DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. ~~2087~~

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as

EXPLORATION LOAN

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip
CODE 370

To: Ind. Minerals Date 9-19-51

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March 31, 1952

Memorandum

To: Mr. Robert E. Adams, Administrative Officer

From: Lawrence G. Houk, Chief, Non-Metallic Minerals Division

Subject: Status of Pending Applications

The following applications have been sent a thirty-day letter, and the time has expired for their reply:

DMEA-1859	DMEA-2198
2087	2303
2120	
2122	

The above cases are to be considered closed, and the dockets are herewith returned.

The status of the other pending applications is given in the attached memorandum.

Lawrence G. Houk, Chief
Non-Metallic Minerals Division

LGHouk:gad

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
Washington 25, D. C. 600

BL

March 31, 1952

Memorandum

To: Mr. Robert E. Adams, Administrative Officer

From: Lawrence G. Houk, Chief, Non-Metallic Minerals Division

Subject: Status of Pending Applications

The following applications have been sent a thirty-day letter, and the time has expired for their reply:

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2087	2303
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The above cases are to be considered closed, and the dockets are herewith returned.

The status of the other pending applications is given in the attached memorandum.

/s/ Lawrence G. Houk
Lawrence G. Houk, Chief
Non-Metallic Minerals Division

FILE COPY
SURNAME:

Robertson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C. 600

FEB 18 1952

Mr. R. N. Howton
Vice President, Howe Mining Company
Florence, Montana

Subject: Docket No. DMEA-2087 - Fluorspar
Lucky Jack, et al Claims

Dear Mr. Howton:

On October 5, 1951, we wrote requesting additional information respecting your exploration project application, DMEA-2087.

Without having the information requested, it is impossible to proceed with the case. Inasmuch as several months have elapsed, we infer that you are no longer interested. Unless we hear from you within thirty days, we will consider the docket closed.

Sincerely yours,

E. L. FEB 18 1952

SIGNED

Lawrence G. Houk, Acting Chief
Non-Metallic Minerals Division
Defense Minerals Exploration Administration

JTRobertson:gad
2/15/52

Copy to: Region II (2)
Admin. Reading File
Docket File
Mr. H. W. Davis, 3519
Mr. Van Alstine, G-232, GSA Bldg.
Mr. Houk

BL

FILE COPY
SURNAME:

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

Worley Barry

OCT 5 1951

370

OCT 5 1951

Mr. R. N. Howton, Vice President
Howe Mining Company
Florence, Montana

Subject: DMA-2087
Fluorspar

A. E. C.

Dear Mr. Howton:

Regarding your application for aid for an exploration project on fluorspar deposit in Mineral County, Montana, docketed as DMA-2087, additional information is necessary to enable processing.

The following numbers refer to questions on Form MF-103, subject application:

3) List the five largest stockholders of the corporation.

7) State whether lease is in good standing. It will be necessary to furnish Landlord's Subordination Agreement, Form MF-202, executed in sextuplicate.

8) Why is no financial statement available? Is the corporation in good standing?

9) How much money is applicant prepared to invest in proposed project?

10b) Furnish a legal description of the area upon which the exploration will be conducted. In the case of unpatented claims furnish date of recording, office, book and page of recording.

21) Describe the proposed exploration in more detail as follows:

a) Number of trenches proposed, their approximate lengths and location. It would be desirable to furnish a map of the proposed work.

b) Approximate location, direction and depths of proposed drill holes supported by a map or sketch. Size of core contemplated.

23) e) Describe necessary repairs and detail costs. Describe road work needed.

f) What size bulldozer is contemplated? Does rental include fuel, repairs, etc? This same information should be furnished with respect to compressor and pickup truck listed.

g) Rental on existing facilities (fixtures and improvements) is not an allowable charge against the project.

h) Furnish basis for estimating diamond drilling cost. A letter commitment from a reliable contractor would be desirable.

Further consideration of your proposal may or may not include referral to the Field Team.

Sincerely yours,

SIGNED 10/5

James A. Barr, Sr., Chief
Industrial Minerals Branch

Enclosures

RWASKEY:esf
10/4/51
cc: Field Team, Region V (2)
DMA Docket File
Admr. Reading File
Mr. Barr

IN REPLY REFER TO:

G-MD-REVA

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

Memorandum

September 25, 1951

To: James A. Barr, Sr., Chairman
Nonmetallics Commodity Committee

From: Ralph E. Van Alstine
Nonmetallics Commodity Committee

Subject: DMA-2087, R. N. Howton, Howe Mining Company, Florence, Montana, request for assistance with fluorspar exploration project to cost $61,000.

This application is a revision of DMA-40, which was a request for $60,000 that involved the same area and the same Mr. Howton, then of The Superior Fluorspar Corporation. The earlier proposal was to drive a tunnel, however, and not trenching and diamond drilling. The data submitted by the applicant are so incomplete and confusing that the application cannot be evaluated in its present form. The applicant does not state the precise location, extent, and purpose of the proposed exploration.

Evidently the applicant has control of only one of the three fluorspar deposits in this area, in spite of the fact that three are mentioned in the application. The accompanying reports submitted by the applicant state that Coeur d'Alene Extension Mines, Inc., former owner of the deposits, leased the three fluorspar deposits as follows:

(1) Spar fluorspar prospect between Bear Creek and Dry Creek - leased to Jay Bettles according to reports (p. 2 of first report and p. 3 of second) accompanying the application. When I visited this property in August, 1951, Dr. Mason of Riverside Copper Mining Company, who was continuing exploration work there, told me that he holds a 10-year lease from Coeur d'Alene Extension Mines, Inc., and that he was well ahead of the work schedule required in the terms of the lease.

(2) Magi claim of Montana Fluorspar lease between Lime Gulch and Dry Creek - leased from Coeur d'Alene Extension Mines, Inc., by McGee, Scott, Voltolini brothers, etc., according to p. 4 of the second report submitted by the applicant. The seven claims listed as covering this prospect are not among the ten claims on which exploration might be done, as listed in the supplement to the application.

(3) Wilson Creek or Lucky Jack prospect between Wilson Creek and Dry Creek -- held by Jay Bettles, etc., on a 10-year lease, according to p. 7 of second report submitted by applicant. However, applicant shows the Lucky Jack claim among the 10 claims he controls (p. 1 of supplement and January 10, 1951, lease assignment). Presumably the application should be restricted to this prospect only, as fluorspar is not said to occur in any of the other 9 claims listed by the applicant.

The following comments are made on the applicant's replies to questions on form MF-103:

(3) The five largest stockholders are not shown.

(4a) Describe oil and mining company experience mentioned?

(5) Lessee - see above comments about leasing of fluorspar prospects in this area.

(8) No financial statement is provided.

(9) Not answered - Is applicant prepared to provide $30,500, his half of the cost?

(10) Claim maps are needed showing the locations of the fluorspar prospects.

(15) Evidently metallurgical-grade fluorspar is regarded as the only product from the property. If reserves warrant it, consideration might be given to financing a mill to produce metallurgical-grade and possibly acid-grade fluorspar.

(16 a and b) Not adequately answered in application.

(18) Attached reports referred to do not contain geologic or mine maps, and statements about reserves here are not impressive.

(21) Proposed exploration is not described in sufficient detail.

(22) The geological basis of the project is not shown in the application and accompanying reports.

It is suggested that the additional data be supplied by the applicant before the field team or Washington offices attempt to process this application any farther.

R. E. Van Alstine

R. E. Van Alstine
Nonmetallics Commodity Committee

IN REPLY REFER TO:

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

C-A-[illegible]

Memorandum September 25, 1951

To: James L. Barr, Sr., Chairman
Nonmetallics Commodity Committee

From: Ralph L. Van Alstine
Nonmetallics Commodity Committee

Subject: [illegible]A-2087, [illegible] E. Newton, Howe Mining Company, Florence, Montana, request for assistance with fluorspar exploration project to cost $61,000.

This application is a revision of [illegible]A-40, which was a request for $60,000 that involved the same area and the same Mr. Newton, then of The Superior Fluorspar Corporation. The earlier proposal was to drive a tunnel, however, and not trenching and diamond drilling. The data submitted by the applicant are so incomplete and confusing that the application cannot be evaluated in its present form. The applicant does not state the precise location, extent, and purpose of the proposed exploration.

Evidently the applicant has control of only one of the three fluorspar deposits in this area, in spite of the fact that three are mentioned in the application. The accompanying reports submitted by the applicant state that Coeur d'Alene Extension Mines, Inc., former owner of the deposits, leased the three fluorspar deposits as follows:

(1) Spar fluorspar prospect between Bear Creek and Dry Creek - leased to Ray Detlea according to reports (p. 2 of first report and p. 3 of second) accompanying the application. When I visited this property in August, 1951, Mr. Mason of Riverside Copper Mining Company, who was continuing exploration work there, told me that he holds a 10-year lease from Coeur d'Alene Extension Mines, Inc., and that he was well ahead of the work schedule required in the terms of the lease.

(2) Bagi claim of Montana Fluorspar lease between Lime Gulch and Dry Creek - leased from Coeur d'Alene Extension Mines, Inc., by Rolles, Scott, Veltolini Brothers, etc., according to p. 4 of the second report submitted by the applicant. The seven claims listed as covering this prospect are not among the ten claims on which exploration might be done, as listed in the supplement to the application.

(2) [illegible] or [illegible] the prospect [illegible] [illegible] and [illegible] -- held by lay [illegible], etc., on a 21-year lease, according to p. [illegible] of second report submitted by applicant. However, applicant states to Jacob Jack claim along the 10 claims he controls (p. 1 of supplement and January 16, 1951, letter assignment). Therefore the application should be restricted to this prospect only, as fluorspar does not seem to occur in any of the other 9 claims listed by the applicant.

The following comments are made on the applicant's replies to questions on form [illegible]-103:

(3) The five largest stockholders are not shown.

(4a) Describe oil and mining company experience mentioned.

(5) Leases -- see above comments about lenses of fluorspar prospects in this area.

(6) No financial statement is included.

(9) Not answered -- the applicant proposes to provide $20,500, the half of the cost.

(10) Claim maps are needed showing the locations of the fluorspar prospects.

(15) Evidently metallurgical-grade fluorspar is regarded as the only product from the property. If reserves warrant it, consideration might be given to financing a mill to produce metallurgical-grade and possibly acid-grade fluorspar.

(16 a and b) Not adequately answered in application.

(18) Attached reports referred to do not contain geologic or mine maps, and statements about reserves here are not impressive.

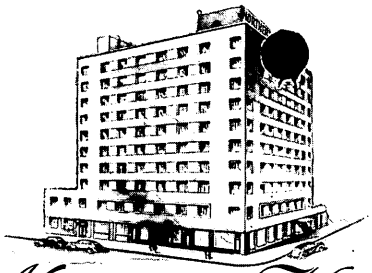
(21) Surface exploration is not described in sufficient detail.

(22) The geological basis of the project is not shown in the application and accompanying reports.

It is suggested that the additional data be supplied by the applicant before the field case or Washington offices attempt to process this application any further.

[illegible] Van Alstine
Domestic Agricultural Commodity Committee

R.Van Alstine:jah
G-9/25/51
copy to: Director's Pending file, 4212
Branch Reading file 4212
BAA files
[illegible] Davis, Bureau of Mines
R.R. Van Alstine, U.S.G.S.
J. J. Norton, U. S. G. S.



Northern Hotel
300 ROOMS
Billings Mont.
"One of the Aristocrats of the West"

Florence, Montana
Sept. 13-1951

OFFICIAL FILE COPY

To	Init.	Date
210		

Sept. 13, 1951

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

DMA-2051

Gentlemen:

Enclosed are four copies of form MF-103 in compliance with your letter of Aug. 24, 1951, in connection with application DMA #40.

Sincerely yours

R. N. Howton

R. N. Howton
Vice-President
Howe Mining Co.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

ANOTHER CARTER HOTEL
"RAINBOW HOTEL, GREAT FALLS, MONTANA"
"HOTELS OF UNUSUAL SERVICES"
"THE NORTHERN HOTEL IS NOW AFFILIATED WITH WESTERN HOTELS"

Mr. R. N. Howton, Vice President
Howe Mining Company
Florence, Montana

Subject: DMA-2087
Re: Exploration Loan
Superior Fluorspar Company

My Dear Mr. Howton:

This will acknowledge receipt of your application dated September 13, 1951 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMA-2087 and referred to the Industrial Minerals Branch.

Kindly refer to DMA-2087 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams

Robert E. Adams, Chief
Reports and Records Unit

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 #40

Date received

Participation

R. N. Howton
Vice President
Howe Mining Company
Florence, Montana

Name and address of applicant

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

Date September 13, 1951

FILL IN THIS BLOCK

Date of application September 13, 1951

Estimated cost $61,000.00

Mineral or metal Fluorspar

Percentage of Government participation

Location of mine Mineral County, Montana

Date of filing MF-100

DMA Docket Number, if available

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? Corporation

* *2. If a partnership, state names and addresses of partners.

* *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? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property.

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

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. None available

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)?

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

16—64067-1

* See supplementary sheets

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.

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

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.

* *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.

* *14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

* 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.

*17. Production: Mine is not in production

(*a*) If mine is in production, furnish the following information:

	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.) See private reports attached

(*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.

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?

* 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.

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.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*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.

(*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.

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.

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.

Howe Mining Company
(Name of company)

By P. M. Howton
(Signature of authorized official)

September 13, 1951
(Date)

Vice-president
(Title)

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

*Same as footnote on page 1.

* See supplement

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

Mineral Land Leasing Act Questionnaire

By A. N. Keeton - Nevada Mining Company

3. Ivy Clark, President, Belfry, Montana
A. N. Keeton, Vice President, Florence, Montana
W. L. Silvex, Secretary, Treasurer, Belfry, Montana

4. (a) The applicant has been connected with oil and mining companies in an administrative capacity for more than twenty years.

(b) A qualified mining engineer will be employed to supervise the project.

10. (a) The property consists of the following ten (10) unpatented lode mining claims:

Black Jack #1	Nova
Black Jack #2	Jupiter
Mercury	Venus
Lucky Jack	Mars
Silvex	Saturn

They are located in Sections 15 and 22, T. 17 N., R. 26 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Wilson Creeks in Mineral County, Montana.

(b) Same as above

11. The property now known as the Superior Fluorspar Company's property was formerly owned by Oscar A. Stone Stonestown Mining Company.

12. The property is located about nine airline miles west of Superior, Montana. Access roads to Superior and the Northern Pacific and the Chicago, Milwaukee, St. Paul and Pacific Railroad, the nearest shipping point, consist of about one mile of graded dirt road from the property to a well maintained U.S. Forest Service road. The total distance to Superior by road is about 13 miles. The road connecting the mine and the Forest Service road has steep grades.

13. A number of streams drain the district and have an abundance of water for operating and domestic purposes at all seasons of the year.

Electric power is available about 6 miles north of the property.

[illegible]

By [illegible] - [illegible] Mining Company

14. [illegible] complete equipment [illegible] on the property, including [illegible] shop, bunk houses, cook house and several other buildings. They will be devoted to the exploration work.

15. The ore could be shipped by railroad with a truck haul of about 15 miles to Superior, Montana. Both the Northern Pacific and [illegible] railroads serve the area. No milling is contemplated.

16. See attached reports by Walter G. Fraham, [illegible] Ph.D. Geologist and Kyle [illegible] Myers, Northern Pacific Geologist.

20. The exploration will be conducted to determine the extent, quantity and grade of timber available.

21. The proposed work consists of open trenches across the vein cut to a depth of not less than ten feet into the undisturbed vein material and diamond drilling. It is estimated that the work can be completed within eighteen months after the contract has been approved.

