property which is inaccessible for at least 5 months of the year under the best of conditions due to the high altitude, extreme cold, and heavy snows.

HISTORY AND PRODUCTION

Early history of the property is unknown. Two shallow shafts on the Norway No. 1 claim and one on the Norway No. 4 claim and the lack of an access road indicate that no manganese or other ore was removed from the property except as samples.

OWNERSHIP AND EXTENT

The property consists of four unpatented mining claims known as the Norway Lodes Nos. 1 to 4, inclusive, formerly owned in partnership by Max Dereum, Dillon, Colo., R. F. Mackie, Breckenridge, Colo., and R. C. Brown, Royal Oak, Mich.

Since the application for exploration assistance was made, the owners have incorporated these claims with others in the vicinity of Montezuma, Colo. The company is now known as the Chihuahua Mining and

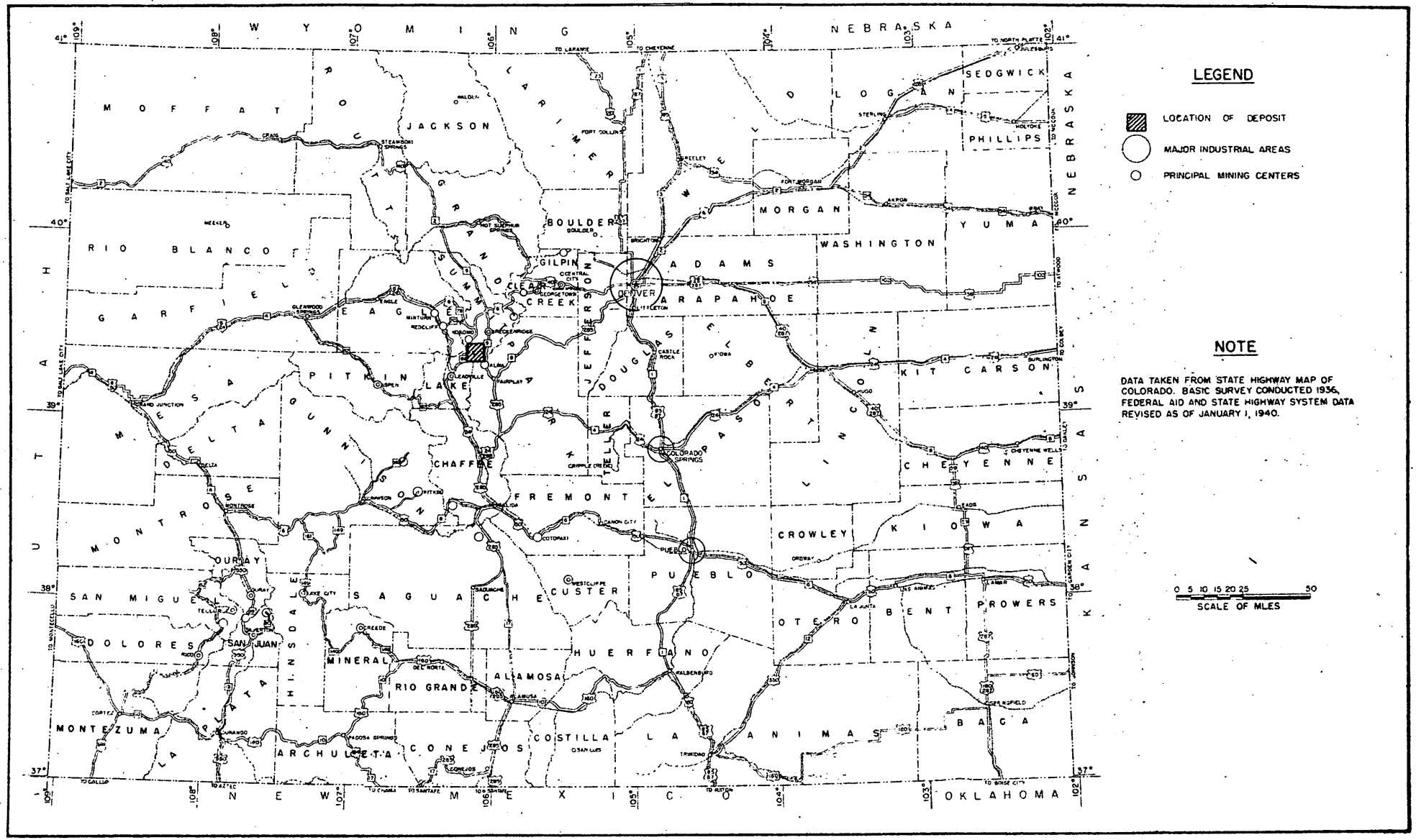


Figure 1. Location Map, Norway Manganese Lode Company, Summit County, Colorado, DMEA 1368X

Milling Company and is capitalized for $100,000.00 under the laws of the State of Colorado.

Officers are:

Max Dereum	Dillon, Colo.,	President
D. E. Leonard	Loveland, Colo.,	Vice President
Edna Dereum	Dillon, Colo.,	Secretary-Treasurer
R. F. Mackie	Breckenridge, Colo.,	Director
R. C. Brown	Royal Oak, Mich.,	Director

DESCRIPTION OF THE DEPOSITS

Manganese and iron oxides occur as fissure filling in nearly vertical shear zones in flat lying pre-Pennsylvanian limy sandstones. Outcrops are widely separated and apparently not connected, and are on opposite sides of a rugged ridge between McCullough and Spruce gulches. Surface exposures are traceable for very short distances due to almost complete masking by soil, glacial debris, and talus. Manganese is most prominently exposed in a shallow shaft on the Norway No. 1 claim. This exposure consists of narrow bands of iron and manganese oxides in limy sandstone. The accessible face was 7 feet wide and 10 feet deep. About 25 percent of the face is estimated as low-grade manganese ore. The ore zone strikes about N. 37° W. and dips 32° E. A shallow pit to the southeast shows very weak mineralization with staining. There is no other observable evidence of manganese on the claim.

The Norway No. 2 claim exhibits manganese and iron oxides as float in a talus slide near its northern boundary.

The Norway No. 3 claim shows no evidence of manganese.

The Norway No. 4 claim exposes manganese-iron oxides as float near its boundary with the Norway No. 2 claim, and a narrow shear zone

exhibits the same type of manganese-iron occurrence as exposed on the Norway No. 1 claim. The shear zone strikes roughly N. 20° W. and dips vertically. A small adjacent prospect shaft was inaccessible.

Development to date, as shown on figure 2 accompanying the geologic report, is very meager and insufficient for conclusive geologic analysis. The presence of excessive zinc in the concentrations of manganese and iron oxides and traces of lead and copper indicates that they may form the gossan over small zinc sulfide deposits.

The deposits appear to have very limited strike extent, and extension down the dip in the oxide zone is believed to be considerably less than 100 feet. As a consequence, the deposits would probably develop only very small reserves of manganese ore unacceptable in quality.

SAMPLING

Character samples of the ore by the applicant and by the examining team, separately, indicate comparable results. The former were analyzed by the Colorado Fuel and Iron Corporation, of Pueblo, Colo. Check samples numbers 1 and 2 taken by the examining team, shown on figure 2 with the geological report, were taken from the only exposures on the property. They and the applicant's samples were taken from the same approximate locations and the assays correspond with reasonable closeness. Analyses are in more detail than would ordinarily be required, to furnish information regarding the character of mineralization and to determine if the widely separated exposures were entirely similar petrologically and to conform with analyses submitted by the applicant.

Sample Data

Sample No.	Percent Mn	Fe	SiO_2	Al_2O_3	P	CaO	MgO	BaO	S	Zn	Pb	Cu	Sample Location Figure 2
1 (Applicant)	25.1	23.0	8.2	1.0	0.026	1.1	1.9	nil	Tr.	2.3	nil	nil	2
1 (DMEA)	24.6	22.8	6.4	1.2	.02	1.4	1.65	0.06	0.1	3.85	<.1	<.05	2
2 (Applicant)	22.7	21.7	12.7	1.8	.074	1.1	1.8	.2	.7	2.3	nil	nil	1
2 (DMEA)	24.4	27.4	8.2	1.2	.01	.8	1.15	.03	.1	.7	<.1	<.05	1
Average	24.2	23.7	8.9	1.3	0.03	1.1	1.62	0.09	0.07	2.29	<.1	<.05	

MINEABLE ORE RESERVES

There are no mineable ore reserves available under the status of present development which classes the property as a border line prospect.

Reserves based on geologic inference probably would not exceed 9,000 tons of manganese-iron oxide ore assaying about as shown in the average shown under sampling.

Assumptions:

$$\frac{1,400 \text{ feet length} \times 5 \text{ feet width} \times 100 \text{ feet depth}}{10 \text{ cubic feet per ton}} = 70,000 \text{ tons vein matter}$$

70,000 tons x 1/4 (ore in vein) = 17,500 tons crude ore in vein

17,500 tons x 1/2 (sorting factor) = 8,750 tons possible shipping ore

PRESENT STATUS

Exploration and Development

Exploration is limited to two shallow shafts on the Norway Nos. 1 and 4 claims shown on figure 2 with the geologic report. They expose low-grade manganese and iron oxide mineralization insufficiently developed to indicate its extent.

Equipment and Facilities

There is no surface plant or any equipment on the property and no access road to it.

PROJECT PROPOSALS WITH COSTS

The applicant, Max Dercum, proposed to construct about 2 miles of exploration access bulldozer trail to the property and develop the Norway group of claims by trenching outcrops with a bulldozer to determine their extent. He estimated the work could be completed

within 12 working days at a cost of $1,500.00.

Dereum's estimate is about correct to determine surface extent and whether further exploration is justified. It does not, however, add anything to information on the size of the deposit or its character which can only be determined by a combination of trenching and diamond drilling or by underground development.

PROPOSED FINANCING

The partners proposed furnishing their services as:

Supervisor at $15.00 per day
Bulldozer operator at $14.50 per day
Miner at $12.00 per day

In addition, they would furnish an Allis Chalmers HD-10 bulldozer at $64.00 per day and a jeep at $6.00 per day, supplies and tools to be purchased by them as required.

CONCLUSIONS

Meager exposures and the structural relationships on the Norway Lode Manganese properties are not encouraging for the development of important manganese reserves, and analyses of the ore indicate low-grade material and contaminants, particularly zinc, making it unacceptable metallurgically.

In addition, the inaccessibility of the deposits and curtailed operating season would interfere with production.

If the ore were acceptable, lack of concentration facilities, distance from potential markets, and high costs make this an unattractive venture.

Reserves based on geologic inference, totaling 9,000 tons, would require costly exploration, development, mining, and sorting charges to substantiate and bring into production. They are too unimportant and low grade to justify even the small loan requested.

The zinc content and traces of lead and copper accompanying the manganese and iron encourage the belief that exposures are the gossan over probable small zinc sulfide deposits. Their development would require construction of an access trail and diamond drilling or shaft sinking operations.

RECOMMENDATIONS

The application for an exploration loan of $1,500.00, docket DMA 1368X, by Max Dercum, to explore the Norway Lode Manganese claims for manganese is recommended for denial.

bam

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado

August 6, 1952

Memorandum:

To: A. H. Koschmann, U. S. Geological Survey

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 1368X (Manganese), Norway Lode Manganese Company, Summit County, Colorado

Please find enclosed the brochure on the subject docket, sent you by the Region IV Field Team, and loaned us for preparing our engineering report.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosure

WMT/bam

cc: WHKing
DMEA 1368X
DMEA Chron.

WMT/dd

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
November 28, 1951

Memorandum

To: Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 1368X, Max Dercum, applicant; Norway Manganese Lode, Summit County, Colorado

Please find attached a copy of a letter from Max Dercum requesting postponement of examination of the above property until next May.

This letter was submitted by Mr. Dercum at my request for our records.

W. M. Traver, Jr.

enclosure

cc PTAllsman
AHKoschmann
DMA 1368X
DMA Chron.

CMH

See Location U.S.G.S. Quad. map.
Arapaho Forest Service map
McCullough Gulch is the 1st gulch north of the one where the Max Dercum mine is located.
Better check ownership

C
O
P
Y

Max Dercum, Manager
Norway Lode Manganese Co.,
Montezuma Road,
Dillon, Colorado

November 16, 1951

Mr. W. M. Traver,
U. S. Bureau of Mines,
Bldg. 20, Denver Federal Center,
Denver 14, Colorado.

Dear Mr. Traver:

Thank you for your call of November 14. In reference to your inquiry as to whether it was possible to get in to the Norway Lode manganese deposits, this will inform you that as a result of the recent storms about three feet of snow now covers the range. As a result it would be impossible to inspect these properties at this time of year.

It has been our experience that some of this ground will be exposed enough for a surface examination some time in May; we will be glad to let you know when the snow goes off the range so that you can make plans to look the manganese prospects over at that time.

We hope that these deposits will warrant development in the near future; with the Glasier Milling Co. reduction mill being constructed at Montezuma by Andrew Sweet, et. al. the future of local manganese looks much brighter.

Yours very truly,

/s/ Max Dercum

Max Dercum

C
O
P
Y

NOV 1951
RECEIVED

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : A.H. Koschmann

DATE: Nov. 26, 1951

FROM : W.B. Meek

SUBJECT: Field examination of Norway Manganese Lodes, Summit County, Colo.
D.M.A. Docket 1368X

The attached brochure is returned in view of the fact that Max Dercum, the applicant, informed Mr. Travers that the property will be inaccessible until next spring. He is supposed to notify DMA when the claims can be examined.

ANK
Hold till Spring

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

224 New Customhouse
Denver 2, Colorado

WASHINGTON 25, D. C.

October 30, 1951

Memorandum

To: A. H. Koschmann (with brochure)

(Through Chief, Mining Division, Region IV)

W. M. Traver

From: DMA Field Team, Region IV

Subject: DMA Docket 1368X, Max Dercum, applicant; Norway Manganese Lodes, Summit County, Colorado

Enclosed is the application of the subject docket and a review by the Coordinating Committee for an exploration loan of $1500.00.

will require more money

The proposed work consists of trenching the outcrops with a bulldozer. This program would not explore any appreciable reserves of ore, and the applicant should be approached about sinking an inclined shaft.

check sample

Two samples of ore averaged 23.9 percent manganese with a zinc content of 2.3 percent, which is too high for use. The zinc content should be checked.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Enclosures

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

REGIONAL DIRECTOR'S OFFICE
REGION IV
OCT 25 1951
OCT 23 1951
BUREAU OF MINES
DENVER, COLORADO

Mr. J. H. East Jr., Executive Officer
DMA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: DMA-1368X-Manganese

Dear Mr. East:

The enclosed application is being referred to you for additional information. Neither the Bureau of Mines nor the Geological Survey have any data on this property.

Mr. Max Dercum of Dillon, Colorado, proposes to spend $1,500 in exploring the claims, Norway Lode 1, 2, 3, and 4 located in Sec. 26, T7S, R78W, 6 miles SSW of Breckenridge, Summit County, Colorado. His plans call for trenching the vein in various places with a bulldozer.

If Dercum is successful in his program, he would not demonstrate sufficient tonnages to warrant a mill or production loan. We suggest that Mr. Dercum be approached with the idea of sinking an inclined shaft in the ore to a depth sufficient so that lateral drifting may prove the quantity of material required.

In answer to question 18a, Mr. Dercum reports 2.3% zinc in both assays submitted. This is very high. We would like check samples taken and assayed with the high zinc and iron content in mind. It would be well to establish a market for this ore before an exploration loan is approved.

Very truly yours,

Tom Lyon

Tom Lyon, Chairman
Coordinating Committee

Enclosures

H. W. McClain
Bureau of Mines

T. P. Thayer
Geological Survey

OFFICE
REGION IV
OCT 25 1951
BUREAU OF MINES
DENVER, COLORADO

OCT 23 1951

Mr. J. H. East Jr., Executive Officer
DMA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Ref: DMA-1364L-Manganese

Dear Mr. East:

The enclosed application is being referred to you for additional information. Neither the Bureau of Mines nor the Geological Survey have any data on this property.

Mr. Max Dercum of Dillon, Colorado, proposes to spend $1,500 in exploring the claims, Norway Lode 1, 2, 3, and 4 located in Sec. 26, T7S, R78W, 6 miles NW of Breckenridge, Summit County, Colorado. His plans call for trenching the vein in various places with a bulldozer.

If Dercum is successful in his program, he would not demonstrate sufficient tonnages to warrant a mill or production loan. We suggest that Mr. Dercum be approached with the idea of sinking an inclined shaft in the ore to a depth sufficient so that lateral drifting may prove the quantity of material required.

In answer to question 14, Mr. Dercum reports 2.3% zinc in both assays submitted. This is very high. We would like check samples taken and assayed with the high zinc and iron content in mind. It would be well to establish a market for this ore before an exploration loan

Very truly yours,

SIGNED

Tom Lyon, Chairman
Coordinating Committee

Enclosures

SIGNED
Bureau of Mines

SIGNED
Geological Survey

DEPUTY DIRECTOR'S OFFICE REGION IV OCT 25 1951 BUREAU OF MINES DENVER, COLORADO

Mr. J. H. East Jr., Executive Officer
DMA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: DMA-1363L-Manganese

Dear Mr. East:

The enclosed application is being referred to you for additional information. Neither the Bureau of Mines nor the Geological Survey have any data on this property.

Mr. Max Dercum of Dillon, Colorado, proposes to spend $1,500 in exploring the claims, Norway Lode 1, 2, 3, and 4 located in Sec. 26, T7S, R78W, 6 miles NW of Breckenridge, Summit County, Colorado. His plans call for trenching the vein in various places with a bulldozer.

If Dercum is successful in his program, he would not demonstrate sufficient tonnages to warrant a mill or production loan. We suggest that Mr. Dercum be approached with the idea of sinking an inclined shaft in the ore to a depth sufficient so that lateral drifting may prove the quantity of material required.

In answer to question 1'a, Mr. Dercum reports 2.3% zinc in both assays submitted. This is very high. We would like check samples taken and assayed with the high zinc and iron content in mind. It would be well to establish a market for this ore before an exploration loan

Very truly yours,

Tom Lyon, Chairman
Coordinating Committee

Enclosures

Bureau of Mines

Geological Survey

Index of File to Field Team
DMA 1368X Manganese

1 copy of MF-103 with attached 10/16/51
answers and maps

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

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

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1368X

Date received 5-31-51

Participation

Name and address of applicant

Date

FILL IN THIS BLOCK

Date of application May 22, 1951

Estimated cost $1500

Mineral or metal Manganese

Percentage of Government participation 75%

Location of mine Approx. S.26 T7S R78W

6 miles SSW of Breckenridge, Summit County, Colorado

Date of filing MF-100

DMA Docket Number, if available 1368X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation? Partnership (R.C.Brown (1133 Pinehurst Ave (Royal Oak, Michigan.

*2. If a partnership, state names and addresses of partners. Max Dercum, Dillon, Colo. R.F.Mackie, Breckenridge, Colo.

*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.

*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project. *

*5. Are you the owner or the lessee of the property? Owner

6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None

7. If lessee, attach a copy of the lease and state if it is in good standing. —

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement. Cash on hand for project: $375

9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)? $375 -- Yes

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*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. Norway Lodes 1,2,3,4

(*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted. Sect. 26, T7S R78 W, Breckenridge, Colorado

NOTE.—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 (*b*) 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.

*11. State the present and former names of the property, if any. Norway Lode Nos. 1,2,3,4

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads. *

*13. State source and quantity of water available for operations and its sufficiency at all seasons. State amount of power to be used, rate per hour or other cost, and source. springs ½ mile streams 1 mile

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work. none

15. State in detail how the ore could be shipped and how and where milled. *

*16. History: *

(*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations. *

(*b*) State briefly the known history and production of adjoining and neighboring properties. *

(*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations. Recent USGS survey of Tenmile Range, Colorado

*17. Production:

(*a*) If mine is in production, furnish the following information: Not in production.