22. See attached reports contained in 16 above.

23. Summary of Cost

(a)	Labor	$ 6000.00
(b)	Supervisors	2000.00
(c)	Repairs to existing facilities	2000.00
(d)	Cost of rental of equipment	7000.00
(e)	Rental value of facilities and equipment owned by operator	1000.00
(f)	Cost of materials and supplies including items of equipment costing less than $20.00 and diamond drilling contract	38,000.00
	Total	$61,000.00

Statement of Material and Equipment [illegible]

By A. W. Horton - Dove Lining Company

27. (a) Labor

1 Dozer operator	4 mo.	$600.00 per mo.	$ 2400.00
1 Miner	4 mo.	450.00 per mo.	1800.00
1 Laborer	6 mo.	300.00 per mo.	1800.00
			$ 6000.00

(b) Supervisors

Supervisor - engineer	6 mo.	$600.00 per mo.	$ 3600.00

(c) Cost of necessary repairs to existing facilities including access road and camp $ 5000.00

(d) Cost of necessary installations or construction of additional facilities 0

(e) Cost of items of equipment not now owned by the applicant which must be purchased for operations at a cost of $50.00 or more each 0

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

Cat and dozer	4 mo.	$1200.00	$ 4800.00
Compressor	4 mo.	300.00	1200.00
Jackhammer	4 mo.	35.00	140.00
Pickup truck	6 mo.	150.00	900.00
			$ 7040.00

(g) Rental value of items of equipment now owned by operator
Rental and maintenance of existing buildings; and blacksmith shop and equipment $ 1000.00

(h) Cost of materials and supplies

Dynamite and detonators		$ 2000.00
Fuel, grease, etc for equipment		6000.00
Move in and out of equipment		1000.00
Use pipe 2000 @ $3.00		6000.00
Diamond drilling contract 3000 ft.	@7.00	21,000.00
Misc. and contingencies		2000.00
Total		$ 38,400.00

[illegible]

By [illegible] - [illegible] Mining Company

24. Time schedule

(Assuming work on the project is initiated May 1, 1952)

May 1952 Move in and accomplish necessary engineering and rehabilitation of camp	$ 10,000.00
June 1952 Excavate trenches and drill	11,000.00
July 1952 Continue excavation and drilling	10,000.00
August 1952 Continue excavation and drilling	10,000.00
September 1952 Continue excavation and drilling	10,000.00
October 1952 Move out equipment, complete sampling and assaying and prepare report	10,000.00

C
O
P
Y

SUPERIOR FLUORSPAR COMPANY
FORMERLY
COLOR BLAND EXTENSION MINING COMPANY
SECTIONS 25 & 26, T. 17 N., R. 28 W.
SECTIONS 30 & 31, T. 17 N., R. 27 W.
NEAR SUPERIOR, MINERAL COUNTY, MONTANA

INTRODUCTION

Mr. George W. O'Connor of Fromberg, Montana, directed the attention of the Geological Department to the Superior Fluorspar Company. Mr. O'Connor is planning on doing some mining and development work on their property and desired geological advice before doing so.

LOCATION AND PHYSICAL FEATURES

The Superior Fluorspar Company's property consisting of 28 unpatented claims is located in Sections 25 and 26, T. 17 N., R. 28 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Wilson Creeks nine airline miles west of Superior, Mineral County, Montana. (See Index Map). The property, at an approximate elevation of 4000 feet above sea level is in the rugged mountainous regions characteristic of western Montana near the Idaho boundary. Steep mountain slopes afford many sites suitable for development through tunnels. The area, although denuded of timber by the fire of 1910, is now heavily mantled with small trees and underbrush, and will supply sufficient timber for a small mining operation. A number of streams drain the district and would provide an abundance of water for mining and domestic purposes. A dirt road with steep grades and in poor condition, extends from the mine, one mile down Wilson Creek to join a well maintained Forest Reserve road at a point 12 miles from the oiled highway, U.S. No. 10, at Superior.

This town is the county seat and nearest source of supplies. Electric power is available 6 miles north of the mine. The northern Pacific Railway and the Chicago, Milwaukee and St. Paul Railway serve the area.

History and Ownership

The Superior Fluorspar Company was formerly known as the Coeur d'Alene Extension Mining Company and development work by the latter company, located on Bear Creek was examined by members of the Geological Department in August 1945. (See Report No. C-117). The present mine workings are located on Wilson Creek approximately one mile east of the older development.

According to the Mining World Directory, dated May 1911 the officers of the Coeur d'Alene Extension Mining Company, Wallace, Idaho are: Perry J. Kelly, President; A. E. Newton, General Manager; William Clark, Vice President and James E. Scott, Manager. Frank Clark is listed as manager of the Superior Fluorspar Company, Superior, Montana. The Coeur d'Alene Extension Mining Company was originally incorporated with 5,000,000 assessable shares of stock having a par value of one cent with a total value of $50,000.00. Their ownership is said to consist of 30 patented claims located in the Dry Creek drainage near Superior, Montana. In 1940 and 1941, the claims were leased by A. Jay Bettles who is reported to have mined and shipped 810 tons of fluorspar averaging about 96% CaF2 for which he received $22.50 a ton f.o.b. Seattle, Washington. The total production, all from the present workings is reported as nine cars of fluorspar. The Riverside Copper Mining Company, Wallace, Idaho, is said to have sub-leased 16 claims from Jay Bettles in 1944 and 1945.

C O P Y

Dr. T. R. Mason, Kellogg, Idaho, a large stockholder in the Coeur D'Alene Extension Mining Company was president and D. A. Callanan, Wallace, Idaho, was secretary of the company at that time. The company is capitalized with 2,000,000 assessable shares with par value at 5 cents, 789,530 shares have been issued. Their ownership consists of 5 patented claims in the Little North Fork district near Kellogg, Idaho. The property has been idle for some time.

GEOLOGY AND DEVELOPMENT

Pre-Cambrian sediments of the Newland (Wallace) Formation, Belt Series Algonkian Age is the country rock in the vicinity of the Superior Fluorspar Company's property. The general strike of the beds is N. 10°- 20° W. with a 50° northeast dip. A shallow open cut and a short tunnel, now caved, comprise the development work. A short raise and stope extends from the tunnel to the bottom of the south end of the open cut. These workings are shown on the accompanying sketch map. The open cut, 65 feet long, 10 to 20 feet wi wide, and 6 to 8 feet deep was sunk upon an irregular vein, 2 to 10 feet wide of fluorspar occurring in a narrow bed of impure limestone interbedded in argillite. The vein is variable ranging from 2 feet wide in the north end of the cut to 4 feet wide in the south end with irregular enlargements up to 10 feet or more wide in between. Accompanying the veins are a number of small seams and veinlets of fluorspar. The mineralization, consisting of fluorite, calcite and quartz follows the bedding of the limestone and is concordant in dip and strike. Surface drag, due to the steep slopes (30°-42°) has broken and distroted the dip of the structure in the open cut.

COPY

In places brecciated fragments of the limestone bed, partly replaced and surrounded by fluorite, occurs. The fluorite is generally of the green and purple variety and becomes colorless or bleaches to white upon exposure to sunlight. The main impurity is calcite occurring as tiny seams and veinlets in the fluorspar. Selective mining and sorting would be necessary to obtain a shipping grade product. The limestone bed with occasional fluorspar "float" is traceable for 1/4 mile or more along the strike and probably is the same bed that was prospected near Bear Creek. The deposit appears to have been formed through bedding plane fissuring followed by vein filling and replacement of a favorable limestone bed by solutions from a deep seated magmatic source. Deposition was probably influenced by local structure and by the composition and texture of the enclosing rock.

FLUORSPAR

Fluorspar is material that contains sufficient fluorite to be of commercial value. Fluorite (CaF_2) is calcium fluoride and contains 51.1% calcium and 48.9% fluorine. It is the only common fluoride occurring in nature. Fluorspar, depending upon its use is classified into four grades; metallurgical grade, acid grade, ceramic grade and optical grade.

Metallurgical grade comprises about 50.0% of the total United States consumption with the steel industry being the predominant ~~mx~~ user. Specifications for this grade are 70.0% or more effective fluorite with less than 5.0% silica and not more than 0.05% sulphur. It is used as a flux in making steel, ferro alloys, nickel, brass and in foundries making high grade iron castings. It is also used to refine several nonferrous alloys.

Acid grade comprises about 28.0% of the total consumption with most of it used in the manufacture of hydrofluoric acid. Specifications for this grade require 97.0% fluorite and less than 1.0% silica. Barite, lead, zinc, lime and iron are other undesirable impurities that interfere with the manufacture of acid. A large portion of the acid produced is used in making artificial cryolite for the aluminum industry and in processing high octane gasoline. Other uses are in the chemical industry to produce Freon refrigerant, Aerosol insectitide and other chemicals.

Ceramic grade comprising about 15.0% of the total consumption must contain 95.0% or more fluorite with less than 2.5% silica. It must be colorless and contain traces only, of iron, lead, zinc, and other impurities. Its chief use is in the glass industry in the manufacture of opalescent, opaque and colored glass and enamels. Other uses are in making brick facings, vitrolite and Portland cement. It is also used as a bonding agent for emery wheels, carbon electrodes and for certain electric arc welding electrodes.

Optical grade comprises only a minor part of the total consumption. It must be absolutely clear, free of cloudiness or inclusions and contain no cracks or cleavage marks. It may have a slight color. To be commercial the rough pieces should be large enough to cut into clear pieces having a minimum diameter of ½ inch. It is used to correct color and spherical aberrations in small microscopes and telescopes. Artificial lithium flouride (made from acid grade fluorspar) is also used for the same purpose.

Western Kentucky and southern Illinois are the principal sources of fluorspar in the United States. In 1950 consumption was

was about 600,000 short tons with approximately 1/4 of the total being imported. Mexico is the chief importer with small amounts received from Spain, Germany, Italy and Newfoundland. The Federal Government has placed fluorspar on the list of strategic and critical materials for stockpiling. Consumption is expected to increase and to beat all previous records in 1951.

Present prices as listed in the May 1951 issue of the Engineering and Mineral Journal are as follows: Metallurgical grade fluorspar with 70.0% or more effective fluorite is quoted at $43.00 a short ton f.o.b. Illinois-Kentucky mines. Acid grade fluorspar containing 97.0% fluorite is listed at $50.00 a short ton f.o.b. Illinois mines.

Most large consumers buy on contract, specifying a definite tonnage containing a minimum fluorite content and with maximum impurities defined. Most of the fluorspar of commerce is handled through sales agencies or brokers that deal in other raw materials used in the steel, iron, ceramic and chemical industries, and therefore are in close contact with the consumers. Their usual commission is 5.0% of the f.o.b. price.

CONCLUSION

On the Superior Fluorspar Company's property, a small vein of fluorspar accompanied by irregular replacement of favorable country rock occurs in a narrow bed of limestone interbedded in argillite of the Newland (Wallace) Formation, Belt Series of Algonkian Age. At the present time there is insufficient development to estimate the size and extent of the oretody. The limestone bed with occasional fluorspar float is traceable for 1/4 mile or more along the strike.

and it seems reasonable that it will correlate with a similar bed exposed one mile west in the Bear Gulch area. However, the occurrence of minable bodies of fluorspar within this unprospected gap is a matter of conjecture and will require additional development. The access road and mine workings are in poor condition and will require a small expenditure for rehabilitation. A large or even moderate tonnage operation is not practicable with the present development and more work will be necessary to bring additional minable ore into reserve. The present work does not indicate sufficient tonnage of low grade ore to warrant the construction of a mill. The fluorspar is of fair grade and by using selective mining and sorting should meet the requirements for a commercial product. Consumption of all grades of fluorspar is expected to increase this coming year and an increasing demand with probably higher prices is predicted. However, under the present conditions at the Superior Fluorspar Company's property, only a high cost, small tonnage operation is indicated that would be profitable only through a small scale "lessee" type of operation.

Respectfully submitted,

WALTER C. FRANKLIN

WCF/aw

Butte, Montana
June 1951

(COPY)

Billings, Montana
April 1, 1949

Mr. V.A. Gilles
Chief Geologist
Northern Pacific Railway Co.
Billings, Montana

Dear Mr. Gilles:

At your direction, I examined the fluorspar properties in Mineral County, Montana near our Spring Gulch siding.

My instructions were to examine this property with the thought in mind of our Company building a loading platform for the prospective ore at Spring Gulch.

I submit the following report, in which I neither encourage nor discourage the building of said platform.

THE FLUORSPAR DEPOSITS
OF
DRY CREEK AND WILSON CREEK
MINERAL COUNTY, MONTANA
April 1, 1949

The geology of the Dry Creek and Wilson Creek area, Mineral County, Montana, is believed to be directly related to a series of fault zones in a series of Pre-Cambrian quartzites belonging to the Belt Series. Secondary lime occurs in these fault zones.

One of these fault zones, which extends on an average bearing of N 80° W to a traceable distance of nearly two miles, has the original discovery of fluorspar located abutting against it on the north side. This is the present Riverside Copper Company lease. (Plate I). On this prospect only one thin stringer of fluorspar was found to go through to the south side of the outcrop of bull quartz, which now fills the fault zone. I believe that the fluorspar was deposited after the faulting and after the intrusion in the fault zone by the bull quartz. When hand specimens are examined, it is found that the fluorspar deposits itself around and on the quartz stringers in the fluorspar beds.

At the east end of the above mentioned fault zone, a second fault zone striking N 15° W is encountered. This cuts off the first fault zone somewhere near the intersection of Bear Creek and Dry Creek. An exposure of this so-called fault zone was first noted near the Lucky Jack mine. (See Plate I).

Approximately one mile east of the intersection of Bear Creek and Dry Creek is located the Magi claim. The rock here is still striking N 15° W, is shot with full quartz veins, and a two-foot zone of fault gouge was observed in an underground tunnel at this location.

It seems a safe assumption then, to assume a fault zone approximately one mile in width. (See Plate I).

Assuming, after detailed study and careful mapping, that the above observations are true, it then appears that there is a considerable area justifying further exploration in both Dry Creek and Wilson Creek valleys.

Uses

Fluorspar has a variety of uses, some of which are tabulated below.

Table 1.

Uses	Percentages of fluorspar and impurities					
	F	Si	$CaCO_3$ (Calcite)	Fe_2O_3 (Less than 40-50 h_2)	S	Fines
Hydrofluoric acid	98%	L* 1%	L 1%			
Glass	95%	L 3%	L 1%	L 0.12%		
Flux (open hearth steel)	85%	L 5%	**		.3%	
Flux (high grade cast iron)	80%	L 6-7%	**			L 15%

(*) L -- Less than
(**) $CaCO_3$ (calcite) is not objectionable here due to its wides read use as a flux in the form of limestone

In addition to these uses, fluorspar is used in the synthesis of a number of compounds of fluorite used in atomic energy experiments. Other uses are in the making of fluorescent lights and optical parts of microscopes; small amounts are added to water supplies of large cities to arrest tooth decay, and it is used to make cryolite which is used in the manufacture of aluminum.

Deposits of Fluorspar in Dry Creek and Wilson Creek Valleys

The fluorspar deposits in the Dry Creek and Wilson Creek valleys, Mineral County, Montana, are three in number; two in the Dry Creek valley and one in the Wilson Creek valley.

The first and most well known deposit to be found was located in the Dry Creek valley by Joseph Brooks on June 2, 1943. This find is on land owned by Mr. Frank Lening of Superior. It has been developed by the Coeur D'Alene Extension Mines, Incorporated, of Wallace, Idaho. The principal stockholders of this company are Joseph Brooks, C.W. Brass, and F.L. Scott, all of Wallace. Mr. Lening is to be paid a 5 per cent royalty on all profits.

This deposit is located "in the SW corner of T. 17 N., R. 27 W. in Lolo National Forest, 5½ miles from Superior, Montana on a graded, graveled county road, and 6½ miles up Dry Creek on a United States Forest Service, ungraveled, ungraded dirt road". (See Plate I).

I here refer to Mr. George R. Rowe's report of October 29, 1945, on this property. My findings support in detail the report of Mr. Rowe. However, since Mr. Rowe's examination, this property has been leased to the Riverside Copper Company by Jay Bettles, who leased from Coeur d'Alene Extension Mines, Incorporated. (Plate I). A Dr. Mason is one of the backers of Riverside Copper Company. Mr. J. Grismer and two men are going development work at the shaft exposure of fluorspar mentioned in Mr. Rowe's report. If I understood Mr. Grismer correctly, they intend to start at the shaft and strip the surface with a bulldozer in an attempt to uncover a minable deposit.

The fluorspar in the contact of the bull quartz vein is very pure. An analysis in the Geological Survey release of October 9, 1947 by Mr. C.E. Ross is as follows:

Analysis: 98.57% Calcium fluoride
1.18% Silica
.14% Carbonate

As the fluorspar is shot with highly-altered, crumbly quartz, the ore would have to be milled and the gangue separated. This could be easily done, I believe, because in no place is the fluorspar interpenetrated into the quartz.

Colors of the fluorspar vary from white and sugary, to colorless, green, light blue, to purple near the contact, the color getting darker as the country rock is neared. This may indicate that the color of the fluorspar is somewhat dependent upon the amount of iron in the country rock.

At the present time, development has not proceeded to a point where a tonnage estimate can be made. Heretofore, development of this claim has been extremely poorly managed. My opinion is that Mr. Grimmer is a competent miner and knows his business very well. If there is a minable deposit on this property, I feel sure that Mr. Grimmer will find it and contact us within the next few weeks.

A Sullivan DA 314 portable compressor is on the property now, besides a truck load of mining equipment not yet unloaded.

Magi Claim, Dry Creek, Mineral County, Mont.

The second property is about one mile down Dry Creek, or east of the original discovery. This is known as the Magi Claim of the Montana Fluorspar lease. This property is about 1½ miles closer to the Spring Gulch siding than either the Riverside Copper lease or the Lucky Jack lease. (See Plate I).

Quoting from a note written by Mr. James L. Scott (son of Mr. F.L. Scott, D.D.S., who is Secretary-Treasurer of the Coeur d'Alene extension Mines, Inc.), "The seven claims which we (John C. McGee and James L. Scott) have leased now and west of Mine Gulch were taken up by James L. Scott and Thomas K. Gregory in February of 1947 or 1948 for Mr. William C. Robinson of Duluth, Minnesota. The lease was let to us about November of 1948. The seven claims under lease are: Midas, Bladem, McGee, Media, Mystic, Riverne, and Magi. This lease is divided up among six parties as follows:

John C. McGee, Wallace	25%
James L. Scott (son of F. L. Scott) Wallace and Superior	25%
Gus Voltolini, Wallace	12½%
Harry Voltolini, Wallace	12½%
Thomas K. Gregory, Superior	12½%
James McGee, Superior	12½%

Mr. Robinson receives 12½% of the gross, less freight.

John C. McGee and the two Voltolini brothers of Wallace own one-half of this claim and are putting up the money for exploration. These men are bankers in Wallace. This gives a rather clear picture of the financial strength behind Montana Fluorspar.

The equipment of this operation is stored at present, pending spring operations.

On March 24, 1949, partially at my suggestion, an outcrop of fluorspar was uncovered by surface stripping. This was done using a rented bulldozer and operator. The outcrop measures 21 feet wide by 15 feet long by 7 feet high, at present. The strike of this outcrop is N 15° W with a vertical dip. Samples were taken by trenching across the outcrop perpendicular to the strike. The analyses of these samples are given below:

	CaF_2	SiO_2
Sample 2, west 10½ feet of outcrop	45.3%	15.1%
Sample 3, east 10½ feet of outcrop	51.3%	11.0%

The fluorspar at this outcrop is in small hands imbedded in what appears to be a highly-altered, fine-grained quartzite. On inspection, it appears that the outcrop as a whole is approximately 33% fluorspar. Acting upon this assumption, I estimate a reserve of 73.38 tons in this deposit. Surface stripping is continuing at the present time.

Underground exploration of this vein is to be continued as soon as a compressor and other equipment can be hauled to the property. A rather sinuous adit approximately 63 feet in length has been driven into the country rock about 75 feet below the outcropping of fluorspar and to the west. Mr. A.L. Anderson, Chief Engineer of Sunshine Mines Inc., Kellogg, Idaho, is the technical adviser to the operators of this claim. No doubt he will survey in the outcrop in relation to the present adit and set the miners on a true intersection bearing.

At the end of the adit, a number of "slips" or faults were cut. From the largest fault, nearly two feet in width, a sample of fault gouge was taken. The analysis is as follows:

Sample was analyzed for gold and none was found.

Tax evaluation on the equipment at the Magi claim is $800. This does not include a compressor, jackhammers, steel track, pneumatic drills, and ore cars, none of which are on the property at present.

I was told that a set of buildings is to be erected in Lime Gulch near the Magi claim as soon as the road permits hauling of lumber.

It should be mentioned here that the two Voltolini brothers are in the ore dressing and milling business. As soon as enough tonnage is proven to warrant it, they intend to build a mill of their own on the Magi property. This mill, if build, will handle 50 tons of ore a day, or a carload about every 5½ days. This would mean two cars a week or eight per month. At $680 per car, this comes to $5,040 per month. This property can operate at least six months of the year, with a total revenue of $18,240

The Voltolini brothers say that the proposed mill will cost them between $10,000 and $12,000. At the present, they are quietly developing their reserve to see if it warrants a mill. If so, then they will approach us about a loading platform, to be ready in time to receive their ore.

In the event that either of these two men or their representatives approach us concerning a platform, may I suggest a re-check of their ore reserves and a check to see if the building of a mill is in progress. If the ore reserve is enough and the building of a mill is sound judgment, then I would heartily recommend the building of a platform for their use.

The type of platform that seems most practical is a perpendicular-to-siding type, to be located somewhere near the center of the Spring Gulch spur. It should be so placed that the spur could hold at least three empties at a time, the cars when loaded being handled by car movers and another put in place. This type of platform would require a re-routing of the county road in a "half-moon" curve to give adequate loading space and insure safety.

To summarize, if these people correctly feel the property valuable enough to warrant a 50-ton mill, then I am quite certain that we would enter into a profitable business arrangement by building a loading platform. It may be here noted that Mr. Gus Voltoline would be agreeable to standing one-half of the platform building expenses, if he would be allowed to use his own labor, under railroad direction, and be reimbursed by a freight rebate. This of course voices the opinion of all six men, as they are partners and do a fine job of sticking together.

Lucky Jack Mine, Wilson Creek, Mineral County, Montana

The third property to be discussed is the Lucky Jack mine. This property is located about 1½ miles up the Wilson Creek valley from the intersection of Wilson and Dry Creeks. (See Plate I).

Quoting from a note written by Mr. Alvin Bettles, son of Mr. Jay Bettles, "The Wilson Creek fluorspar deposit is leased jointly by Jay Bettles, Henry A. Whitley of San Francisco, Dr. Nichig (Belfour and Guthrie), and Alvin Bettles. Jay Bettles leased the Wilson Creek property from Coeur d'Alene Extension Mines, Inc, in September of 1948. (he holds a ten-year lease). Work was started on the lease by October 15. Equipment was moved on the lease, including a Jeep pickup truck, and four men started work on the road to the deposit, which was finished by Nov. 1st".

Equipment on the property at the present time consists of a Worthington type "100" air compressor, two pneumatic drills, one stoper-type drill, 60 feet of track, an ore car, an assortment of drills, picks, shovels, etc., 200 feet of pneumatic air hose, two wheelbarrows, and a 60-foot long by 2-foot wide plank ore chute. The original camp mentioned in Mr. Rose's report of October 29,1948 is also included here, as it is now used by the Bettles interests. I understand, however, that they are using the camp because of the good will of the Coeur d'Alene Extension Mines, Inc. and not because they have or have even asked to lease the said camp. The tax evaluation on the above equipment is $2500.

The ore at the Lucky Jack mine seems to be striking N 15° W and dipping 45° E. Occurrence is in beds from one to three feet in width, separated by "walls" or "horses" of fine-grained quartzite with some megascopic manganese dioxide dentrites. The quartzite has been shattered and penetrated by bull quartz veins and, I believe, fluorspar itself was formed in the huge cracks opened up by the faulting of the rock. Microscopic examination shows the quartzite to be highly altered, probably by the chemical action of the fluorspar. The present quartzite is very poorly cemented and now more nearly resembles a fine-grained sandstone. Upon testing with hydrochloric acid, the rock gives a positive reaction, the carbonate reaction coming from the very tiny cracks in the sample.

Deposited with the fluorspar is a sizable quantity of calcite. This calcite has rhombohedral cleavage and is very finely striated on nearly every cleavage surface. This has been shipped with no ill effects, as calcium carbonate itself is also a flux in the manufacture of iron and steel, in the form of limestone. (See note in Table 1).

Three samples, numbers 4, 5, and 6, were taken of the fluorspar ore. Number 4 and 6 were taken from two carbonate veins about 18 inches in thickness and striking N 10° W. The dip is 45°. (See plan). Sample number 5 was taken from the mine-run sulphide ore stock pile in the directions indicated on the plan view.

Analyses of the three samples are given below:

	CaF_2	SiO_2
Sample No. 4, 18" vein	84.2%	3.3%
Sample No. 5, Ore pile, 36" x 6'	77.6%	6.2%
Sample No. 6, 18" vein	86.1%	2.8%

Because of the extremely poor method of developing at this mine and the stock piling of ore in the main drift, I am unable to make a just estimate of reserve tonnage. An adit about 50 feet below the workings on a bearing of N 81½° W and extending about 80 feet into the country rock shows no trace whatever of fluorspar. The Bettles interests plan to extend this further in the hope of hitting the vein. My estimate is a reserve tonnage of at least 172.52 short tons, or roughly three carloads.

The estimate is that the Bettles claim has 101.84 tons of ore ready to ship, pending assay returns. This amounts to two carloads.

According to the March News Letter of the Mining Association of Montana, approximately 510 tons of ore was shipped last year at $42.50 per ton.

"(Mr. Alvin Bettles). The price established by Jay Bettles and Balfour-Guthrie Ltd., San Francisco, is $42.50 a ton, F.O.B., Superior, Montana".

Mr. Bettles also writes that one-half dollar per percent will be added for all fluorspar over 85% pure and that one dollar per percent is added for every percent silica under 6%. This price scale arrangement is already showing results. In the removal of the first cars of ore, it was explained that any marginal ore was hand-cobbed out to make sure that the ore met specifications. A rough estimate is that there are two carloads of marginal milling grade ore on the dump. Some of this is lost due to dumping of rock on top. I doubt very much if Balfour& Guthrie, Ltd. realized that the property in which they have an interest would be high-graded and gophered out as a result of the price scale arrangement.

Quoting from a wire to Mr. W.A. Gilles from Mr. M.J. Stiles on March 21, 194 , "Scott of Wallace advises ready to load out minimum 250 tons per month. Contracting this minimum with trucking firm today." A Mr. Worthington, apparently the trucking contractor to which Mr. Scott refers, is staying at the camp now. His equipment consists of a Caterpillar Diesel bulldozer and a rather old G.M.C. truck.

This truck, I am told, is capable of carrying a nine-tonload of ore, and is equipped with a dump box. The driver (Mr. Worthington) mentioned that the truck would just pull up the grade on the road empty because of the road's condition. Assuming this to be true, I doubt if very much ore will be hauled for at least a month.

When the roads are in shape, the property is equipped to produce about two carloads of ore a week. At an approximate $380 per car, this amounts to a minimum revenue of $1900 for five carloads. The following table shows ore reserves as I have estimated them:

Table 2.

Type of Ore	Number of Tons	Number of Carloads
Shipping ore	101.84	Two
Shipping ore reserves	172.52	Three
Milling ore	100 concentrates	Two
Milling ore reserves	73.38 concentrates	One and one-half

Because of the conflicting reports on the cost of a loading platform it is impossible to recommend or not recommend its construction.

It should be stated here that all tonnage estimates have been made conservatively, following the reasoning that a greater tonnage means more revenue, where a smaller tonnage would mean a loss to the company.

Respectfully,

/s/ Lyle R. Myers

Assistant Geologist

LRM:DJ

Copies to:
L.L. Schwarm
L.A. Challoner
H.H. Ellsworth
E.J. Stiles
C.W. Coil
O.H. Underwood
Agent, Superior, Mont.