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.) *

(*a*) Describe the ore or mineral deposits briefly. *

(*b*) Submit available maps and assay data. *

(*c*) Give estimated tonnage and grade of each class of ore reserves. no estimates available

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

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted? Manganese veins also Tungsten

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. *

NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data. see answer to 18a,b.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:

(*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each. *

(*b*) Supervisors, by numbers and positions, with salaries of each. *

(*c*) Cost of necessary repairs to existing facilities, structures, and buildings. none

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings. none

(*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each. none

(*f*) Cost of rental for equipment which the operator proposes to rent. *

(*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work. *

(*h*) Cost of materials and supplies, including items of equipment costing less than $50 each. *

(*i*) Cost of power, water, utilities, and any other items not provided for above. none

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent. 1 month after approval during months of July or August, 1951

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.

Norway Lode Manganese Co. (Name of company)

By Max Dercum (Signature of authorized official)

May 22, 1951 (Date)

Manager (Title)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 31 1951
LANDON F. STROBEL
Executive Secretary

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.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

Form MF-103
Supplemental

Norway Lode Manganese Co.
Dillon, Colorado

*4 Partnership is combination of a)active miner; b) logging engineer with background in mining, sawmilling, construction, now running own consulting business; c) businessman, vice-pres. of Brown Steel Corp.formerly in own trucking business.

*12 Location 6 miles SSW of Breckenridge, Colo.; lies 1½ miles west of Colorado Route 9; 14 miles south of Dillon; 54 miles south of Kremmling, Colo. D&RGW RR. 5 mile gravel road, 9mile blacktop to Dillon, 40 miles gravel to Kremmling.

*15 Truck haul; would necessitate mill as proposed and developed in pilot plant stage by Andrew Sweet, Jr. of Denver, Colorado(son of Andrew Sweet, Chief Metallurgist, Bureau of Mines, Denver, Colo.) Mill would probably be located in vicinity of Dillon, Colo. making 15 mile truck haul, requiring large trucks for tonnage production.

*16a.No previous production; the manganese showings are result of earlier prospecting for gold and silver; until the present time, no other developments or operations.
b.None for manganese in a district of gold, tungsten, zinc, and lead load

*18a.Manganese oxide(probably pyrolusite); also iron. (Ore is in contact with limestone beds, but due to dip, and overburden, not possible to now to estimate size of ore body. Vein approx. 10 feet wide at outcroppings)
b.Assey data:Prospect Nos. 1 & 2

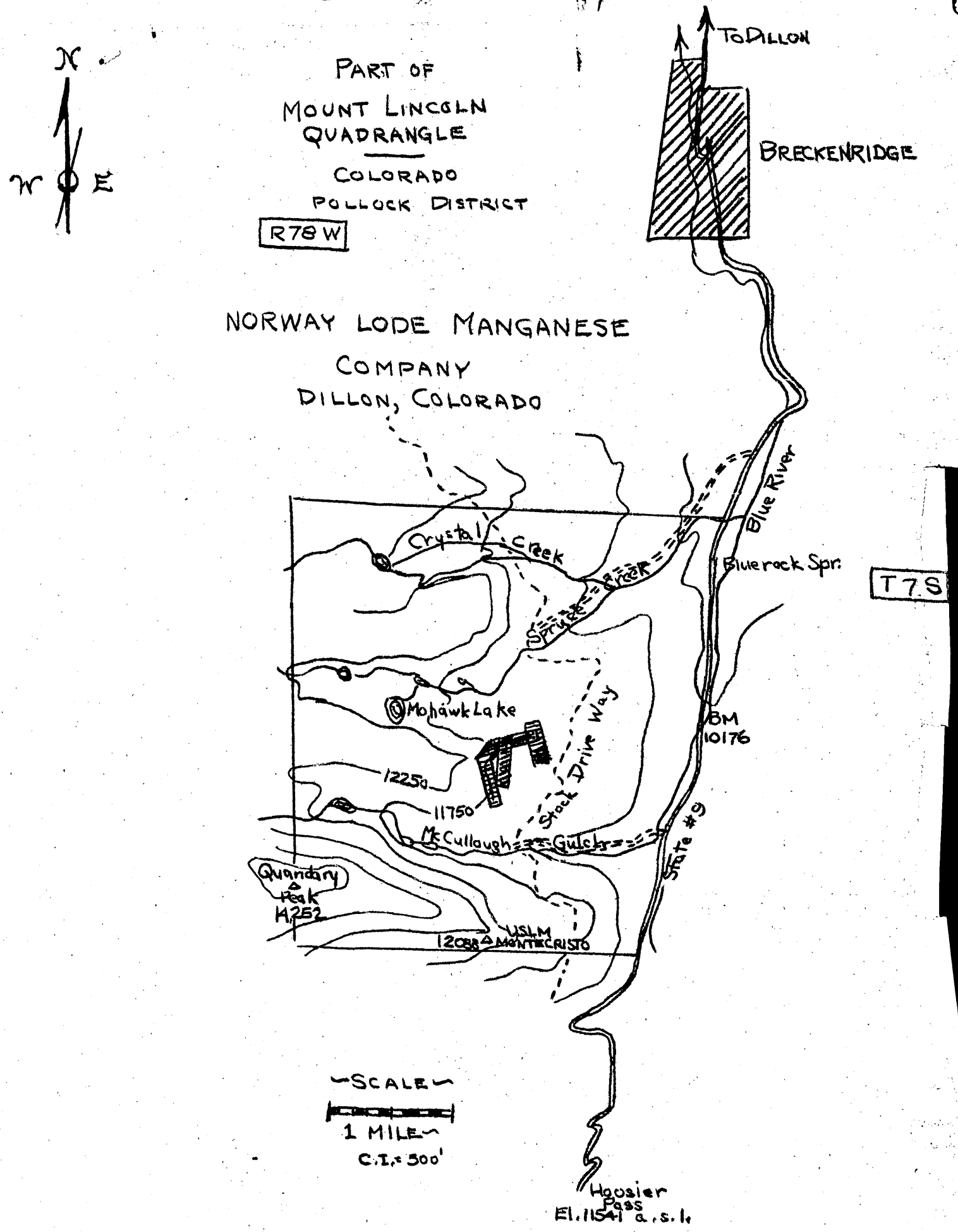
#i	Fe.	Mn.	SiO_2	Al_2O_3	Phos	CaO	MgO	BaO	Sul	Zn.	Pb.	Cu.
#1	23.0	25.1	8.2	1.0	.026	1.1	1.9	Nil	Tr.	2.3	Nil.	Nil
#2	21.7	22.7	12.7	1.8	.074	1.1	1.8	.2	.07	2.3	Nil.	Nil

*19 The two samples came from separate croppings at the top of shafts approximately 2500 feet from each other, on opposite sides of a mountain ridge. These show substantially the same composition. Due to the overburden on the intervening area, this would be the most productive area for exploration. Altitude of properties, approx. 11,500' to 12,000' a.s.l.

no access

*21 Building access trail for bulldozer and jeep for about 2 miles over relatively open ground to vein croppings; then making open cuts at various points to locate dipand strike of vein between known extremities, by bulldozing.

*23a.Labor:	1 Dozer operator @ $1.85/hr....		100 hrs.....	$185.00
	1 Miner	1.50	12 days	144.00
b.	1 Supervisor	15.00/day	12 "	180.00
f.Bulldozer	@ $8/hr	8hrs/day	12 "	768.00
g.Jeep rental		$8/day	12 "	96.00
h.Tools, powder, caps, fuse, etc.				100.00
				$1473.00


N
W
E
PART OF
MOUNT LINCOLN
QUADRANGLE
COLORADO
POLLOCK DISTRICT
R78W
NORWAY LODE MANGANESE
COMPANY
DILLON, COLORADO
TO DILLON
BRECKENRIDGE
Blue River
Crystal Creek
Spruce Creek
Blue rock Spr.
T7S
Mohawk Lake
Stock Drive Way
BM
10176
12250
11750
McCullough Gulch
State #9
Quandary
Peak
14,252
12088
USLM
MONTECRISTO
SCALE
1 MILE
C.I. = 500'
Hoosier
Pass
El. 11541 a.s.l.
M.D.
1951

HEART OF THE ROCKIES CABIN
L. W. ADRIAN, Prop.
HUNTING-FISHING-SKIING
PACK TRIPS BY HORSEBACK AND JEEP
GAS HEAT—SHOWERS
COOKING
U.S. Highway 6, 77 Mi. West of Denver
PHONE 9-J
P.O.Box 86 Dillon, Colo.
Map Location—D-4

DILLON GARAGE
General Repairing
SPORTING GOODS
WRECKER SERVICE
Phone 17
FRITZ HAEGEY and FRANK BYERS, Props.
24-Hour Service
Map Location—D-4

DILLON HOTEL
HEATED ROOMS
In the Heart of the Fishing Country
Phone Dillon 33
Map Location—D-4

LUCKY HORSESHOE INN
MAX L. BUNKER
MEALS • BAR
FINE FOOD
STANDARD GAS AND OIL
U. S. 6 in Dillon
Map Location—D-4

STAGHORN LIQUORS
COLD BEER AND POP TO TAKE OUT
JOHN VALAER
Dillon, Colo.
Map Location—D-4

SWANSON LUMBER CO.
LDI Building Materials
Paints - Hardware
TEN-MILE TRADING POST
NOVELTIES
FRISCO, COLO.
Map Location—C½-4½