BOY CREEK DISTRICT
MINERAL COUNTY, MONTANA

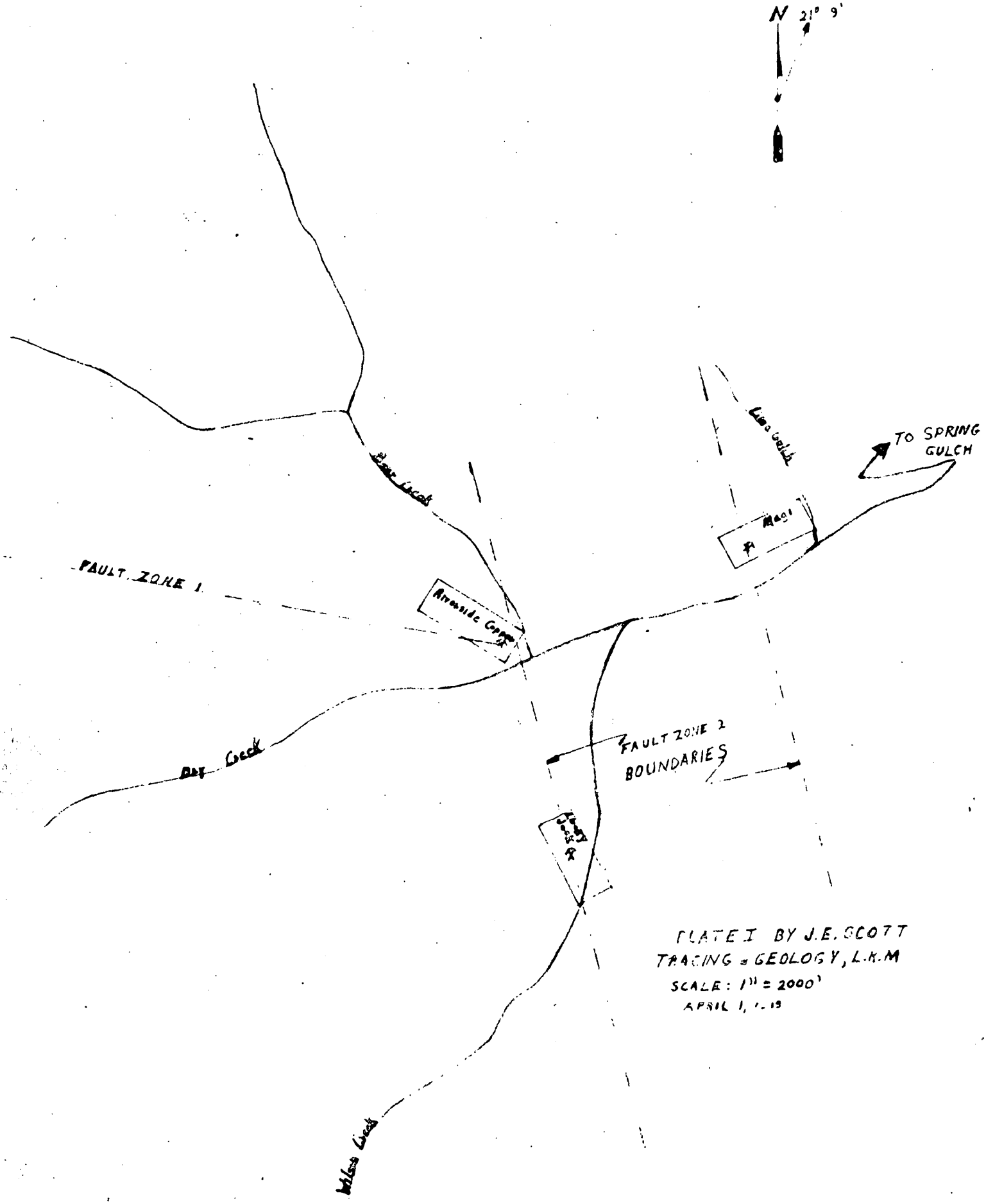


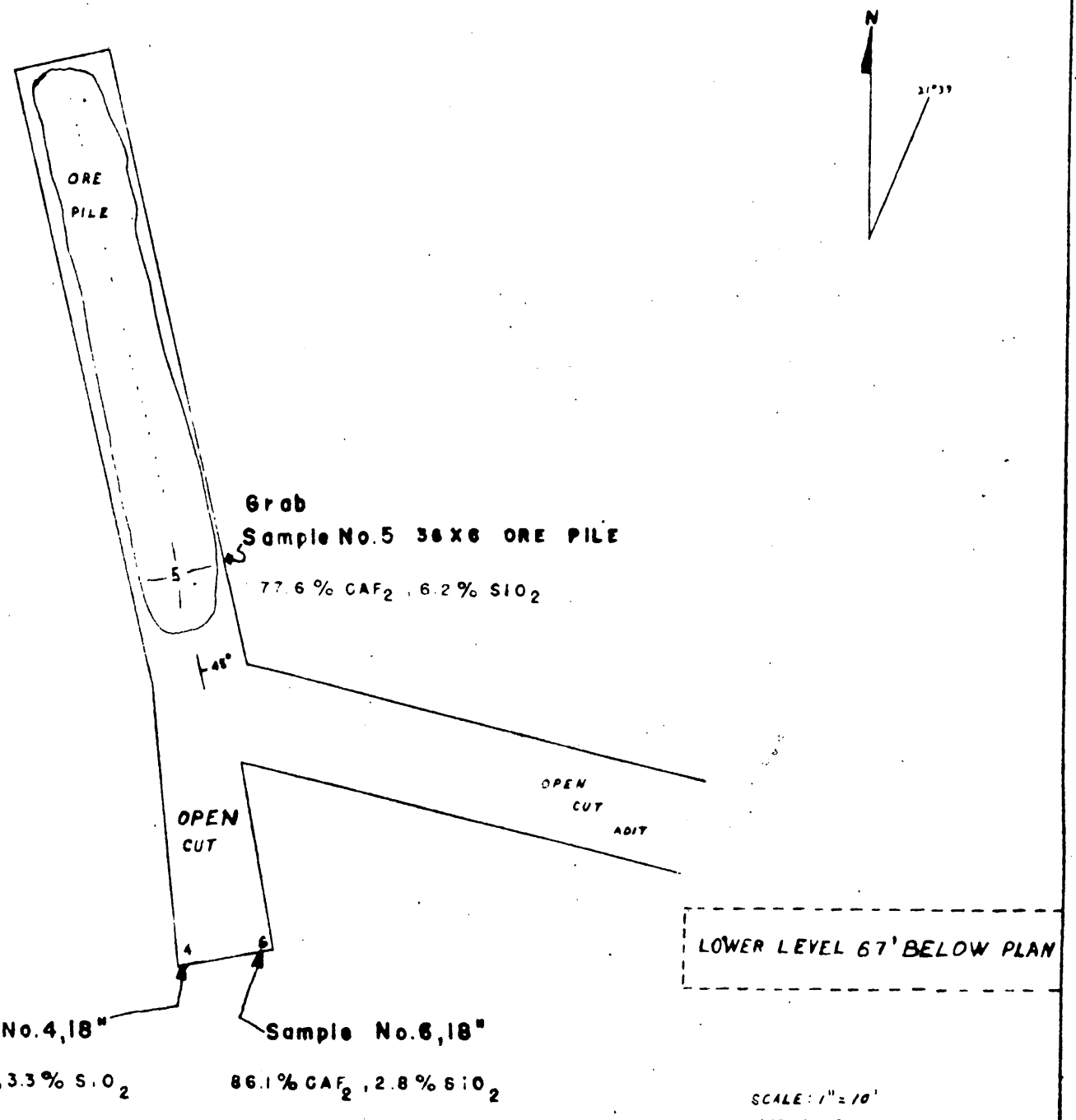
PLATE I BY J.E. SCOTT
TRACING = GEOLOGY, L.K.M
SCALE: 1" = 2000'
APRIL 1, 1-19

NORTHERN PACIFIC RAILWAY GEOLOGICAL DIVISION

PLAN VIEW OF LUCKY JACK MINE, BETTLES LEASE

DRY CREEK DISTRICT

MINERAL COUNTY, MONTANA



SCALE: 1" = 10'

APRIL 1, 1948

L.R.M.

ASSIGNMENT OF MINERAL OPTION AND LEASE

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, W. E. Clark of Billings, Montana, as assignor, for and in consideration of One Dollar ($1.00), the receipt whereof is hereby acknowledged, does hereby sell, assign, transfer and set over unto Howe Mining Company, a Corporation, as assignee, all of his right, title and interest in and to that certain Mineral Option and Lease entered into between Superior Fluorspar Company and W. E. Clark, dated January 2, 1951, covering the following described mining property and premises, situate in the County of Mineral, State of Montana, to-wit:

> All of the unpatented lode mining claims of the lessor in the said County of Mineral, as the certificates of location of said claims are of record in the office of the County Clerk and Recorder of Mineral County, Montana, embracing the following: Black Jack No. 1, Black Jack No. 2, Mercury, Lucky Jack, Glory, Hope, Jupiter, Venus, Mars and Saturn; all of said mining claims being located and situated on Dry Creek approximately 13 miles southwest of Superior, Montana, together with the improvements thereon.

The said assignor covenants and warrants that he is the lawful owner of said option and lease, free from liens, encumbrances or adverse claims, and that he has the right to sell and assign the same.

EXECUTED, this _____ day of _____, 1951.

W. E. Clark
Assignor

_____
Wife of W. E. Clark

STATE OF MONTANA)
County of ~~Yellowstone~~ Gallatin) ss.

On this day before me personally appeared W. E. Clark, to me known to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same as his free act and deed.

Given under my hand and seal on the 10th day of January,

Merle E. Rollins
Notary Public
Residing at Bozeman, Mont.

My commission expires:
January 4, 1952

MERLE E. ROLLINS
NOTARY PUBLIC
STATE OF MONTANA
SEAL

STATE OF MONTANA,)
: ss.
County of _____.)

On this _____ day of _____, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared IVA CLARK, wife of W. E. Clark, known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same.

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

_____
Notary Public for the State of Montana.
Residing at _____.
My commission expires _____.

I certify that I received this instrument for Record on this 16th day of January, 1951, at 3:16 o'clock P. M., and that it is recorded in Vol. 3 of MRC Records of Mineral County, State of Montana, on Page 224

Witness my hand and official seal

_____
County Recorder
By _____ Deputy

Fees. $1.00

Return to _____

- 20566 -

Compared

Indexed

MINING LEASE

PARTIES

THIS INDENTURE, Made and entered into the 2nd day of January, 1951, between the SUPERIOR FLUOR-SPAR CORPORATION, a Montana Corporation having its registered office at 1662 Rimrock Road, Billings, Montana, and qualified to transact business in the State of Montana, party of the first part, hereinafter referred to as the "Lessor", and W. E. CLARK of Belfry, Montana, party of the second part, hereinafter referred to as the "Lessee":

W I T N E S S E T H:

DESCRIPTION OF PROPERTY

The Lessor, for and in consideration of the sums hereinafter reserved, and the covenants and agreements hereinafter expressed, and by the Lessee to be kept and performed, has granted, demised and let, and by these presents does grant, demise and let unto the Lessee, the following described unpatented lode mining claims, situated in unorganized Mining District, Mineral County, Montana, located approximately thirteen miles southwest of Superior, Montana, on Dry Creek, to-wit:

BLACK JACK #1	HOPE
BLACK JACK #2	JUPITER
MERCURY	VENUS
LUCKY JACK	[illegible]
GLORY	SATURN

TERM

TO HAVE AND TO HOLD Unto the Lessee for a term of ten (10) years beginning the 2nd day of January, 1951, and expiring at midnight on January 2nd, 1961, unless sooner terminated or forfeited, as herein set forth. Provided, however, that said term shall be subject to renewal at the option of the Lessee for an additional term of ten (10) years upon the terms and conditions of this lease. In the event the Lessee shall elect to renew said lease it shall give the Lessor notice thereof in writing at least six (6) months prior to the 1st day of January, 1961. The Lessee, who is now in possession of said property, agrees from the date hereof to prospect, develop and mine said property in a good and miner-like manner and in a manner necessary to good and economical mining with the end in view of developing said property into a permanent, workable mine and with a further end in view of recovering therefrom the maximum

amount of ore and values consistent with the development and preservation of the same as a workable mine.

YEARLY WORK

The Lessee agrees to complete not less than 200 lineal feet of underground development per year upon said property, such development to consist of drifts, crosscuts, shafts, winzes or raises. Stoping shall not be considered development hereunder. Lessee shall be required to have the work provided for herein completed on or before December 31st of each year during the term of this lease. On or before the 31st day of December of each year the Lessee shall deliver to the Lessor a progress map, which shall show at a scale of not less than one inch per 100 feet, all development and mining done on said property during the last lease year. It is the intention of this agreement that at least 200 lineal feet of development be done on said property each year. Therefore, Lessee shall not be entitled to take credit in subsequent years for development done in a past year or years in excess of said 200 feet, but Lessee shall be required each year to complete a minimum of 200 feet of development work. In the event that the property herein demised shall develop into a paying mine, it is understood and agreed that the work contemplated hereunder shall continue to be exploratory work and shall be in addition to work incident to actual removal of ores.

TIMBERING

The lessee agrees to well and sufficiently timber said mine and to repair and replace all old timber where necessary or advisable in accordance with good mining practice, having due regard at all times to the preservation of said mine as a permanent, workable mine.

The Lessee may cut and use, for timbering in said mine, any suitable timber standing or growing upon said claims. In cutting such timber all brush and slashings shall be piled and burned in accordance with the laws of the State of Montana and the requirements of the United States Forestry Department.

INSPECTION

The Lessor, or its agents, may from time to time, and as often as it desires, enter upon and into all parts of said mine and mining property, and any mill or concentrator used by the Lessee in connection with their operations under this lease for the purpose of inspection, examination and observation. Such inspection shall be made so as not to unnecessarily interrupt or interfere with the Lessee's operation.

MONTHLY REPORTS ON OPERATION

The Lessee agrees to furnish to the Lessor on or before the 10th day of each calendar month, while operating under this lease, a statement in writing showing the number of men employed by the Lessee at said property, the footage, location and character of underground work done, the number of tons of ore, if any, extracted during the preceding calendar month, and the disposition thereof, and a statement of all ores or values shipped or sold during the preceding calendar month, and to whom shipped or sold.

UNDERGROUND WORKINGS TO BE KEPT CLEAR

The Lessee agrees to keep the drifts, shafts, tunnels and other underground workings in said property thoroughly drained and clear of loose rock, debris and rubbish unless prevented by extraordinary mine casualty. Nothing herein contained shall be construed to prevent the Lessee from back-filling stoped out ground with waste in accordance with usual and customary mining practice.

NON-LIABILITY OF LESSOR

The Lessee expressly covenants and agrees to promptly pay for all labor performed and materials and supplies used in the prosecution of all work performed by them under this lease. The Lessee shall notify all persons employed by it in the prosecution of their operations under this lease, and all persons furnishing materials and supplies for use thereon that the Lessee is solely liable therefor and that neither the Lessor nor the demised premises are in any manner liable therefor. The Lessee shall fix and establish regular monthly, semi-monthly, or weekly pay days for the payment of employees, and fix and establish a specified day of each calendar month on or before which all materialmen shall be paid.

NON-LIABILITY NOTICE

At all times during its operations under this lease the Lessee shall keep printed or written notices conspicuously posted at the mine, and at the entrance to any mill or concentrator it may use or operate in connection therewith, stating that it, and it alone, are liable for payment of all labor performed and material furnished and that neither the Lessor nor the said mining property are responsible or liable therefor.

The Lessee shall also post, record and, if necessary, publish any and all other non-liability notices, or notices for protection of laborers or materialmen, required by the laws of the State of Montana with respect to operations of this character.

GUARANTY AGAINST LIENS

The Lessee covenants and agrees to hold the Lessor and the said demised premises free and harmless from any and all attachments, executions, impositions, laborers' liens, materialmen's liens and claims or demands of every kind and nature arising out of and by reason of the operations conducted under this lease.

SUMMARY TERMINATION

If the Lessee shall fail to pay any laborers, mechanics or materialmen for labor performed or materials furnished in connection with their operations under this lease, promptly on the regular established pay days it shall then be optional with the Lessor to forthwith and summarily suspend all work hereunder pending the correction of such defaults, and if such defaults are not corrected within a period of thirty (30) days from service of the notice suspending such operations, then it shall be optional with the Lessor to terminate this lease without further notice. The Lessor may suspend said operation, as herein provided, by giving the Lessee, or its assigns, written notice to suspend.

The Lessee agrees to immediately notify the Lessor of its failure or inability to meet any payroll or payments to materialmen on any regular pay day.

INTERPRETATION

The provision of this lease requiring punctual payment of laborers, mechanics and materialmen, are intended only for the protection of the Lessor's property and to keep it clear of liens, or asserted liens, and shall not be construed as an assumption, actual or implied, on the part of the Lessor or any liability or responsibility for the payment thereof.

WORKMEN'S COMPENSATION

The Lessee shall at all times fully comply with the laws of the State of Montana with respect to providing Workmen's Compensation for the protection of employees.

TAXES

The Lessor shall be liable for, and shall pay, all State, County and School District taxes, if any, upon said property during the life of this lease, and shall pay all severance, net profits or mines license tax, if any, required by the laws of the State of Montana. Provided, however, that any such taxes based or computed upon net profits shall be paid by the parties hereto in proportion to their respective participation in said net profits as hereinafter provided.

SOCIAL SECURITY

The Lessee shall be liable for and shall pay all old age pension and unemployment charges attributable to their operations hereunder, together with any and all other social security taxes, charges or impositions which may now or hereafter be imposed upon said operations.

DEVELOPMENT COSTS

The Lessee shall be solely liable for all pre-production development and exploration costs necessary to bring said demised premises into profitable production and it shall not be entitled to reimbursement therefor out of any future earnings or profits derived from the property.

RENT

The Lessee agrees to pay to the Lessor as rent for said property a royalty upon the gross sales return on all ores produced therefrom. No costs of production other than rail transportation shall be deducted from the gross sales returns upon which said royalty shall be calculated. Payments of royalties shall be made by the purchaser or sales agent directly to the Lessor at its place of business. The

Lessee shall furnish, or cause to be furnished, to the Lessor duplicate sales returns from the purchaser or sales agent showing the quantity, quality or grade, price per ton and gross sales return on each and every shipment of ores from said property. Said royalty shall be calculated upon all ores produced from said property, as follows:

10% of the gross sales value payable to Lessee.

It is also agreed that Lessee shall ship without milling all ores which in the normal course of mining shall be of sufficient grade to permit this practice. The failure of Lessee to make such shipments in good faith shall be grounds upon which this lease may be cancelled.

DEFAULT AND TERMINATION

If the Lessee shall fail to promptly pay laborers, mechanics and materialmen on the regular pay day, as hereinabove provided, the Lessor may forthwith terminate this lease and immediately repossess said property unless the Lessee shall have given notice to suspend the operation pending the correction of the default as hereinabove provided.

If the Lessee shall default in the performance of any of the other terms of this lease the Lessor may give the Lessee notice in writing specifying the particulars of such default and the Lessee shall have thirty (30) days from the receipt of such notice within which to correct the defaults complained of or to establish the fact that they are not in default. Immediately upon receipt of such notice the Lessee shall advise the Lessor, in writing, of its intention to correct such defaults. If it shall elect not to correct the defaults, it shall so advise the Lessor and it shall have thirty (30) days from the receipt of said notice in which to remove from said demised premises any property owned by them and which is removable under the terms of this lease. On the other hand, if the Lessee shall elect to correct such defaults, it shall notify the Lessor thereof and shall have thirty (30) days from receipt of notice of default in which to correct the same. If they fail to correct such defaults within said thirty (30) days the Lessor may thereupon terminate this lease and

all rights of the Lessee hereunder shall thereupon be forfeited and the Lessee shall have thirty (30) days in which to remove from said demised premises any property belonging to it which is removable under the terms of this lease.

TRANSFER OF PROPERTY

The parties agree that upon the expiration of the term of this lease, or the sooner termination or forfeiture thereof, to effect a business-like and orderly transfer of the property to the Lessor and to conduct the respective operations therein simultaneously and without unnecessary interference one with the other, neither to deny the other admission to said property for such purpose, within any of the time limitations hereinbefore specified.

PORTABLE EQUIPMENT

It is understood that during the course of its operations under this lease, the Lessee may install, or place, in or upon said property certain portable equipment, such as compressors, pumps, hoists, ore cars, slushers, mucking machines, fans, motors, drills, drill steel and hand tools. It is agreed that upon the expiration of the term of this lease, or any sooner termination thereof, the Lessee may remove all of said portable articles, which it may have installed in or upon said property within thirty (30) days from such termination, provided that it is not then indebted to the Lessor on any account whatsoever, and provided further that it is not then indebted for any labor performed or material furnished in the course of its operations under this lease. If it shall be so indebted, but shall furnish to the Lessor proof of the payment of the said indebtedness within ninety (90) days from such termination, it shall then be entitled to remove such portable items, but otherwise the same shall become the property of the Lessor.

PERMANENT STRUCTURES

If, during the term of this lease, the Lessee shall construct any buildings, ore bins, tramways, tracks, water or air pipe, or other structures upon or affixed to the demised premises, upon the expiration of the term of this lease, or the sooner termination thereof

for any reason, the same shall be left in place and become the property of the Lessor.

SETTLEMENT OF ACCOUNTS ON TERMINATION

If, upon the expiration of the term of this lease or the sooner termination or forfeiture thereof for any reason, the Lessee shall be indebted to the Lessor, on any account whatsoever, or if the Lessee shall then be indebted to any laborers, mechanics or materialmen in any sum whatsoever, it shall not remove from said demised premises any of the personal property otherwise removable by it under the terms of this lease until such indebtedness to the Lessor and to said laborers, mechanics and materialmen has been fully paid or waived. This provision shall not be construed to prevent the Lessee in the event of such termination or forfeiture from removing from underground the property removable by it, but the same shall not be removed from the demised premises pending the settlement of the indebtedness aforesaid.

The Lessee expressly covenants and agrees that any indebtedness owed by it to the Lessor and any indebtedness owed by it to laborers, mechanics or materialmen upon the termination or forfeiture of this lease, as aforesaid, shall be, and constitute, a prior lien upon said personal property of the Lessee, and that this lease, if and when recorded, shall in effect constitute a mortgage upon said personal property as security for the payment of the indebtedness aforesaid, if any.

MAPS AND GEOLOGICAL DATA

During the currency of this lease the Lessee shall furnish to the Lessor, from time to time as made, copies of any maps, plats, progress maps and assay and sampling maps, which he shall prepare or cause to be prepared with respect to said demised premises.

ADDRESS OF PARTIES

Until changed by written notice, the respective addresses of the Lessor and the Lessee, to which any notice required by, or made necessary under this lease, to be regularly given, is as follows:

SUPERIOR FLUOR-SPAR CORPORATION
1662 Kimrock Road
Billings, Montana

W. E. CLARK
Polfry, Montana

All notices given hereunder shall be given by registered mail or telegram, and each party agrees to promptly acknowledge receipt of any notice served by mail or telegram.

LEASE ASSIGNABLE BY LESSOR

Nothing herein contained shall be construed to limit or abridge the right of the Lessor to assign this lease, or any of its rights hereunder, or to sell or mortgage the demised premises, or any part thereof, provided, however, that no rights of the Lessee hereunder shall in anywise be affected, impaired or curtailed by the Lessor's assignment of its rights under this lease, or by the sale or encumbering of the demised premises, or any part thereof. The Lessee shall assign this lease only upon the written consent of the Lessor first had and obtained.

FORCE MAJEURE

It is agreed that neither party hereto shall be held responsible for damages caused by delay or failure to perform hereunder, when such delay or failure is due to fires, strikes, mine accidents, acts of God or other delays beyond the reasonable control of the parties hereto.

CONSTRUCTION OF INSTRUMENT

It is expressly understood and agreed that the Lessor does not, by this lease, or any provision hereunder, retain any control or direction over the operations of the Lessee hereunder other than to require that the same be performed in a good and miner-like manner and with due regard to the development and preservation of said demised premises as a workable mine.

It is expressly understood and agreed that the Lessee is not, and shall not be, construed to be the agent of the Lessor and that the Lessee has no power, right or authority to act for, bind or represent the Lessor in any particular whatsoever, and that the relationship

created by this agreement is that of Lessor and Lessee only.

IN WITNESS WHEREOF, SUPERIOR FLUOR-SPAR CORPORATION has caused these presents to be executed by its duly authorized officers and has caused its seal to be hereunto affixed this 2nd day of January 1951, and W. E. CLARK has caused these presents to be executed by him, this 2nd day of January, 1951.

SUPERIOR FLUOR-SPAR CORPORATION

By F. L. Clark
President

ATTEST:

W. H. Simpson
Secretary

W. E. CLARK

W. E. Clark
Lessee

~~ATTEST~~

W. H. Simpson
Secretary

Witness

STATE OF MONTANA)
) ss
County of Yellowstone)

On this 2 day of January, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared F. L. Clark and Robert M. Simpson, known to me to be the President and Secretary, respectively, of the SUPERIOR FLUOR-SPAR CORPORATION, the corporation whose name is subscribed to the within instrument, and acknowledged to me that they executed the same.

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

Notary Public in and for the State of Montana, residing at Billings, Montana. My Comm. Exp. 10-19-51

Recorded

STATE OF MONTANA
County of Yellowstone } ss

I hereby certify that the within instrument was filed for record on the 2 day of Jan 1951 at 3:12 o'clock P.M. and duly recorded in Book 98 M of Mortgages on page 318 Records of Mineral County, State of Montana.

Witness my hand and seal the day and year last above written.

Charles R. Coombs
County Clerk and Ex-Officio Recorder

By Robert [illegible]
Deputy

Recorded at request of [illegible]

-1-

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 # 40-2089

Date received 9-11-51

Participation

R. N. Howton
Vice President
Howe Mining Company
Florence, Montana

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

Name and address of applicant

Date September 13, 1951

FILL IN THIS BLOCK

Date of application September 13, 1951

Estimated cost $ 61,000.00

Mineral or metal Fluorspar

Percentage of Government participation

Location of mine Mineral County, Montana

Date of filing MF-100

DMA Docket Number, if available 2089

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? Corporation

* *2. If a partnership, state names and addresses of partners.

* *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? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property.

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

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. None available

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)?

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

16—64067-1

*see Supplementary sheets

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.

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

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.

* *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.

* *14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

* 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.

*17. Production: Mine is not is production

(*a*) If mine is in production, furnish the following information:

	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.) See private reports attached.

(*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.

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?

* 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.

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.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*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.

(*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.

* 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.

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.

Howe Mining Company
(Name of company)

By R. H. Howlon
(Signature of authorized official)

September 13, 1951
(Date)

Vice-President
(Title)

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

*Same as footnote on page 1.

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

*See supplement.

[illegible] and [illegible] [illegible] [illegible]

By A. N. Horton - Rowe Mining Company

3. Ivy Clark, President, Belfry, Montana
A. N. Horton, Vice President, Florence, Montana
W. A. Clark, Secretary, Treasurer, Belfry, Montana

4. (a) The applicant has been connected with oil and mining companies in an administrative capacity for more than twenty years.

(b) A qualified mining engineer will be employed to supervise the project.

10. (a) The property consists of the following ten (10) unpatented lode mining claims:

Black Jack #1	Rose
Black Jack #2	Quilter
Mercury	Venus
Lucky Jack	Mars
Silry	Saturn

Only claims described in accompanying report?

They are located in sections 35 and 36, T. 17 N., R. 26 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Allison Creeks in Missoula County, Montana.

(b) Same as above

11. The property now known as the Superior Fluorspar Company's property was formerly owned by Coeur d'Alene Extension Mining Company.

12. The property is located about nine airline miles west of Superior, Montana. Access roads to Superior and the Northern Pacific and the Chicago, Milwaukee, St. Paul and Pacific Railroad, the nearest shipping point, consist of about one mile of graded dirt road from the property to a well maintained U.S. Forest Service road. The total distance to Superior by road is about 18 miles. The road connecting the mine and the Forest Service road has steep grades.

13. A number of streams drain the district and have an abundance of water for operating and domestic purposes at all seasons of the year.

Electric power is available about 6 miles north of the property.

[illegible] [illegible] [illegible]

By [illegible] - [illegible] Company

14. A rather complete camp now exists on the property, including blacksmith shop, bunk houses, cook house and several other buildings. They will be devoted to the exploration work.

15. The ore could be shipped by railroad with a truck haul of about 18 miles to Superior, Montana. Both the Northern Pacific and [illegible] railroads serve the area. No milling is contemplated.

16. See attached reports by Walter C. Freshman, [illegible] Co. Geologist and Lyle [illegible] Myers, Northern Pacific Geologist.

20. The exploration will be conducted to determine the extent, quantity and grade of fluorspar available.

21. The proposed work consists of open trenches normal to the vein cut to a depth of not less than ten feet into the unaltered vein material and diamond drilling. It is estimated that the work can be completed within eighteen months after the contract has been approved.

22. See attached reports mentioned in 16 above.

23. Summary of Cost

(a)	Labor	$ 6000.00
(b)	Supervisors	3600.00
(c)	Repairs to existing facilities	5000.00
(f)	Cost of rental of equipment	7000.00
(g)	Rental value of facilities and equipment owned by operator	1000.00
(h)	Cost of materials and supplies including items of equipment costing less than $50.00 and diamond drilling contract	38,400.00
	Total	$61,000.00

* See following page for breakdown of costs.

Statement of Material & Fixed Capital Loan

By A. B. Horton - Howe Mining Company

23. (a) Labor

1 Dozer operator	4 mo.	@ 600.00 per mo.	$ 2400.00	
1 Miner	4 mo.	@ 450.00 per mo.	1800.00	
1 Laborer	6 mo.	@ 300.00 per mo.	1800.00	
			$ 6000.00	— 6000

(b) Supervisors

Supervisor - engineer	6 mo.	@ 600.00 per mo.	$ 3600.00	3600

(c) Cost of necessary repairs to existing facilities including access road and camp $ 5000.00 — 5000

(d) Cost of necessary installations or construction of additional facilities 0

(e) Cost of items of equipment not now owned by the applicant which must be purchased for operations at a cost of $50.00 or more each 0

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

Cat and dozer	4 mo.	@ 1200.00	$ 4800.00	
Compressor	4 mo.	@ 300.00	1200.00	
Jackhammer	4 mo.	@ 35.00	140.00	
Pickup truck	6 mo.	@ 150.00	900.00	
			$ 7040.00	7040

(g) Rental value of items of equipment now owned by operator
Rental and maintenance of existing buildings; and blacksmith shop and equipment $ 1000.00 — 1000

(h) Cost of materials and supplies

Dynamite and detonators	$ 2000.00	
Fuel, grease, etc for equipment	6000.00	
Move in and out of equipment	1000.00	
Assays 1000 @ 6.00	6000.00	
Diamond drilling contract 3000 ft. @ 7.00	21,000.00	
Misc. and contingencies	2000.00	38,000
TOTAL	$ 38,000.00	60,640

SUPPLEMENT TO APPLICATION FOR MAKE-WORK LOAN

By R. N. Boston - Howe Mining Company

24. Time schedule

(Assuming work on the project is initiated May 1, 1952)

May 1952 Move in and accomplish necessary engineering and rehabilitation of camp	$ 10,000.00
June 1952 Excavate trenches and drill	11,000.00
July 1952 Continue excavation and drilling	10,000.00
August 1952 Continue excavation and drilling	10,000.00
September 1952 Continue excavation and drilling	10,000.00
October 1952 Move out equipment, complete sampling and assaying and prepare report	10,000.00

C
O
P
Y

SUPERIOR FLUORSPAR COMPANY
PROPERTY
[illegible] FLUORSPAR COMPANY
SECTIONS 25 & 26, T. 17 N., R. 28 W.
SECTIONS 30 & 31, T. 17 N., R. 27 W.
[illegible] COUNTY, MONTANA

INTRODUCTION

Mr. George W. O'Connor of Fromberg, Montana, directed the attention of the Geological Department of Anaconda Copper Mining Co. to the Superior Fluorspar Company. Mr. O'Connor is planning on doing some mining and development work on their property and desired geological advice before doing so. Sup. Flspr. Co.

LOCATION AND ACCESSIBILITY

The Superior Fluorspar Company's property consisting of 28 unpatented claims is located in Sections 25 and 26, T. 17 N., R. 28 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Allison Creeks nine airline miles west of Superior, Mineral County, Montana. (See index map). The property, at an approximate elevation of 4000 feet above sea level is in the rugged mountainous regions characteristic of western Montana near the Idaho boundary. Steep mountain slopes afford many sites suitable for development through tunnels. The area, although denuded of timber by the fire of 1910, is now heavily mantled with small trees and undergrowth, and will supply sufficient timber for a small mining operation. A number of streams drain the district and could provide an abundance of water for mining and domestic purposes. A dirt road with steep grades and in poor condition, extends from the mine, Lucky Jack ? one mile down Allison Creek to join a well maintained Forest Reserve road at a point 12 miles from the paved Highway, U.S. No. 10, at Superior.

COPY

This town is the county seat and nearest source of supplies. Electric power is available 6 miles north of themine. The northern Pacific Railway and the Chicago, Milwaukee and St. Paul Railway serve the area.

HISTORY AND PRODUCTION

The Superior Flurspar Company was formerly known as the Coeur D'Alene Extension Mining Company and development work by the latter company, located on Bear Creek was examined by members of the Geological Department in August 1945. (See Report No. C-217). The present mine workings are located on Wilson Creek approximately one mile east of the older development.