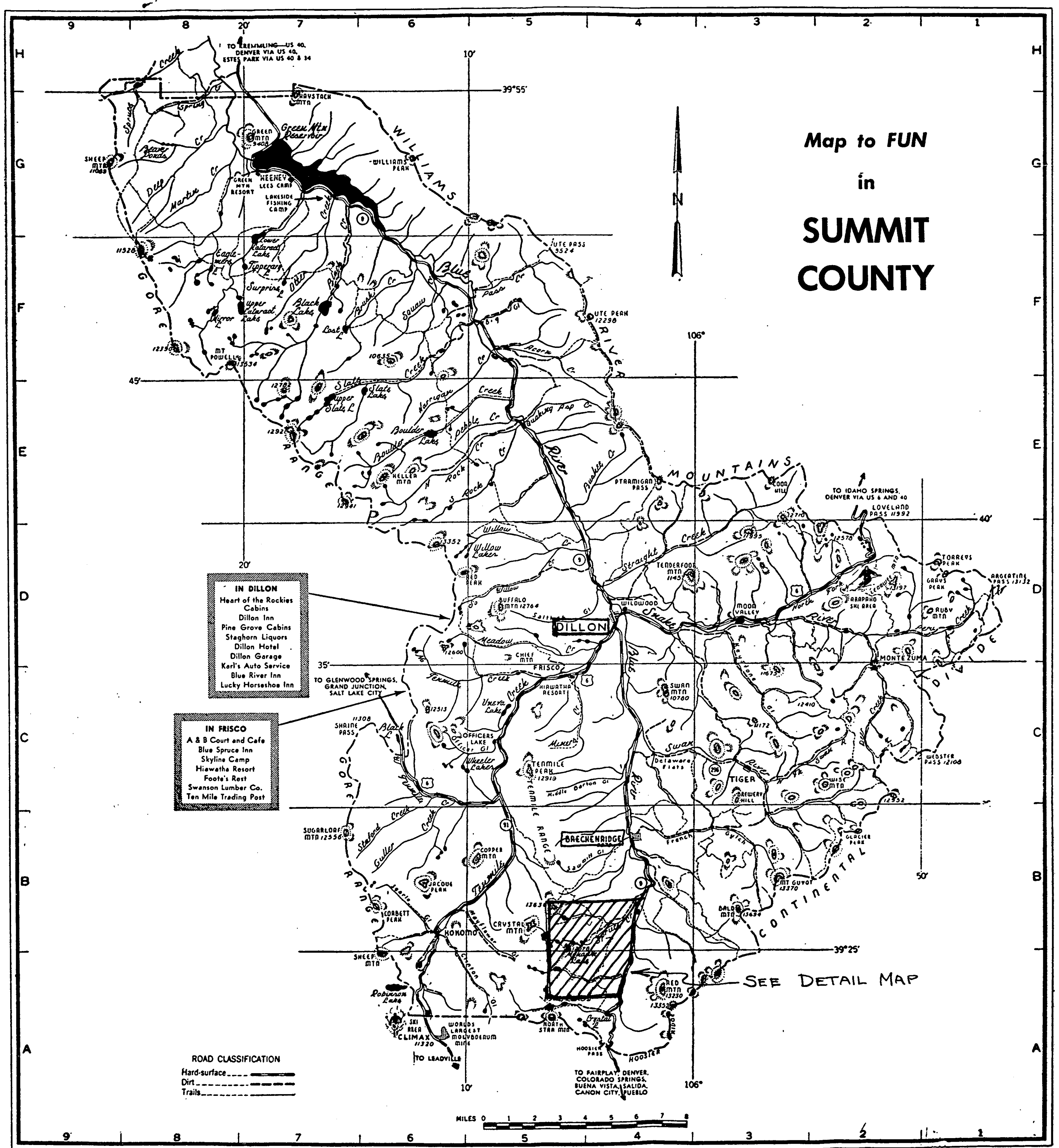
DILLON INN
CAFE AND BAR
Quality Foods
MIXED DRINKS
DRAUGHT BEER
Dillon, Colo.
Map Location—D-4

PINE GROVE CABINS
Clean—Comfortable
Reasonable Rates
PHONE DILLON 39
Dillon, Colo.
Map Location—D-4

BLUE RIVER INN
Famous For Fine Food and Cocktails
Dillon, Colo.
The Sportsmen's Paradise
Map Location—D-4

KARL'S AUTO SERVICE
KARL M. KNUDSEN
WRECKER SERVICE
REPAIRS
CONOCO PRODUCTS
FISHING TACKLE
Fishing and Hunting Licenses
Dillon, Colo.
Map Location—D-4

WILDWOOD LODGE
One Mile East of Dillon on U. S. 6
HOTEL AND CABINS
HAROLD MINOWITZ
Map Location—D-4



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MOON VALLEY LODGE
NEW—COMFORTABLE—COMPLETELY MODERN
THE Place to Stay for
GOOD MEALS • ROOMS • FISHING
Five Miles East of Dillon at the Foot of Loveland Pass
DILLON, COLORADO
Map Location—D-3

HIAWATHA RESORT
FISHING—SWIMMING
RIDING — CABINS
PIANO, VOICE, BALLET LESSONS AVAILABLE
Elinor and Emil Slovak
Frisco, Colo.
Map Location—C½-4½

A & B
COURT & CAFE
Strictly Modern
Frisco, Colo.
ALMA AND BILL FAILS
Map Location—C½-4½

SKYLINE CAMP
MODERN CABINS
WITH GAS COOKING FACILITIES
RALPH AND VIRGINIA PORTERFIELD
PHONE 23-R3
Frisco, Colo.
Map Location—C½-4½

Green Mountain Resort
On the Shores of Green Mountain Lake
C. H. HALLDORSON
FISHING—RIDING—CABINS
CAFE—STORE—GAS—BEER
LONG DISTANCE PHONE GREEN MTN. DAM 8
Heeney, Colo.
Map Location—G-7

FOOTE'S REST
Ozone Capitol of the Universe
CABINS
GROCERIES DRUGS GAS
Frisco, Colo.
Phone Frisco 23-R4
Map Location—C½-4½

Blue Spruce Inn
Gil & Eva Barringer, Owners
CURIOS
Bar • Lounge
Cafe • Lodge
LIQUOR STORE
FISHING AND HUNTING GUIDE
WINTER SPORTS SKI PARTIES
PHONE 23-J5
Frisco, Colorado
Map Location—C½-4½

Caught at
LEE'S CAMP
—ON—
Green Mt. Lake
KREMMLING, COLO.
Map Location—G-7

LAKESIDE FISHING CAMP
GREEN MOUNTAIN LAKE
THREE MILES OF EXCELLENT SHORE FISHING
Cabins • Boats
Camping
Big Game Hunting in Season
Dillon, Colo.
Map Location—D-7

FISHING in Summit County . . .

The devotee of rod and reel will really find the TOPS in his favorite sport in Summit county. Clear, cold mountain streams and high timberline lakes offer the fisherman his choice of waters. There are over 325 miles of trout streams and over 100 lakes in Summit County, many of them as yet unnamed.

200,000 landlocked salmon are being introduced into Green Mountain lake this year and will be followed by 200,000 each year for the next four years.

Streams and Lakes . . .

The more important fishing streams and lakes are listed below. There are many smaller streams and lakes which may be located by consulting the map on opposite side of the folder. Dillon is used as a starting point to figure mileage as it is approximately the center of Summit County.

FROM DILLON	
NORTH on State 9	Miles
Blue River	
Straight Creek	1
Willow Creek	3
Willow Creek Lakes	10
Rock Creek	10
Boulder Creek	11
Slate Creek	15
Boulder Lake	16
Slate Creek Lakes	22
Black Creek	22
Lost Lake	23
Black Creek Lake	27
Green Mtn. Reservoir	27
Cataract Creek	24
Cataract Lake	28
Surprise Lake	30
Tipperary Lake	30

FROM DILLON	
WEST on U. S. 6	Miles
Ten Mile Creek	1
Meadow Creek	2
Miner's Creek	3
North Ten Mile	5
Officer's Lake	8
West Ten Mile	10
Wheeler Lake	12
Black Lake	16
SOUTH on State 9	Miles
Blue River	
Swan River	6
Barton Creek	9
Crystal Lake	18
Blue Lakes	20
EAST on U. S. 6	Miles
Snake River	1
Soda Creek	3
Keystone Creek	5
North Fork	8
Loveland Pass Lake	15

GREEN MOUNTAIN RESERVOIR, 27 miles north of Dillon, State highway 9, is one of the county's favorite fishing spots. The lake which is backed up by the largest earth-fill dam in the world (309 feet high and 1,150 feet long. 134,645-acre-feet capacity) is 7 miles long.

Beaver Ponds . . .

Most of the smaller streams in Summit County have many beaver dams located along their courses. These ponds, in addition to helping to regulate the flow of water, offer excellent trout fishing. The Goose pastures above Breckenridge are excellent examples of this type of fishing. Another type of fishing is to be found in the small ponds known as dredge holes which are monuments to early day gold dredging operations. Many of these are to be found along the Swan from just above Tiger on State 296 to its junction with the Blue, and also around Breckenridge.

Hunting . . .

DEER, elk, bear, rabbits and ducks may be hunted in season. The Blue River valley is noted for its abundance of big game. Some of the largest bucks and bull elk are killed in this area. The hunter who selects Summit County for his hunting ground is reasonably sure of getting a trophy. Make reservations now for the coming big game season.

Hiking . . .

The SUMMITS of 64 peaks over 12,000 feet high and literally hundreds over 10,000 feet in altitude await the mountain climber—or if you want to do it the easy way horses and guides are available at many places throughout Summit County. Pack and jeep trips into Summit County's wilderness areas will give you ammunition for many a future "bull" session.

The Gore Range . . .

Wilderness area located just west of State Highway 9 was named for an Irish baronet, Sir George Gore, who visited the area in 1855, forms the west boundary of Summit County. This area, of approximately 100,000 acres, one of the most scenic in the state, is an unspoiled mountain area in the rugged Gore Mountains which has been set aside as a wilderness area, with natural conditions preserved as undisturbed as possible. Among the peaks and canyons are many beautiful lakes—Boulder, Slate, Tipperary, Surprise, Lost and others. This area is as rough as any similar area in Colorado. Trails extend along many of the streams, but the main Gore Range is so rugged that no practical route for a horse trail over it has been found. Trips to the high lakes and to many of the unnamed and possibly unclimbed peaks, offer an attractive venture for skilled mountaineers.