According to the Mining World Directory, dated May 1951 the officers of the Coeur D'Alene Extension Mining Company, Wallace, Idaho are: Perry J. McKay, President; R. N. Howton, General Manager; William Clark, Vice President and James E. Scott, Manager. Frank Clark is listed as manager of the Superior Fluorspar Company, Superior, Montana. The Coeur D'Alene Extension Mining Company was originally incorporated with 3,000,000 assessable shares of stock having a par value of one cent with a total value of $30,000.00. Their ownership is said to consist of 36 patented claims located in the Dry Creek drainage near Superior, Montana. In 1948 and 1949, the claims were leased by a Jay Bettles who is reported to have mined and shipped 310 tons of fluorspar averaging about 95% pure for which he received $42.50 a ton f.o.b. Seattle, Washington. The total production, all from the present workings is reported as nine cars of fluorspar. The Riverside Copper Mining Company, Wallace, Idaho, is said to have sub-leased 18 claims from Jay Bettles in 1948 and 1949.

- 2 -

COPY

Dr. T. A. Mason, Kellogg, Idaho, a large stockholder in the Coeur D'Alene Extension Mining Company was president and D. A. Callahan, Wallace, Idaho, was secretary of the company at that time. The company is capitalized with 2,000,000 assessable shares with par value at 5 cents, 789,830 shares have been issued. Their ownership consists of 5 patented claims in the Little North Fork district near Kellogg, Idaho. The property has been idle for some time.

GEOLOGY AND DEVELOPMENT

Pre-Cambrian sediments of the Newland (Wallace) formation, Belt Series Algonkian Age is the country rock in the vicinity of the Superior Fluorspar Company's property. The general strike of the beds is N. 10°- 20° W. with a 50° northeast dip. A shallow open cut and a short tunnel, now caved, comprise the development work. A short raise and stope extends from the tunnel to the bottom of the south end of the open cut. These workings are shown on the accompanying sketch map. The open cut, 65 feet long, 10 to 20 feet wide, and 6 to 8 feet deep was sunk upon an irregular vein, 2 to 10 feet wide of fluorspar occurring in a narrow bed of impure limestone interbedded in argillite. The vein is variable ranging from 2 feet wide in the north end of the cut to 4 feet wide in the south end with irregular enlargements up to 10 feet or more wide in between. Accompanying the veins are a number of small seams and veinlets of fluorspar. The mineralization, consisting of fluorite, calcite and quartz follows the bedding of the limestone and is concordant in dip and strike. Surface drag, due to the steep slopes (30°-42°) has broken and distorted the dip of the structure in the open cut.

Lucky Jack

(Lucky Jack map)

In places brecciated fragments of the limestone bed, partly replaced and surrounded by fluorite, occur. The fluorite is generally of the green and purple variety and becomes colorless or bleaches to white upon exposure to sunlight. The main impurity is calcite occurring as tiny seams and veinlets in the fluorspar. Selective mining and sorting would be necessary to obtain a shipping grade product. The limestone bed with occasional fluorspar 'float' is traceable for 1/4 mile or more along the strike and probably is the same bed that was prospected near Bear Creek. The deposit appears to have been formed through bedding plane fissuring followed by vein filling and replacement of a favorable limestone bed by solutions from a deep seated magmatic source. Deposition was probably influenced by local structure and by the composition and texture of the enclosing rock.

Uses

Fluorspar is material that contains sufficient fluorite to be of commercial value. Fluorite (CaF_2) is calcium fluoride and contains 51.1% calcium and 48.9% fluorine. It is the only common fluoride occurring in nature. Fluorspar, depending upon its use is classified into four grades; metallurgical grade, acid grade, ceramic grade and optical grade.

Metallurgical grade comprises about 56.0% of the total United States consumption with the steel industry being the predominant mx user. Specifications for this grade are 70.0% or more effective fluorite with less than 5.0% silica and not more than 0.05% sulphur. It is used as a flux in making steel, ferro alloys, nickel, brass and in foundries making high grade iron castings. It is also used to refine several nonferrous alloys.

Acid grade comprises about 68.0% of the total consumption with most of it used in the manufacture of hydrofluoric acid. Specifications for this grade require 97.0% fluorite and less than 1.0% silica. Barite, lead, zinc, lime and iron are other undesirable impurities that interfere with the manufacture of acid. A large portion of the acid produced is used in making artificial cryolite for the aluminum industry and in processing high octane gasoline. Other uses are in the chemical industry to produce Freon refrigerant, Aerosol insectitide and other chemicals.

Ceramic grade comprising about 15.0% of the total consumption must contain 95.0% or more fluorite with less than 2.5% silica. It must be colorless and contain traces only, of iron, lead, zinc, and other impurities. Its chief use is in the glass industry in the manufacture of opalescent, opaque and colored glass and enamels. Other uses are in making brick facings, vitrolite and Portland cement. It is also used as a bonding agent for emery wheels, carbon electrodes and for certain electric arc welding electrodes.

Optical grade comprises only a minor part of the total consumption. It must be absolutely clear, free of cloudiness or inclusions and contain no cracks or cleavage marks. It may have a slight color. To be commercial the rough pieces should be large enough to cut into clear pieces having a minimum diameter of ½ inch. It is used to correct color and spherical aberrations in small microscopes and telescopes. Artificial lithium flouride (made from acid grade fluorspar) is also used for the same purpose.

Western Kentucky and southern Illinois are the principal sources of fluorspar in the United States. In 1950 consumption was

was about 600,000 short tons with approximately 1/4 of the total being imported. Mexico is the chief importer with small amounts received from Spain, Germany, Italy and Newfoundland. The Federal Government has placed acid-grade fluorspar on the list of strategic and critical materials for stockpiling. Consumption is expected to increase and to beat all previous records in 1951.

Present prices as listed in the May 1951 issue of the Engineering and Mineral Journal are as follows: Metallurgical grade fluorspar with 70.0% or more effective flurite is quoted at $46.00 a short ton f.o.b. Illinois-Kentucky mines. Acid grade fluorspar containing 97.0% fluorite is listed at $50.00 a short ton f.o.b. Illinois mines.

Most large consumers buy on contract, specifying a definite tonnage containing a minimum fluorite content and with maximum impurities defined. Most of the fluorspar of commerce is handled through sales agencies or brokers that deal in other raw materials used in the steel, iron, ceramic and chemical industries, and therefore are in close contact with the consumers. Their usual commission is 5.0% of the f.o.b. price.

CONCLUSION

On the Superior Fluorspar Company's property, a small vein of fluorspar accompanied by irregular replacement of favorable country rock occurs in a narrow bed of limestone interbedded in argillite of the Neiland (Wallace) Formation, Belt Series of Algonkian Age. At the present time there is insufficient development to estimate the size and extent of the orebody. The limestone bed with occasional fluorspar float is traceable for 1/4 mile or more along the strike.

and it seems reasonable that it will correlate with a similar bed exposed one mile northwest in the Bear Julea area. However, the occurrence of minable bodies of fluorspar within this unprospected gap is a matter of conjecture and will require additional development. The access road and mine workings are in poor condition and will require a small expenditure for rehabilitation. A large or even moderate tonnage operation is not practicable with the present development and more work will be necessary to bring additional minable ore into reserve. The present work does not indicate sufficient tonnage of low grade ore to warrant the construction of a mill. The fluorspar is of fair grade and by using selective mining and sorting should meet the requirements for a commercial product. (Met. Grade) Consumption of all grades of fluorspar is expected to increase this coming year and an increasing demand with probably higher prices is predicted. However, under the present conditions at the Superior Fluorspar Company's property, only a high cost, small tonnage operation is indicated that would be profitable only through a small scale "lessee" type of operation.

Respectfully submitted,

William J. Chadbourne

WJC/aw

Of Anaconda Copper Mining Co.

Butte, Montana
June 1951

(COPY)

Billings, Montana
April 1, 1949

Mr. V.A. Gilles
Chief Geologist
Northern Pacific Railway Co.
Billings, Montana

Dear Mr. Gilles:

At your direction, I examined the fluorspar properties in Mineral County, Montana near our Spring Gulch siding.

My instructions were to examine this property with the thought in mind of our Company building a loading platform for the prospective ore at Spring Gulch.

I submit the following report, in which I neither encourage nor discourage the building of said platform.

THE FLUORSPAR DEPOSITS
OF
DRY CREEK AND WILSON CREEK
MINERAL COUNTY, MONTANA
April 1, 1949

The geology of the Dry Creek and Wilson Creek area, Mineral County, Montana, is believed to be directly related to a series of fault zones in a series of Pre-Cambrian quartzites belonging to the Belt Series. Secondary line occurs in these fault zones.

One of these fault zones, which extends on an average bearing of N 60° W to a traceable distance of nearly two miles, has the original discovery of fluorspar located abutting against it on the north side. This is the present Riverside Copper Company lease. (Plate I). On this prospect only one thin stringer of fluorspar was found to go through to the south side of the outcrop of bull quartz, which now fills the fault zone. I believe that the fluorspar was deposited after the faulting and after the intrusion in the fault zone by the bull quartz. When hand specimens are examined, it is found that the fluorspar deposits itself around and on the quartz stringers in the fluorspar beds.

At the east end of the above mentioned fault zone, a second fault zone striking N 15° W is encountered. This cuts off the first fault zone somewhere near the intersection of Bear Creek and Dry Creek. An exposure of this so-called fault zone was first noted near the Lucky Jack mine. (See Plate I).

Approximately one mile east of the intersection of Bear Creek and Dry Creek is located the Magi claim. The rock here is still striking N 15° W, is shot with full quartz veins, and a two-foot zone of fault gouge was observed in an underground tunnel at this location.

It seems a safe assumption then, to assume a fault zone approximately one mile in width. (See Plate 1).

Assuming, after detailed study and careful mapping, that the above observations are true, it then appears that there is a considerable area justifying further exploration in both Dry Creek and Wilson Creek valleys.

Uses

Fluorspar has a variety of uses, some of which are tabulated below.

Table 1.

Uses	Percentages of Fluorspar and Impurities					
	F	Si	$CaCO_3$ (Calcite)	Fe_2O_3 (Less than 20-50 mg)	S	fines
Hydrofluoric acid	98%	L* 1%	L 1%			
Glass	95%	L 3%	L 1%	L 0.15%		
Flux (open hearth steel)	85%	L 5%	**		.3%	
Flux (high grade cast iron)	80%	L 6-7%	**			L 15%

(*) L -- Less than
(**) $CaCO_3$ (calcite) is not objectionable here due to its often real use as a flux in the form of limestone

In addition to these uses, fluorspar is used in the synthesis of a number of compounds of fluorite used in atomic energy experiments. Other uses are in the making of fluorescent lights and optical parts of microscopes; small amounts are added to water supplies of large cities to arrest tooth decay, and it is used to make cryolite which is used in the manufacture of aluminum.

Deposits of Fluorspar in Dry Creek and Wilson Creek Valleys

The fluorspar deposits in the Dry Creek and Wilson Creek valleys, Mineral County, Montana, are three in number; two in the Dry Creek valley and one in the Wilson Creek valley.

The first and most well known deposit to be found was located in the Dry Creek valley by Joseph Brooks on June 2, 1943. This find is on land owned by Mr. Frank Lanning of Superior. It has been developed by the Coeur D'Alene Extension Mines, Incorporated, of Wallace, Idaho. The principal stockholders of this company are Joseph Brooks, C.W. Brass, and F.L. Scott, all of Wallace. Mr. Lanning is to be paid a 5 per cent royalty on all profits.

This deposit is located "in the SW corner of T. 17 N., R. 27 W. in Lolo National Forest, 5½ miles from Superior, Montana on a graded, graveled county road, and 6½ miles up Dry Creek on a United States Forest Service, ungraveled, ungraded dirt road". (See Plate I).

I here refer to Mr. George A. Rowe's report of October 29, 1945, on this property. My findings support in detail the report of Mr. Rowe. However, since Mr. Rowe's examination, this property has been leased to the Riverside Copper Company by Jay Bettles, who leased from Coeur d'Alene Extension Mines, Incorporated. (Plate I). A Dr. Mason is one of the brokers of Riverside Copper Company. Mr. J. Grismer and two men are doing development work at the small exposure of fluorspar mentioned in Mr. Rowe's report. If I understood Mr. Grismer correctly, they intend to start at the small and strip the surface with a bulldozer in an attempt to uncover a minable deposit.

The fluorspar in the contact of the bull quartz vein is very pure. An analysis in the Geological Survey release of October 9, 1947 by Mr. C.R. Ross is as follows:

Analysis: 98.57% Calcium fluoride
1.18% Silica
.14% Carbonate

As the fluorspar is shot with slightly-altered, crumbly quartz, the ore would have to be milled and the gangue separated. This could be easily done, I believe, because in no place is the fluorspar interpenetrated into the quartz.

Colors of the fluorspar vary from white and sugary, to colorless, green, light blue, to purple near the contact, the color getting darker as the country rock is neared. This may indicate that the color of the fluorspar is somewhat dependent upon the amount of iron in the country rock.

At the present time, development has not proceeded to a point where a tonnage estimate can be made. Heretofore, development of this claim has been extremely poorly managed. My opinion is that Mr. Grismer is a competent miner and knows his business very well. If there is a bainable deposit on this property, I feel sure that Mr. Grismer will find it and contact us within the next few weeks.

A Sullivan WX 314 portable compressor is on the property now, besides a truck load of mining equipment not yet unloaded.

Not controlled by Applicant ?

Magi Claim, Dry Creek, Silver Lake County, Mont.

The second property is about one mile down Dry Creek, or east of the original discovery. This is known as the Magi Claim of the Montana Fluorspar lease. This property is about 1½ miles closer to the Spring Gulch siding than either the Riverside Copper lease or the Lucky Jack lease. (See Plate 1).

Quoting from a note written by Mr. James A. Scott (son of Mr. F.A. Scott, M.E.D., who is Secretary-Treasurer of the Coeur d'Alene Extension Mines, Inc.), "The seven claims which we (John C. McGee and James A. Scott) have leased near and east of Lime Gulch were taken up by James A. Scott and Thomas A. Gregory in February of 1947 or 1948 for Mr. William C. Robinson of Duluth, Minnesota. The lease was let to us about November of 1948. The seven claims under lease are: Midas, Diadem, Magi, Media, Mystic, Riverside, and Magi. This lease is divided up among six parties as follows:

None of these listed on list of "Supplement to amended claims" potential claims held by applicant

John C. McGee, Wallace	25%
James A. Scott (son of F.A. Scott) Wallace and Superior	25%
Gus Voltolini, Wallace	12½%
Harry Voltolini, Wallace	12½%
Thomas A. Gregory, Superior	12½%
James McGee, Superior	12½%

Mr. Robinson receives 12½% of the gross, less freight.

John C. McGee and the two Voltolini brothers of Wallace own one-half of this claim and are putting up the money for exploration. These men are lessors in Wallace. This gives a rather clear picture of the financial strength behind Montana Fluorspar.

The equipment of this operation is stored at present, pending spring operations.

1949

On March 24, 1949, partially at my suggestion, an outcrop of fluorspar was uncovered by surface stripping. This was done using a rented bulldozer and operator. The outcrop measures 21 feet wide by 15 feet long by 7 feet high, at present. The strike of this outcrop is N 15° W with a vertical dip. Samples were taken by trenching across the outcrop perpendicular to the strike. The analyses of these samples are given below:

	CaF₂	SiO₂
Sample 2, west 10½ feet of outcrop	45.0%	13.1%
Sample 3, east 10½ feet of outcrop	51.3%	11.0%

The fluorspar at this outcrop is in small bands/embedded in what appears to be a highly-altered, fine-grained quartzite. A inspection, it appears that the outcrop as a whole is approximately 33% fluorspar. Acting upon this assumption, I estimate a reserve of 73.35 tons in this deposit. Surface stripping is continuing at the present time.

Underground exploration of this vein is to be continued as soon as a compressor and other equipment can be hauled to the property. A rather elaborate adit approximately 45 feet in length has been driven into the country rock about 75 feet behind the outcrop line of fluorspar and to the west. Mr. A.L. Anderson, Chief Engineer of Sunshine Mines Inc., Kellogg, Idaho, is the technical adviser to the operators of this claim. No doubt he will survey in the outcrop in relation to the present adit and set the miners on a true intersection bearing.

At the end of the adit, a number of small stringers or faults were cut. From the largest fault, nearly two feet in width, a sample of fault gouge was taken. The analysis is as follows:

Sample was analyzed for gold and none was found.

Tax evaluation on the equipment at the mine claim is $100. This does not include a compressor, jackhammers, steel track, pneumatic drills, and ore cars, none of which are on the property at present.

I was told that a set of buildings is to be erected in Lime Gulch near the mine claim as soon as the road permits hauling of lumber.

Nonpatented

It should be mentioned here that the two Voltolini brothers are in the ore dressing and milling business. As soon as enough tonnage is proven to warrant it, they intend to build a mill of their own on the Lucky property. This mill, if built, will handle 60 tons of ore a day, or a carload about every 30 days. This would mean two cars a week or eight per month. At $300 per car, this comes to $2,040 per month. This property can operate at least six months of the year, with a total revenue of $12,240

The Voltolini brothers say that the proposed mill will cost them between $10,000 and $12,000. At the present, they are quietly developing their reserve to see if it warrants a mill. If so, then they will approach us about a loading platform, to be ready in time to receive their ore.

In the event that either of these two men or their representatives approach us concerning a platform, may I suggest a re-check of their ore reserves and a check to see if the building of a mill is in progress. If the ore reserve is enough and the building of a mill is sound judgment, then I would heartily recommend the building of a platform for their use.

The type of platform that seems most practical is a per-car-to-siding type, to be located somewhere near the center of the spring Gulch spur. It should be so placed that the spur could hold at least three empties at a time, the cars when loaded being handled by car movers and another put in place. This type of platform would require a re-routing of the county road in a 'half-moon' curve to give adequate loading space and insure safety.

To summarize, if these people correctly feel the property valuable enough to warrant a 60-ton mill, then I am quite certain that we could enter into a profitable business arrangement by building a loading platform. It may be here noted that Mr. Gus Voltolini would be agreeable to standing one-half of the platform building expenses, if he would be allowed to use his own labor, under tactful direction, and be reimbursed by a freight rebate. This of course voices the opinion of all six men, as they are partners and do the job of sticking together.

Lucky Jack mine, Wilson Creek, Mineral County, Montana

The third property to be discussed is the Lucky Jack mine. This property is located about 1½ miles up the Wilson Creek Valley from the intersection of Wilson and Dry Creeks. (See Plate 1).

controlled by Mining Co.?

Quoting from a note written by Mr. Alvin Bettles, son of Mr. Jay Bettles, "The Wilson Creek fluorspar deposit is leased jointly by Jay Bettles, Henry A. Whitley of San Francisco, Dr. Miedig (Belfour and Guthrie), and Alvin Bettles. Jay Bettles leased the Wilson Creek property from Coeur d'Alene Extension Mines, Inc. in September of 1948. (He holds a ten-year lease). Work was started on the lease by October 15. Equipment was moved on the lease, including a jeep pickup truck, and four men started work on the road to the deposit, which was finished by Nov. 1st".

Equipment on the property at the present time consists of a Worthington type "100" air compressor, two pneumatic drills, one stoper-type drill, 60 feet of track, an ore car, an assortment of drills, picks, shovels, etc., 200 feet of pneumatic air hose, two wheelbarrows, and a 60-foot long by 3-foot wide plank ore chute. The original camp mentioned in Mr. Rose's report of October 29, 1948 is also included here, as it is now used by the Bettles interests. I understand, however, that they are using the camp because of the good will of the Coeur d'Alene Extension Mines, Inc. and not because they have or have even asked to lease the said camp. The tax evaluation on the above equipment is $250.0.

The ore at the Lucky Jack mine seems to be striking N 15° W and dipping 45° W. Occurrence is in beds from one to three feet in width, separated by "walls" or "horses" of fine-grained quartzite with some macroscopic manganese dioxide dentrites. The quartzite has been shattered and penetrated by bull quartz veins and, I believe, fluorspar itself was formed in the huge cracks opened up by the faulting of the rock. Microscopic examination shows the quartzite to be highly altered, probably by the chemical action of the fluorspar. The present quartzite is very poorly cemented and now more nearly resembles a fine-grained sandstone. Upon testing with hydrochloric acid, the rock gives a positive reaction, the carbonate reaction coming from the many tiny cracks in the sample.

Deposited with the fluorspar is a sizable quantity of calcite. This calcite has rhombohedral cleavage and is very finely striated on nearly every cleavage surface. This has been shipped with no ill effects, as calcium carbonate itself is also a flux in the manufacture of iron and steel, in the form of limestone. (See note in Table 1).

Three samples, numbers 4, 5, and 6, were taken of the fluorspar ore. Number 4 and 6 were taken from two separate veins about 18 inches in thickness and striking N 10° W. The dip is 45°. (See plan). Sample number 5 was taken from the mine-run sulphide ore stock pile in the directions indicated on the plan view.

Analyses of the three samples are given below:

	CaF_2	SiO_2
Sample No. 4, 18" vein	84.2%	2.3%
Sample No. 5, Ore pile, 30" x 6'	77.0%	6.2%
Sample No. 6, 18" vein	80.1%	2.8%

Because of the extremely poor method of developing at this mine and the stock piling of ore in the main drift, I am unable to make a just estimate of reserve tonnage. An adit about 50 feet below the workings on a bearing of N 81½° W and extending about 80 feet into the country rock shows no trace whatever of fluorspar. The Bettles interests plan to extend this further in the hope of hitting the vein. My estimate is a reserve tonnage of at least 172.52 short tons, or roughly three carloads.

The estimate is that the Bettles claim has 101.84 tons of ore ready to ship, pending assay returns. This amounts to two carloads.

According to the March News Letter of the Mining Association of Montana, approximately 610 tons of ore was shipped last year at $42.50 per ton.

"(Mr. Alvin Bettles). The price established by Joy Bettles and Balfour-Guthrie Ltd., San Francisco, is $42.50 a ton, F.O.B., Superior, Montana".

Mr. Bettles also writes that one-half dollar per percent will be added for all fluorspar over 85% pure and that one dollar per percent is added for every percent silica under 5%. This price scale arrangement is already showing results. In the removal of the first cars of ore, it was explained that any marginal ore was hand-cobbed out to make sure that the ore met specifications. A rough estimate is that there are two carloads of marginal milling grade ore on the dump. Some of this is lost due to dumping of rock on top. I doubt very much if Balfour & Guthrie, Ltd. realized that the property in which they have an interest would be high-graded and cobbered out as a result of the price scale arrangement.

Quoting from a wire to Mr. J.A. Gilles from Mr. J.J. Bettles on March 21, 194 , "Scott of Wallace & Vises ready to load out minimum 250 tons per month. Contracting this minimum with trucking firm today." Mr. Worthington, apparently the trucking contractor to which Mr. Scott refers, is staying at the camp now. His equipment consists of a caterpillar diesel bulldozer and another old G.M.C. truck.

DRY CREEK DISTRICT
MINERAL COUNTY, MONTANA

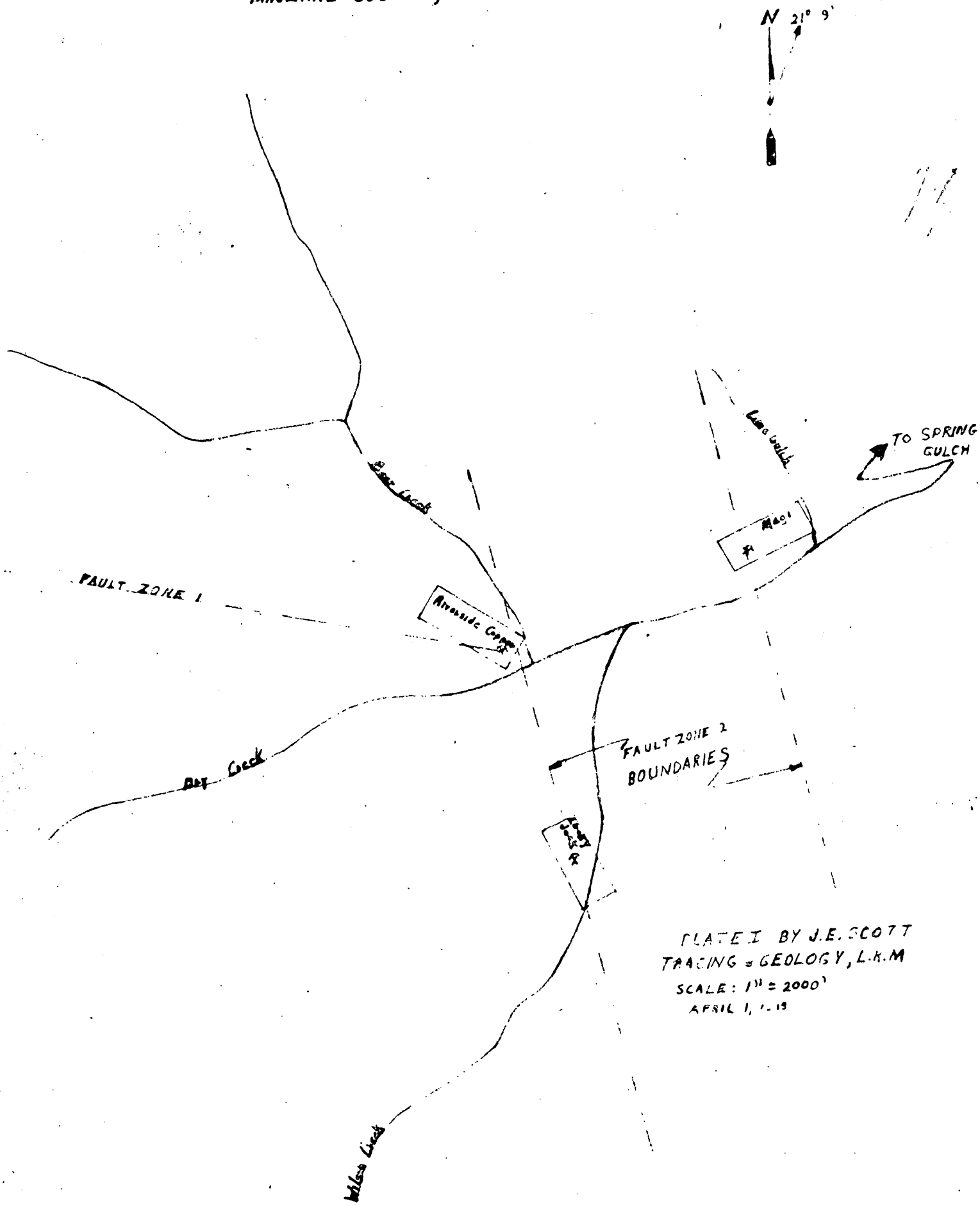


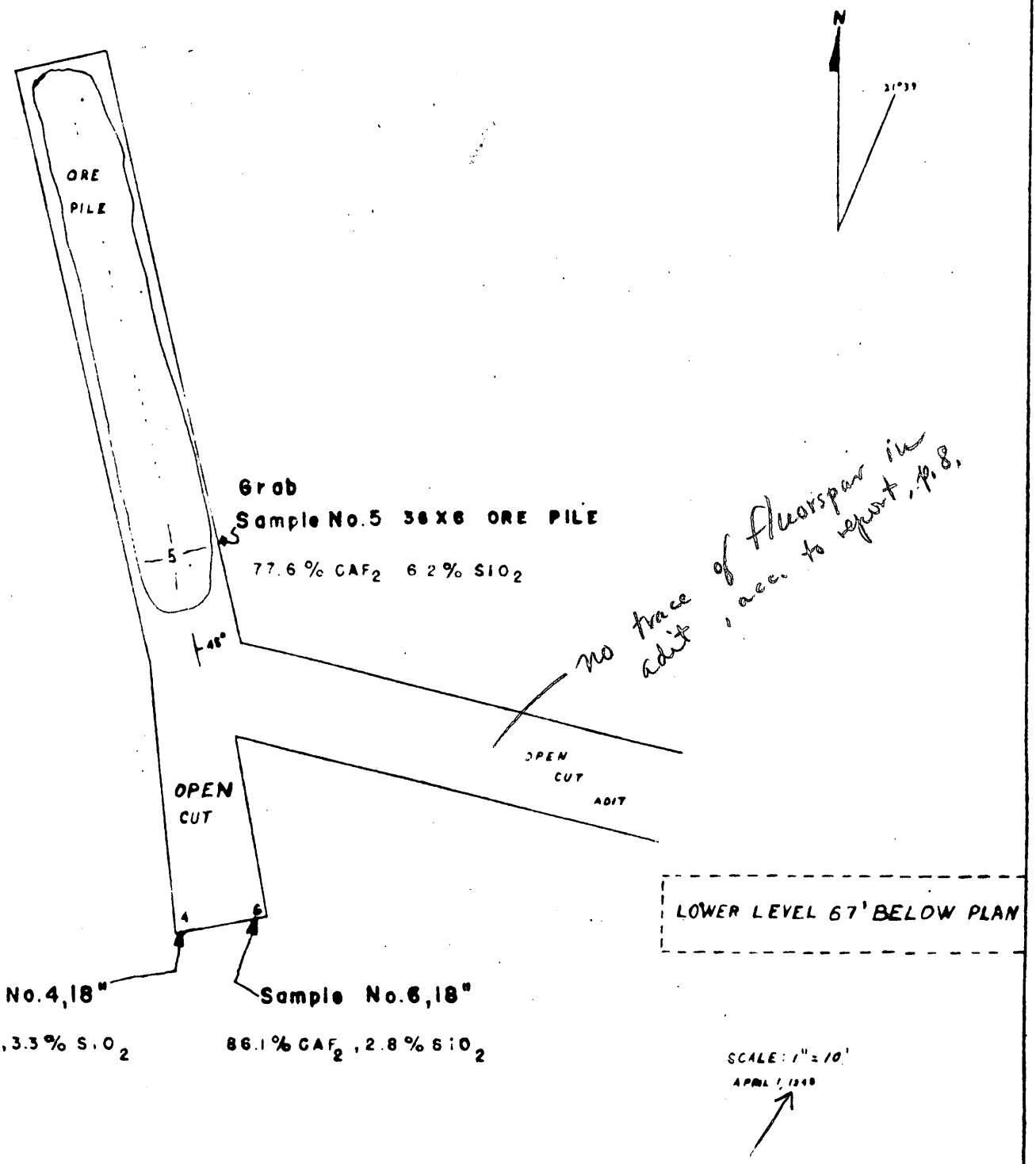
PLATE I BY J.E. SCOTT
TRACING = GEOLOGY, L.K.M
SCALE: 1" = 2000'
APRIL 1, 1-19

NORTHERN PACIFIC RAILWAY GEOLOGICAL DIVISION

PLAN VIEW OF LUCKY JACK MINE, BETTLES LEASE

DRY CREEK DISTRICT

MINERAL COUNTY, MONTANA



ASSIGNMENT OF MINERAL OPTION AND LEASE

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, W. E. Clark of Billings, Montana, as assignor, for and in consideration of One Dollar ($1.00), the receipt whereof is hereby acknowledged, does hereby sell, assign, transfer and set over unto Howe Mining Company, a Corporation, as assignee, all of his right, title and interest in and to that certain Mineral Option and Lease entered into between Superior Fluorspar Company and W. E. Clark, dated January 2, 1951, covering the following described mining property and premises, situate in the County of Mineral, State of Montana, to-wit:

> All of the unpatented lode mining claims of the lessor in the said County of Mineral, as the certificates of location of said claims are of record in the office of the County Clerk and Recorder of Mineral County, Montana, embracing the following: Black Jack No. 1, Black Jack No. 2, Mercury, Lucky Jack, Glory, Hope, Jupiter, Venus, Mars and Saturn; all of said mining claims being located and situated on Dry Creek approximately 13 miles southwest of Superior, Montana, together with the improvements thereon.