Mining . . .

The Blue River valley was first settled by the gold seekers in 1859 and is still producing a fair share of the State's riches. From 1859 until the present time Summit County has produced over $55,000,000 in minerals. The peak production year for Summit County was in 1881 with a production of $2,599,293.

It is claimed that the first discovery of silver in Colorado was made at Montezuma. The first fire bricks used in Summit County were made in Wales and brought into Summit County by ox team from St. Louis, Mo. High grade ore from Summit County was used as ballast on the ship's return trip to Wales.

Ranching . . .

The Blue River Valley has many fine ranches raising hay and fine herds of cattle. During the summer months thousands of sheep graze on the high ranges.

Skiing . . .

Summit County has a combination of ideal snow conditions, expanse and character of terrain, accessibility, length of season and accommodations help to make Summit County second to none for the enjoyment of winter sports. Arapahoe Basin on U. S. 6 at the foot of Loveland Pass boasts of one of the finest ski developments in Colorado. The highest chair lift in the world will thrill you. Breckenridge, Dillon and Climax also have developed ski areas. The season usually runs from November until May at the highest elevations.

Accommodations . . .

Hotels, cabin camps, ranches, restaurants, bars and all types of services are to be found in Summit County—all offering genuine hospitality at a price you can afford. Remember—"Have More Fun in '51"—Come up to Summit County, Colorado and really enjoy your vacation. For additional information, write any of the advertisers in this folder.

DISTANCE FROM DILLON, COLORADO

To—	Miles
Alma	25
Aspen	134
Breckenridge	9
Buena Vista	71
Camp Hale	25
Climax	13
Colo. Springs	177
Denver	77
Dowd	35
Eagle	61
Fairplay	31
Frisco	4
Georgetown	31
Glenwood Springs	92
Grand Junction	184

To—	Miles
Grand Valley	135
Green Mtn. Dam	27
Gypsum	68
Idaho Springs	44
Kokomo	17
Kremmling	41
Leadville	35
Minturn	33
Montezuma	13
New Castle	105
Rifle	119
Silver Plume	29
Tiger	10
Twin Lakes	57
Wheeler	10

Welcome to . . .

TOPS in . . .

★ SCENERY
★ FISHING
★ HUNTING
★ SKIING
★ ROADS

Visit Summit County's Interesting Towns

★ BRECKENRIDGE ★ DILLON
★ FRISCO ★ HEENEY
★ KOKOMO ★ MONTEZUMA

GREEN MOUNTAIN REPORT
FISHING & HUNTING
C. H. HALLDORSON
HEENEY, COLORADO

HOW TO GET TO SUMMIT COUNTY

- **FROM DENVER . . .**

U. S. 6 and 40 to junction—7 miles above Idaho Springs thence on U. S. 6 through Georgetown and Silver Plume over Loveland Pass. This route is paved ALL the way and traverses one of the most scenic areas in Colorado crossing the Continental Divide at Loveland Pass, altitude 11,992 feet above sea level.

77 miles to Dillon
Frisco—4 mi. west of Dillon
U. S. 6
Breckenridge—9 mi. South of Dillon on State 9

Another interesting and scenic trip is by way of U. S. 40 over Berthoud Pass (Alt. 11,316 ft.) down the Fraser river valley through Winter Park, Fraser, Tabernash, Granby and thence down the wide Colorado river valley through Hot Sulphur Springs, Byers Canon to State Highway 9 up the Blue river valley.

138 miles to Heeney (Green Mountain Dam)
165 miles to Dillon

U. S. 285 through Morrison, up Turkey Creek canyon to Bailey thence by way of beautiful Platte canyon over Kenosha Pass into beautiful South Park. Continue on U. S. 285 to Fairplay thence north on State Highway 9 through the mining town of Alma and over Hoosier Pass (Alt. 11,541 ft.) into Blue River valley.

116 miles to Breckenridge
125 miles to Dillon
129 miles to Frisco
152 miles to Green Mountain Dam

- **FROM ROCKY MOUNTAIN NATIONAL PARK (Estes Park-Grand Lake)**

U. S. 34 over Trail Ridge (spectacular timberline scenery) to Grand Lake thence to junction of U. S. 34 and U. S. 40 thence west to Hot Sulphur Springs through Byers canyon to State Highway 9, then south to Green Mountain Dam, Heeney, Dillon, Frisco and Breckenridge

- **FROM COLORADO SPRINGS . . .**

U. S. 24 over Ute Pass to Hartsell, then north on State Highway 9 through Fairplay and Alma over Hoosier Pass (Alt. 11,541 ft.).

108 miles to Breckenridge
117 miles to Dillon
121 miles to Frisco
144 miles to Green Mountain Dam

- **FROM LEADVILLE . . .**

State Highway 91 over Fremont Pass—where Climax, the largest molybdenum mine in the world is located.

31 miles to Frisco
35 miles to Dillon

- **FROM PUEBLO . . .**

U. S. 50 through Canon City, Salida, north on 285 to Fairplay thence on State Highway 9 over Hoosier Pass into Summit county.

177 miles to Breckenridge
186 miles to Dillon

- **FROM GLENWOOD SPRINGS . . .**

U. S. 6 through Glenwood canyon over Vail Pass.

88 miles to Frisco
92 miles to Dillon

HAVE MORE FUN IN '51

★

COME UP to the HIGH COUNTRY

——OF——

SUMMIT COUNTY COLORADO

FOR YOUR VACATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado

August 6, 1952

Mining Division
Date Rec'd.
AUG 8 - 1952
BUREAU OF MINES
Denver, Colorado

Memorandum:

To: A. H. Koschmann, U. S. Geological Survey

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 1368X (Manganese), Norway Lode Manganese Company, Summit County, Colorado

Please find enclosed the brochure on the subject docket, sent you by the Region IV Field Team, and loaned us for preparing our engineering report.

W. M. Traver, Jr.

enclosure

WMT/bam

cc: WHKing
DMEA 1368X
DMEA Chron.

6-303
(March 1947)

cc: Wm. H. King
W. M. Traver, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

No. 5

Salt Lake City, Utah

Report to Mr. C. M. Harrer

Chemical Laboratory Report

Date received July 9, 1952

Date reported July 14, 1952

Serial No.	DESCRIPTION	Lot No.	Cu	Pb	Zn	Fe	Al_2O_3	CaO	MgO	SiO_2	P	BaO	Mn
	Norway Manganese Lodes, 1 - 4, DMA 1368X. Sec. 26, T. 7 S.,												
	R. 78 W., Pollock Mining District Summit County, Colorado												
4323	Manganese and iron oxides	H-554	<0.05	<0.1	0.7	27.4	1.2	0.8	1.15	8.2	0.01	0.03	24.4
4324	" "	H-555	<0.05	<0.1	3.85	22.8	1.2	1.4	1.65	6.4	0.02	0.06	24.6
			S										
4323		H-554	0.1										
4324		H-555	0.1										

U. S. GOVERNMENT PRINTING OFFICE 16—33553-3

Signed H. E. Peterson

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

W.H.K.

Building 20, Room 137
Denver Federal Center
Denver 14, Colorado

Mining Division
Date Rec'd
JUL 3 1952
BUREAU OF MINES
Denver, Colorado

July 3, 1952

Memorandum

To: J. Bruce Clemmer, Chief, Metallurgical Division, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: Sample shipment

Please find enclosed the original and one copy of government bill of lading IN-93959 covering a shipment via Pacific Intermountain Express of two ore samples in one sack taken from the Norway Manganese Lodes (DMA 1368X), Summit County, Colorado. Form 7353, in triplicate, indicating the assays and tests desired is also enclosed.

Inasmuch as these are DMEA samples, your prompt attention will be very much appreciated.

W. M. Traver, Jr.

Enclosures

dd/bam

cc: WHKing
1368X
General
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado

June 4, 1952

Mr. Max Dercum, Manager
Norway Lode Manganese Company
Montezuma Road
Dillon, Colorado

Re: DMA 1368X, Norway Manganese
Lodes, Summit County, Colorado

Dear Mr. Dercum:

Your letter of November 16, 1951, in response to my telephone call stated the captioned deposit would possibly be accessible for examination in May 1952.

It is realized that the past winter was more severe than usual and it may be the surface is still covered with snow. However, we are attempting to schedule our tentative mine examinations as far in advance as possible in order to make the best use of geological and engineering personnel.

Please advise if you are still interested in your application for an exploration loan and, if so, when, in your opinion, an examination can be made. A prompt reply will be appreciated.

Very truly yours,

W. M. Traver, Jr., Chief
Colorado Branch
Mining Division, Region IV

WMT/bam

cc: WHKing
AHKoschmann
DMA 1368X
Chron.

Mining Division
Date Rec'd.
JUN 5 1952
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
November 28, 1951

Mining Division
Date Rec'd.
NOV 28 1951
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 1368X, Max Dercum, applicant; Norway Manganese Lode, Summit County, Colorado

Please find attached a copy of a letter from Max Dercum requesting postponement of examination of the above property until next May.

This letter was submitted by Mr. Dercum at my request for our records.

W. M. Traver, Jr.

W. M. Traver, Jr.

enclosure

HS

C
O
P
Y

Max Dercum, Manager
Norway Lode Manganese Co.,
Montezuma Road,
Dillon, Colorado

November 16, 1951

Mining Division
Date Rec'd.
NOV 18 1951
BUREAU OF MINES
Denver, Colorado

Mr. W. M. Traver,
U. S. Bureau of Mines,
Bldg. 20, Denver Federal Center,
Denver 14, Colorado.

Dear Mr. Traver:

Thank you for your call of November 14. In reference to your inquiry as to whether it was possible to get in to the Norway Lode manganese deposits, this will inform you that as a result of the recent storms about three feet of snow now covers the range. As a result it would be impossible to inspect these properties at this time of year.

It has been our experience that some of this ground will be exposed enough for a surface examination some time in May; we will be glad to let you know when the snow goes off the range so that you can make plans to look the manganese prospects over at that time.

We hope that these deposits will warrant development in the near future; with the Glasier Milling Co. reduction mill being constructed at Montezuma by Andrew Sweet, et. al. the future of local manganese looks much brighter.

Yours very truly,

/s/ Max Dercum

Max Dercum

C
O
P
Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado
November 28, 1951

Mining Division
Date Rec'd.
NOV 28 1951
BUREAU OF MINES
Denver, Colorado

Memorandum

To: Chief, Mining Division, Region IV

From: Chief, Colorado Branch, Mining Division

Subject: DMA 1368X, Max Dercum, applicant; Norway Manganese Lode, Summit County, Colorado

Please find attached a copy of a letter from Max Dercum requesting postponement of examination of the above property until next May.

This letter was submitted by Mr. Dercum at my request for our records.

W. M. Traver, Jr.

enclosure

cc PTAllsman
AHKoschmann
DMA 1368X
DMA Chron.

C
O
P
Y

Max Dercum, Manager
Norway Lode Manganese Co.,
Montezuma Road,
Dillon, Colorado

November 16, 1951

Mr. W. M. Traver,
U. S. Bureau of Mines,
Bldg. 20, Denver Federal Center,
Denver 14, Colorado.

Dear Mr. Traver:

Thank you for your call of November 14. In reference to your inquiry as to whether it was possible to get in to the Norway Lode manganese deposits, this will inform you that as a result of the recent storms about three feet of snow now covers the range. As a result it would be impossible to inspect these properties at this time of year.

It has been our experience that some of this ground will be exposed enough for a surface examination some time in May; we will be glad to let you know when the snow goes off the range so that you can make plans to look the manganese prospects over at that time.

We hope that these deposits will warrant development in the near future; with the Glasier Milling Co. reduction mill being constructed at Montezuma by Andrew Sweet, et. al. the future of local manganese looks much brighter.

Yours very truly,

/s/ Max Dercum

Max Dercum

C
O
P
Y

224 New Customhouse
Denver 2, Colorado

October 30, 1951

Memorandum

To: A. H. Koschmann (with brochure)

(Through Chief, Mining Division, Region IV)

W. M. Traver

From: DMA Field Team, Region IV

Subject: DMA Docket 1368X, Max Derwan, applicant; Norway Manganese Ledge, Summit County, Colorado

Enclosed is the application of the subject docket and a review by the Coordinating Committee for an exploration loan of $1500.00.

The proposed work consists of trenching the outcrops with a bulldozer. This program would not explore any appreciable reserve of ore, and the applicant should be approached about sinking an inclined shaft.

Two samples of ore averaged 23.9 percent manganese with a zinc content of 2.3 percent, which is too high for use. The zinc content should be checked.

J. H. East, Jr.

A. H. Koschmann

Enclosures

WDM:oj
cc: DMA subject, chron.
AHKoschmann

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

224 New Customhouse
Denver 2, Colorado

August 20, 1952

Memorandum

To: Acting Administrator, Defense Minerals Exploration Administration, Attention: 210

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 13601X, Norway Lode Manganese Company, Summit County, Colorado

Enclosed are the original and three copies of the final report on DMEA 13601, the original and one copy of Form 3b, and a copy of the letter of denial to the applicant.

for W. H. King

A. H. Koschmann

Enclosures

cc: W.Traver w/copy final report
AHKoschmann w/copy final report
Mining Div. w/copy final report
DMEA Final Report

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Region IV

August 20, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 1368X, Norway Lode Manganese Company, Summit County, Colorado

Enclosed are eight copies of the final report on DMEA 1368X by C.M. Harrer of the Bureau of Mines.

The examining engineer concludes that the manganese outcrops probably represent a gossan cap over a small underlying sulfide deposit and recommends that the exploration assistance be denied.

We concur in this recommendation.

John F. Shea
for W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

Building 20
Denver Federal Center
Denver 14, Colorado

August 6, 1952

Mining Division
Date Rec'd.

AUG 8 - 1952

BUREAU OF MINES
Denver, Colorado

Memorandum

To: Executive Officer, Field Team, Region IV

From: Chief, Colorado Branch, Mining Division, Region IV

Subject: DMEA 1368X (Manganese), Norway Lode Manganese Company, Summit County, Colorado

Please find enclosed the original and eight copies of the "Summary, Conclusions, and Recommendations", by C. M. Harrer and D. R. MacLaren, and of Harrer's engineering report on the above docket.

Harrer, in his unnecessarily exhaustive engineering report, concludes from exposure and structural relationships which are not encouraging that the manganese outcrops probably represent a gossan capping over a small underlying sulfide deposit. Reserves are too small and low grade to be of economic importance and the loan requested is insufficient to explore the ore body properly. He recommends denial and I concur.

W. M. Traver, Jr.

W. M. Traver, Jr.

Enclosures

WMT/bam

cc: 8
DMEA 1368X
DMEA Chron.

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

August 19, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 1368X, The Norway Lode Manganese Claims, Summit County, Dillon, Colorado.

Attached are 8 copies of the geologic report by D. R. MacLaren covering DMEA Docket 1368X, The Norway Lode Manganese Claims, Summit County, Colorado.

The applicant has applied for a loan of $1500.00 to explore a vein of manganese and iron oxides by bulldozer trenching, and to build about 2 miles of access road suitable for the passage of a bulldozer and jeep.

Exploration work has been done at only 2 places on the subject property. At both places veins of manganese and iron oxide are exposed in shallow shafts. The vein material is vuggy. It carries small amounts of zinc and lead, and based on these features, MacLaren concludes that the exposures represent the shallow leached outcrop of a sulfide vein rather than a possible source of manganese ore. Although the proposed trenching may indicate the linear extent of the vein at the surface, it will not give any information as to depth of the oxidized vein or the changes in ore tenor. The operator is not prepared to spend the necessary funds to undertake ~~trenching~~ drilling or sinking a shaft. It is, therefore, recommended that this application for a loan be denied.

I concur in this recommendation.

The brochure is enclosed.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

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

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA 1368X, Norway Lode Manganese Company

Summit County, Colorado

Manganese

C. M. Harrer, Mining Engineer
Bureau of Mines

D. R. MacLaren, Geologist
U. S. Geological Survey

August 5, 1952

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

Summary, Conclusions, and Recommendations

By C. M. Harrer
Mining Engineer
Bureau of Mines

and

D. R. MacLaren
Geologist
U. S. Geological Survey

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By C. M. Harrer and D. R. MacLaren

Max Dercum, manager of Norway Lode Manganese Company, of Dillon, Colo., applied for a Defense Minerals Exploration Administration loan to explore for manganese on the Norway claims 1 to 4, inclusive. He proposed to construct about 2 miles of access trail for jeep and bulldozer entry, and trench the surface over the deposits with the bulldozer at various locations, at a total cost of $1,500.00, Government participation 75 percent.

The company has, since the examination, combined the Norway claims with other property near Montezuma, Colo., and incorporated under the laws of Colorado as the Chihuahua Mining and Milling Company.

Oxides of manganese and iron occur as lens-like bodies in fissure and shear zones in pre-Pennsylvanian sediments. The presence of zinc in the assays suggests the possibility of shallow zinc sulfides which implies a very limited vertical range of manganese-iron oxides in shallow, leached outcrops.

Meager exposures and the structural relationships on the Norway Lode Manganese claims are not encouraging for the development of important manganese reserves, and analyses of the ore indicate low-grade material. Contaminants, particularly zinc, make the ore unacceptable

metallurgically. Inaccessibility of the deposits and curtailed operating season would interfere with production. Lack of concentration facilities, distance from potential markets, and very high costs make this an unattractive venture.

Reserves based on geologic inference probably would not exceed 9,000 tons with an assay from the average of two samples by the applicant and two samples by the examining team of:

Percent											
Mn	Fe	SiO_2	Al_2O_3	P	CaO	MgO	BaO	S	Zn	Pb	Cu
24.2	23.7	8.9	1.30	0.03	1.10	1.62	0.09	0.07	2.29	<.10	<.05

< less than

A program of diamond drilling or shaft sinking to gain the information necessary for a complete appraisal of the property will cost considerably more than the applicant was prepared to invest at the time of the examination.

The application for an exploration loan of $1,500.00, docket DMA 1368X, by Max Dercum to explore the Norway Lode Manganese claims is recommended for denial.

THE NORWAY LODE MANGANESE CLAIMS

SUMMIT COUNTY

DILLON, COLORADO

DMEA DOCKET 1368X

Geologic Report

By D. R. MacLaren
U. S. Geological Survey

THE NORWAY LODE MANGANESE CLAIMS
DILLON, SUMMIT COUNTY, COLORADO

INTRODUCTION

Max Dercum, Manager of the Norway Lode Manganese Company of Dillon, Summit County, Colorado, has applied to the Defense Mineral Exploration Administration for assistance to explore for manganese on 4 claims in the Upper Blue River area, 9 miles southwest of Breckenridge, Colorado. The applicant proposes to build about 2 miles of access road suitable for the passage of a bulldozer and jeep, and to trench by bulldozer in order to explore a vein of manganese and iron oxides. The applicant estimates that the cost will be $1,500, the Government's share to be 75 percent or $1,125.

The Norway claims are in the Pollock Mining District, sec. 26, T. 7 S., R. 78 W., Sixth Principal Meridian, at an altitude of 11,500 to 12,00 feet (fig. 1). Due to long winters and heavy snowfalls, the property is accessible for only a few months of the year. It may be reached by traveling 6 miles south of Breckenridge on State Highway 9, then three-quarters of a mile along a narrow dirt road that leads up McCullough Gulch and is passable, with difficulty, in a jeep. The southern boundary of the property is about a mile beyond the end of the road.

It is concluded that this is a poor manganese prospect, and it is recommended that this application for a loan be denied.

GEOLOGY

The rocks in the Upper Blue River area, as mapped by Q. D. Singewald (1947), are pre-Cambrian gneiss, schist, and granite; pre-Pennsylvanian

quartzite, shale, and dolomite; and unconsolidated alluvium, moraine, and terrace gravel.

On the Norway No. 1 claim (fig. 2), pre-Pennsylvanian sediments, dipping slightly to the east, are cut by a fairly strong mineralized fissure that strikes N. 37° W. and dips 82° NE. Near the north boundary of Norway No. 1 claim, the sediments are in contact with pre-Cambrian rocks. The contact is obscured by overburden, but it is inferred to be a fault. Farther north, near the boundary between Norway No. 2 and No. 4 claims, a second inferred fault again brings the sediments into contact with the pre-Cambrian rocks.

Exploration work has been done at only two places on the claims. On Norway No. 4 claim, a shallow shaft is said to be on a vein of manganese and iron oxides. At the time of the inspection, the bottom of the shaft was full of snow and the walls were tightly cribbed so that no vein was seen. Adjacent to the shaft slightly stained fractures strike N. 20° W. and dip nearly vertically. On the dump a small pile of oxidized material, reportedly from the vein in the shaft, was sampled as a check of the assays submitted by the applicant. The assays are:

	Mn	Fe	Zn	Pb	Cu	S
Examiner's sample	24.4	27.4	0.7	0.1	0.05	0.1
Applicant's sample	22.7	21.7	2.3	nil	nil	0.07

On Norway No. 1 claim a shaft ten feet deep exposes a mineralized fissure zone, five feet wide, in which three irregular veins containing oxides of manganese and iron are separated by horses of sandy shale. The veins, vuggy to spongy in texture, vary from 2 to 8 inches wide, and make up about one-quarter of the fissure width. A sample of the vein material

was taken as a check of the assays submitted by the applicant. The assays are:

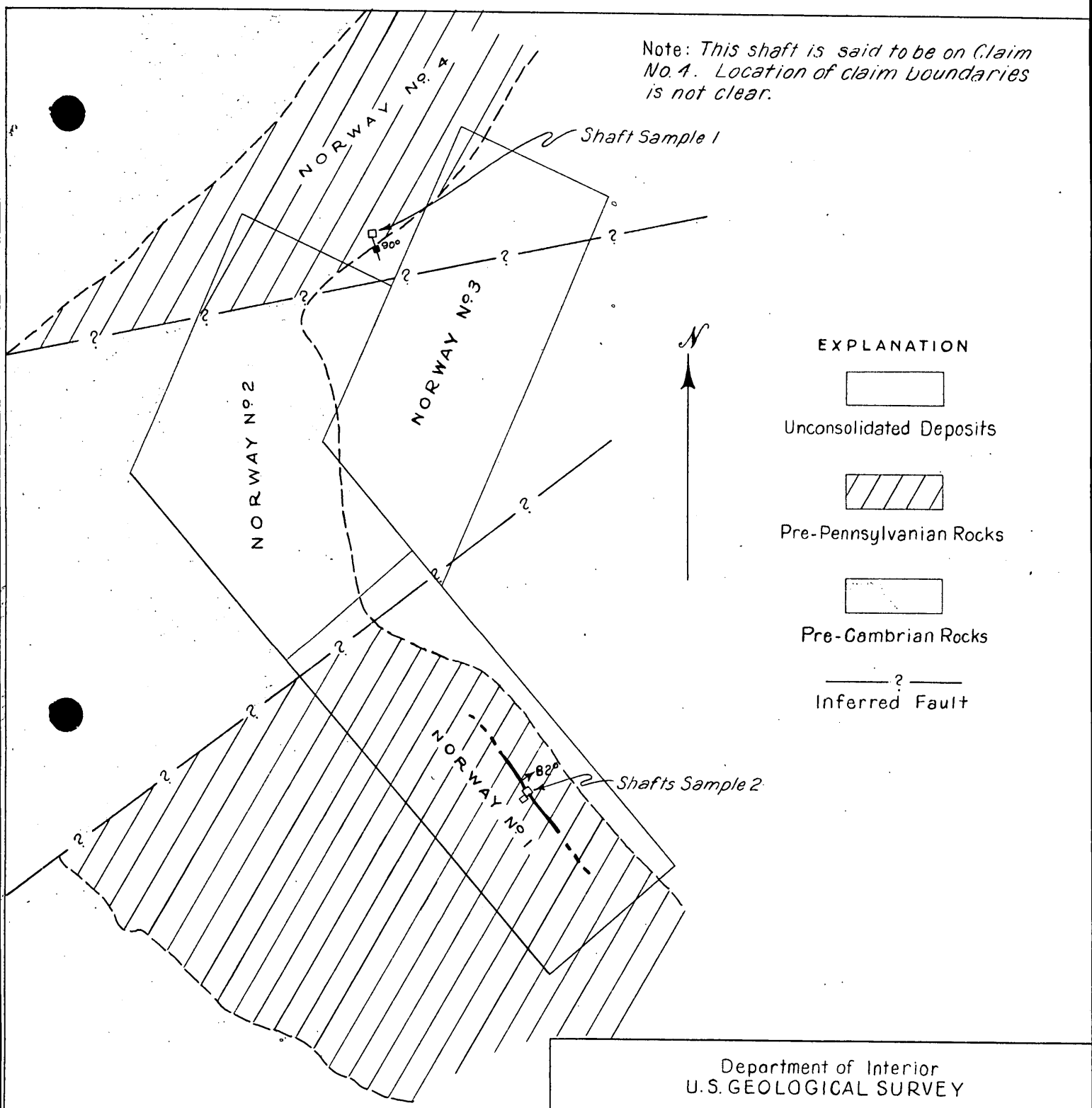
	Mn	Fe	Zn	Pb	Cu	S
Examiner's sample	24.6	22.8	3.85	0.1	0.05	0.1
Applicant's sample	25.1	23.0	2.3	nil	nil	Tr.

CONCLUSIONS AND RECOMMENDATIONS

Based on the vuggy texture and the high zinc content of the vein material, it is concluded that the exposure on the Norway No. 1 claim represents the shallow leached outcrop of a sulfide vein rather than a possible source of manganese ore. It is further concluded that although the proposed trenching may indicate the linear extent of the vein at the surface, it will not give any information as to the depth of the oxidized zone, or the changes in ore tenor that may be expected to take place in the sulfide zone. A program of drilling, or shaft sinking and drifting, such as would be needed to gain the information necessary for a proper appraisal of the value of this property will cost considerably more than the applicant was prepared to spend, at the time of the examination. It is therefore recommended that this application for a loan be denied.

REFERENCE

Singewald, Quentin D., Lode deposits of the Upper Blue River area, Summit County: State of Colorado mineral resources board, Mineral resources of Colorado, pp. 343-346, 1947.



Department of Interior
U.S. GEOLOGICAL SURVEY

NORWAY CLAIMS
Summit Co., Colo.

DMEA Docket 1368X

Claim map from applicant. Geology by D. R. MacLaren after Q. D. Singelwald

SCALE
500 0 500 FT.

July 1952

Fig. 2

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

Engineering Report

By C. M. Harrer
Mining Engineer
Bureau of Mines

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

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ILLUSTRATIONS

Figure — Follows Page

1. Location map, Norway Lode Manganese Company, Summit County, Colorado..... 2
2. Claim map, Norway claims, Summit County, Colorado..... *

* See figure following Geologic Report.

DMA 1368X

NORWAY LODE MANGANESE COMPANY
SUMMIT COUNTY, COLORADO

ENGINEERING REPORT

By

C. M. Harrer

INTRODUCTION

Max Dercum, a partner in the Norway Lode Manganese Company, of Breckenridge, Colo., applied in the fall of 1951 for a Defense Minerals Administration loan of $1,500.00 to explore the manganese possibilities of the unpatented Norway claims 1 to 4, inclusive, by bulldozing through an access trail and trenching the surface over the deposits in various locations. The property now forms part of the newly incorporated Chihuahua Mining and Milling Company, of Montezuma, Colo., with the same and additional officers.

Field examination of surface exposures on all four claims was made July 1, 1952, by an examining team of the Defense Minerals Exploration Administration.

ACKNOWLEDGMENTS

Max Dercum and R. F. Mackie accompanied the examining team as guides and furnished all information available on the property. Publications and maps of the U. S. Geological Survey, by Q. D. Singewald, were referred to for general geological information on the area.

LOCATION, TOPOGRAPHY, AND PHYSICAL FEATURES

The Norway Lode Manganese claims 1 to 4, inclusive, are in sec. 26, T. 7 S., R. 78 W., 6th P. M., Pollock Mining District, Summit County, Colo. (fig. 1), at altitudes ranging between 11,500 and 12,000 feet above sea level. The property lies across a rugged ridge between McCullough and Spruce gulches. At present there is no road or trail in to the property. Nearest access is from Breckenridge, south over Colorado State Highway 9 for 6.8 miles; thence west up McCullough Gulch 1.7 miles, and north for 1 mile to the property which is inaccessible for at least 5 months of the year under the best of conditions due to the high altitude, extreme cold, and heavy snows.

HISTORY AND PRODUCTION

Early history of the property is unknown. Two shallow shafts on the Norway No. 1 claim and one on the Norway No. 4 claim and the lack of an access road indicate that no manganese or other ore was removed from the property except as samples.

OWNERSHIP AND EXTENT

The property consists of four unpatented mining claims known as the Norway Lodes Nos. 1 to 4, inclusive, formerly owned in partnership by Max Dercum, Dillon, Colo., R. F. Mackie, Breckenridge, Colo., and R. C. Brown, Royal Oak, Mich.

Since the application for exploration assistance was made, the owners have incorporated these claims with others in the vicinity of Montezuma, Colo. The company is now known as the Chihuahua Mining and

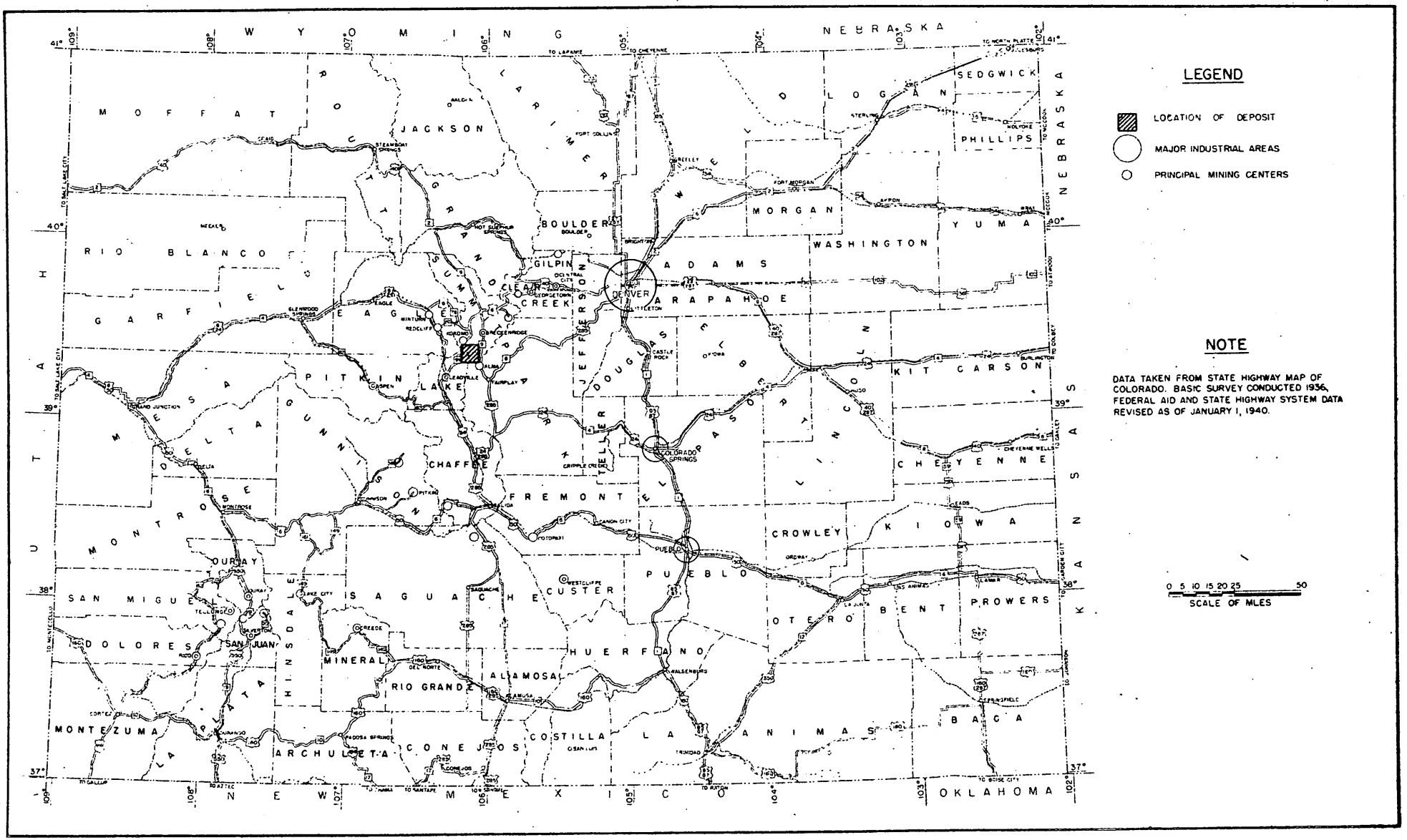

Figure 1. Location Map, Norway Manganese Lode Company, Summit County, Colorado, IMEA 1368X

Milling Company and is capitalized for $100,000.00 under the laws of the State of Colorado.

Officers are:

Max Dercum	Dillon, Colo.,	President
D. E. Leonard	Loveland, Colo.,	Vice President
Edna Dercum	Dillon, Colo.,	Secretary-Treasurer
R. F. Mackie	Breckenridge, Colo.,	Director
R. C. Brown	Royal Oak, Mich.,	Director

DESCRIPTION OF THE DEPOSITS

Manganese and iron oxides occur as fissure filling in nearly vertical shear zones in flat lying pre-Pennsylvanian limy sandstones. Outcrops are widely separated and apparently not connected, and are on opposite sides of a rugged ridge between McCullough and Spruce gulches. Surface exposures are traceable for very short distances due to almost complete masking by soil, glacial debris, and talus. Manganese is most prominently exposed in a shallow shaft on the Norway No. 1 claim. This exposure consists of narrow bands of iron and manganese oxides in limy sandstone. The accessible face was 7 feet wide and 10 feet deep. About 25 percent of the face is estimated as low-grade manganese ore. The ore zone strikes about N. 37° W. and dips 82° E. A shallow pit to the southwest shows very weak mineralization with staining. There is no other observable evidence of manganese on the claim.

The Norway No. 2 claim exhibits manganese and iron oxides as float in a talus slide near its northern boundary.

The Norway No. 3 claim shows no evidence of manganese.

The Norway No. 4 claim exposes manganese-iron oxides as float near its boundary with the Norway No. 2 claim, and a narrow shear zone

exhibits the same type of manganese-iron occurrence as exposed on the Norway No. 1 claim. The shear zone strikes roughly N. 20° W. and dips vertically. A small adjacent prospect shaft was inaccessible.

Development to date, as shown on figure 2 accompanying the geologic report, is very meager and insufficient for conclusive geologic analysis. The presence of excessive zinc in the concentrations of manganese and iron oxides and traces of lead and copper indicates that they may form the gossan over small zinc sulfide deposits.

The deposits appear to have very limited strike extent, and extension down the dip in the oxide zone is believed to be considerably less than 100 feet. As a consequence, the deposits would probably develop only very small reserves of manganese ore unacceptable in quality.

SAMPLING

Character samples of the ore by the applicant and by the examining team, separately, indicate comparable results. The former were analyzed by the Colorado Fuel and Iron Corporation, of Pueblo, Colo. Check samples numbers 1 and 2 taken by the examining team, shown on figure 2 with the geological report, were taken from the only exposures on the property. They and the applicant's samples were taken from the same approximate locations and the assays correspond with reasonable closeness. Analyses are in more detail than would ordinarily be required, to furnish information regarding the character of mineralization and to determine if the widely separated exposures were entirely similar petrologically and to conform with analyses submitted by the applicant.

Sample Data

Sample No.	Mn	Fe	SiO_2	Al_2O_3	P	CaO	MgO	BaO	S	Zn	Pb	Cu	Sample Location Figure 2
	Percent												
1 (Applicant)	25.1	23.0	8.2	1.0	0.026	1.1	1.9	nil	Tr.	2.3	nil	nil	2
1 (DMEA)	24.6	22.8	6.4	1.2	.02	1.4	1.65	0.06	0.1	3.85	<.1	<.05	2
2 (Applicant)	22.7	21.7	12.7	1.8	.074	1.1	1.8	.2	.7	2.3	nil	nil	1
2 (DMEA)	24.4	27.4	8.2	1.2	.01	.8	1.15	.03	.1	.7	<.1	<.05	1
Average	24.2	23.7	8.9	1.3	0.03	1.1	1.62	0.09	0.07	2.29	<.1	<.05	

MINEABLE ORE RESERVES

There are no mineable ore reserves available under the status of present development which classes the property as a border line prospect.

Reserves based on geologic inference probably would not exceed 9,000 tons of manganese-iron oxide ore assaying about as shown in the average shown under sampling.

Assumptions:

$$\frac{1{,}400 \text{ feet length} \times 5 \text{ feet width} \times 100 \text{ feet depth}}{10 \text{ cubic feet per ton}} = 70{,}000 \text{ tons vein matter}$$

70,000 tons x 1/4 (ore in vein) = 17,500 tons crude ore in vein

17,500 tons x 1/2 (sorting factor) = 8,750 tons possible shipping ore

PRESENT STATUS

Exploration and Development

Exploration is limited to two shallow shafts on the Norway Nos. 1 and 4 claims shown on figure 2 with the geologic report. They expose low-grade manganese and iron oxide mineralization insufficiently developed to indicate its extent.

Equipment and Facilities

There is no surface plant or any equipment on the property and no access road to it.

PROJECT PROPOSALS WITH COSTS

The applicant, Max Dercum, proposed to construct about 2 miles of exploration access bulldozer trail to the property and develop the Norway group of claims by trenching outcrops with a bulldozer to determine their extent. He estimated the work could be completed

within 12 working days at a cost of $1,500.00.

Dercum's estimate is about correct to determine surface extent and whether further exploration is justified. It does not, however, add anything to information on the size of the deposit or its character which can only be determined by a combination of trenching and diamond drilling or by underground development.

PROPOSED FINANCING

The partners proposed furnishing their services as:

Supervisor at $15.00 per day
Bulldozer operator at $14.80 per day
Miner at $12.00 per day

In addition, they would furnish an Allis Chalmers HD-10 bulldozer at $64.00 per day and a jeep at $8.00 per day, supplies and tools to be purchased by them as required.

CONCLUSIONS

Meager exposures and the structural relationships on the Norway Lode Manganese properties are not encouraging for the development of important manganese reserves, and analyses of the ore indicate low-grade material and contaminants, particularly zinc, making it unacceptable metallurgically.

In addition, the inaccessibility of the deposits and curtailed operating season would interfere with production.

If the ore were acceptable, lack of concentration facilities, distance from potential markets, and high costs make this an unattractive venture.

Reserves based on geologic inference, totaling 9,000 tons, would require costly exploration, development, mining, and sorting charges to substantiate and bring into production. They are too unimportant and low grade to justify even the small loan requested.

The zinc content and traces of lead and copper accompanying the manganese and iron encourage the belief that exposures are the gossan over probable small zinc sulfide deposits. Their development would require construction of an access trail and diamond drilling or shaft sinking operations.

RECOMMENDATIONS

The application for an exploration loan of $1,500.00, docket DMA 1368X, by Max Dercum, to explore the Norway Lode Manganese claims for manganese is recommended for denial.

bam