The said assignor covenants and warrants that he is the lawful owner of said option and lease, free from liens, encumbrances or adverse claims, and that he has the right to sell and assign the same.

Sale ?

EXECUTED, this _____ day of _____, 1951.

W. E. Clark
Assignor

_____
Wife of W. E. Clark

STATE OF MONTANA)
County of ~~Yellowstone~~ Gallatin) ss.

On this day before me personally appeared W. E. Clark, to me known to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same as his free act and deed.

Given under my hand and seal on the 10th day of January.

My commission expires:
January 4, 1952

Merle E. Rollins
Notary Public
Residing at Bozeman Mont

MERLE E. ROLLINS NOTARY PUBLIC STATE OF MONTANA SEAL

STATE OF MONTANA,)
: ss.
County of _____.)

On this _____ day of _____, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared IVA CLARK, wife of W. E. Clark, known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same.

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

_____
Notary Public for the State of Montana.
Residing at _____.
My commission expires _____.

I certify that I received this instrument for Record on this 16th day of January, 1951, at 3:16 o'clock P M., and that it is recorded in Vol. 3 of M R C Records of Mineral County, State of Montana, on Page 324

Witness my hand and official seal
H W Kirkinger
County Recorder
By Ruth Hunter
Deputy
Fees, $1.00
Return to Ruth Hunter
Superior, Mont.

- 20566 -

Compared

Indexed

MINING LEASE

PARTIES

THIS INDENTURE, Made and entered into the 2nd day of January, 1951, between the SUPERIOR FLUOR-SPAR CORPORATION, a Montana Corporation having its registered office at 1662 Rimrock Road, Billings, Montana, and qualified to transact business in the State of Montana, party of the first part, hereinafter referred to as the "Lessor", and W. K. CLARK of Belfry, Montana, party of the second part, hereinafter referred to as the "Lessee":

W I T N E S S E T H:

DESCRIPTION OF PROPERTY

The Lessor, for and in consideration of the sums hereinafter reserved, and the covenants and agreements hereinafter expressed, and by the Lessee to be kept and performed, has granted, demised and let, and by these presents does grant, demise and let unto the Lessee, the following described unpatented lode mining claims, situated in unorganized Mining District, Mineral County, Montana, located approximately thirteen miles southwest of Superior, Montana, on Dry Creek, to-wit:

BLACK JACK #1	HOPE
BLACK JACK #2	JUPITER
MERCURY	VENUS
LUCKY JACK	MARS
GLORY	SATURN

10

TERM

TO HAVE AND TO HOLD Unto the Lessee for a term of ten (10) years beginning the 2nd day of January, 1951, and expiring at midnight on January 2nd, 1961, unless sooner terminated or forfeited, as herein set forth. Provided, however, that said term shall be subject to renewal at the option of the Lessee for an additional term of ten (10) years upon the terms and conditions of this lease. In the event the Lessee shall elect to renew said lease it shall give the Lessor notice thereof in writing at least six (6) months prior to the 1st day of January, 1961. The Lessee, who is now in possession of said property, agrees from the date hereof to prospect, develop and mine said property in a good and miner-like manner and in a manner necessary to good and economical mining with the end in view of developing said property into a permanent, workable mine and with a further end in view of recovering therefrom the maximum

amount of ore and values consistent with the development and preservation of the same as a workable mine.

YEARLY WORK

The Lessee agrees to complete not less than 200 lineal feet of underground development per year upon said property, such development to consist of drifts, crosscuts, shafts, winzes or raises. Stoping shall not be considered development hereunder. Lessee shall be required to have the work provided for herein completed on or before December 31st of each year during the term of this lease. On or before the 31st day of December of each year the Lessee shall deliver to the Lessor a progress map, which shall show at a scale of not less than one inch per 100 feet, all development and mining done on said property during the last lease year. It is the intention of this agreement that at least 200 lineal feet of development be done on said property each year. Therefore, Lessee shall not be entitled to take credit in subsequent years for development done in a past year or years in excess of said 200 feet, but Lessee shall be required each year to complete a minimum of 200 feet of development work. In the event that the property herein demised shall develop into a paying mine, it is understood and agreed that the work contemplated hereunder shall continue to be exploratory work and shall be in addition to work incident to actual removal of ores.

Will not be due in 1957 approximately

TIMBERING

The Lessee agrees to well and sufficiently timber said mine and to repair and replace all old timber where necessary or advisable in accordance with good mining practice, having due regard at all times to the preservation of said mine as a permanent, workable mine.

The Lessee may cut and use, for timbering in said mine, any suitable timber standing or growing upon said claims. In cutting such timber all brush and slashings shall be piled and burned in accordance with the laws of the State of Montana and the requirements of the United States Forestry Department.

INSPECTION

The Lessor, or its agents, may from time to time, and as often as it desires, enter upon and into all parts of said mine and mining property, and any mill or concentrator used by the Lessee in connection with their operations under this lease for the purpose of inspection, examination and observation. Such inspection shall be made so as not to unnecessarily interrupt or interfere with the Lessee's operation.

MONTHLY REPORTS ON OPERATION

The Lessee agrees to furnish to the Lessor on or before the 10th day of each calendar month, while operating under this lease, a statement in writing showing the number of men employed by the Lessee at said property, the footage, location and character of underground work done, the number of tons of ore, if any, extracted during the preceding calendar month, and the disposition thereof, and a statement of all ores or values shipped or sold during the preceding calendar month, and to whom shipped or sold.

UNDERGROUND WORKINGS TO BE KEPT CLEAR

The Lessee agrees to keep the drifts, shafts, tunnels and other underground workings in said property thoroughly drained and clear of loose rock, debris and rubbish unless prevented by extraordinary mine casualty. Nothing herein contained shall be construed to prevent the Lessee from back-filling stoped out ground with waste in accordance with usual and customary mining practice.

NON-LIABILITY OF LESSOR

The Lessee expressly covenants and agrees to promptly pay for all labor performed and materials and supplies used in the prosecution of all work performed by them under this lease. The Lessee shall notify all persons employed by it in the prosecution of their operations under this lease, and all persons furnishing materials and supplies for use thereon that the Lessee is solely liable therefor and that neither the Lessor nor the demised premises are in any manner liable therefor. The Lessee shall fix and establish regular monthly, semi-monthly, or weekly pay days for the payment of employees, and fix and establish a specified day of each calendar month on or before which all materialmen shall be paid.

NON-LIABILITY NOTICE

At all times during its operations under this lease the Lessee shall keep printed or written notices conspicuously posted at the mine, and at the entrance to any mill or concentrator it may use or operate in connection therewith, stating that it, and it alone, are liable for payment of all labor performed and material furnished and that neither the Lessor nor the said mining property are responsible or liable therefor.

The Lessee shall also post, record and, if necessary, publish any and all other non-liability notices, or notices for protection of laborers or materialmen, required by the laws of the State of Montana with respect to operations of this character.

GUARANTY AGAINST LIENS

The Lessee covenants and agrees to hold the Lessor and the said demised premises free and harmless from any and all attachments, executions, impositions, laborers' liens, materialmen's liens and claims or demands of every kind and nature arising out of and by reason of the operations conducted under this lease.

SUMMARY TERMINATION

If the Lessee shall fail to pay any laborers, mechanics or materialmen for labor performed or materials furnished in connection with their operations under this lease, promptly on the regular established pay days it shall then be optional with the Lessor to forthwith and summarily suspend all work hereunder pending the correction of such defaults, and if such defaults are not corrected within a period of thirty (30) days from service of the notice suspending such operations, then it shall be optional with the Lessor to terminate this lease without further notice. The Lessor may suspend said operation, as herein provided, by giving the Lessee, or its assigns, written notice to suspend.

The Lessee agrees to immediately notify the Lessor of its failure or inability to meet any payroll or payments to materialmen on any regular pay day.

INTERPRETATION

The provision of this lease requiring punctual payment of laborers, mechanics and materialmen, are intended only for the protection of the Lessor's property and to keep it clear of liens, or asserted liens, and shall not be construed as an assumption, actual or implied, on the part of the Lessor or any liability or responsibility for the payment thereof.

WORKMEN'S COMPENSATION

The Lessee shall at all times fully comply with the laws of the State of Montana with respect to providing Workmen's Compensation for the protection of employees.

TAXES

The Lessor shall be liable for, and shall pay, all State, County and School District taxes, if any, upon said property during the life of this lease, and shall pay all severance, net profits or mines license tax, if any, required by the laws of the State of Montana. Provided, however, that any such taxes based or computed upon net profits shall be paid by the parties hereto in proportion to their respective participation in said net profits as hereinafter provided.

SOCIAL SECURITY

The Lessee shall be liable for and shall pay all old age pension and unemployment charges attributable to their operations hereunder, together with any and all other social security taxes, charges or impositions which may now or hereafter be imposed upon said operations.

DEVELOPMENT COSTS

The Lessee shall be solely liable for all pre-production development and exploration costs necessary to bring said demised premises into profitable production and it shall not be entitled to reimbursement therefor out of any future earnings or profits derived from the property.

RENT

The Lessee agrees to pay to the Lessor as rent for said property a royalty upon the gross sales return on all ores produced therefrom. No costs of production other than rail transportation shall be deducted from the gross sales returns upon which said royalty shall be calculated. Payments of royalties shall be made by the purchaser or sales agent directly to the Lessor at its place of business. The

Lessee shall furnish, or cause to be furnished, to the Lessor duplicate sales returns from the purchaser or sales agent showing the quantity, quality or grade, price per ton and gross sales return on each and every shipment of ores from said property. Said royalty shall be calculated upon all ores produced from said property, as follows:

10% of the gross sales value payable to Lessee.

It is also agreed that Lessee shall ship without milling all ores which in the normal course of mining shall be of sufficient grade to permit this practice. The failure of Lessee to make such shipments in good faith shall be grounds upon which this lease may be cancelled.

DEFAULT AND TERMINATION

If the Lessee shall fail to promptly pay laborers, mechanics and materialmen on the regular pay day, as hereinabove provided, the Lessor may forthwith terminate this lease and immediately repossess said property unless the Lessee shall have given notice to suspend the operation pending the correction of the default as hereinabove provided.

If the Lessee shall default in the performance of any of the other terms of this lease the Lessor may give the Lessee notice in writing specifying the particulars of such default, and the Lessee shall have thirty (30) days from the receipt of such notice within which to correct the defaults complained of or to establish the fact that they are not in default. Immediately upon receipt of such notice the Lessee shall advise the Lessor, in writing, of its intention to correct such defaults. If it shall elect not to correct the defaults, it shall so advise the Lessor and it shall have thirty (30) days from the receipt of said notice in which to remove from said demised premises any property owned by them and which is removable under the terms of this lease. On the other hand, if the Lessee shall elect to correct such defaults, it shall notify the Lessor thereof and shall have thirty (30) days from receipt of notice of default in which to correct the same. If they fail to correct such defaults within said thirty (30) days the Lessor may thereupon terminate this lease and

all rights of the Lessee hereunder shall thereupon be forfeited and the Lessee shall have thirty (30) days in which to remove from said demised premises any property belonging to it which is removable under the terms of this lease.

TRANSFER OF PROPERTY

The parties agree that upon the expiration of the term of this lease, or the sooner termination or forfeiture thereof, to effect a business-like and orderly transfer of the property to the Lessor and to conduct the respective operations therein simultaneously and without unnecessary interference one with the other, neither to deny the other admission to said property for such purpose, within any of the time limitations hereinbefore specified.

PORTABLE EQUIPMENT

It is understood that during the course of its operations under this lease, the Lessee may install, or place, in or upon said property certain portable equipment, such as compressors, pumps, hoists, ore cars, slushers, mucking machines, fans, motors, drills, drill steel and hand tools. It is agreed that upon the expiration of the term of this lease, or any sooner termination thereof, the Lessee may remove all of said portable articles, which it may have installed in or upon said property within thirty (30) days from such termination, provided that it is not then indebted to the Lessor on any account whatsoever, and provided further that it is not then indebted for any labor performed or material furnished in the course of its operations under this lease. If it shall be so indebted, but shall furnish to the Lessor proof of the payment of the said indebtedness within ninety (90) days from such termination, it shall then be entitled to remove such portable items, but otherwise the same shall become the property of the Lessor.

PERMANENT STRUCTURES

If, during the term of this lease, the Lessee shall construct any buildings, ore bins, tramways, tracks, water or air pipe, or other structures upon or affixed to the demised premises, upon the expiration of the term of this lease, or the sooner termination thereof

for any reason, the same shall be left in place and become the property of the Lessor.

SETTLEMENT OF ACCOUNTS ON TERMINATION

If, upon the expiration of the term of this lease or the sooner termination or forfeiture thereof for any reason, the Lessee shall be indebted to the Lessor, on any account whatsoever, or if the Lessee shall then be indebted to any laborers, mechanics or materialmen in any sum whatsoever, it shall not remove from said demised premises any of the personal property otherwise removable by it under the terms of this lease until such indebtedness to the Lessor and to said laborers, mechanics and materialmen has been fully paid or waived. This provision shall not be construed to prevent the Lessee in the event of such termination or forfeiture from removing from underground the property removable by it, but the same shall not be removed from the demised premises pending the settlement of the indebtedness aforesaid.

The Lessee expressly covenants and agrees that any indebtedness owed by it to the Lessor and any indebtedness owed by it to laborers, mechanics or materialmen upon the termination or forfeiture of this lease, as aforesaid, shall be, and constitute, a prior lien upon said personal property of the Lessee, and that this lease, if and when recorded, shall in effect constitute a mortgage upon said personal property as security for the payment of the indebtedness aforesaid, if any.

MAPS AND GEOLOGICAL DATA

During the currency of this lease the Lessee shall furnish to the Lessor, from time to time as made, copies of any maps, plats, progress maps, and assay and sampling maps, which he shall prepare or cause to be prepared with respect to said demised premises.

ADDRESS OF PARTIES

Until changed by written notice, the respective addresses of the Lessor and the Lessee, to which any notice required by, or made necessary under this lease, to be regularly given, is as follows:

SUPERIOR FLUOR-SPAR CORPORATION
1662 Rimrock Road
Billings, Montana

E. E. CLARK
Polfry, Montana

All notices given hereunder shall be given by registered mail or telegram, and each party agrees to promptly acknowledge receipt of any notice served by mail or telegram.

LEASE ASSIGNMENT BY LESSOR

Nothing herein contained shall be construed to limit or abridge the right of the Lessor to assign this lease, or any of its rights hereunder, or to sell or mortgage the demised premises, or any part thereof, provided, however, that no rights of the Lessee hereunder shall in anywise be affected, impaired or curtailed by the Lessor's assignment of its rights under this lease, or by the sale or encumbering of the demised premises, or any part thereof. The Lessee shall assign this lease only upon the written consent of the Lessor first had and obtained.

FORCE MAJEURE

It is agreed that neither party hereto shall be held responsible for damages caused by delay or failure to perform hereunder, when such delay or failure is due to fires, strikes, mine accidents, acts of God or other delays beyond the reasonable control of the parties hereto.

CONSTRUCTION OF INSTRUMENT

It is expressly understood and agreed that the Lessor does not, by this lease, or any provision hereunder, retain any control or direction over the operations of the Lessee hereunder other than to require that the same be performed in a good and miner-like manner and with due regard to the development and preservation of said demised premises as a workable mine.

It is expressly understood and agreed that the Lessee is not, and shall not be, construed to be the agent of the Lessor and that the Lessee has no power, right or authority to act for, bind or represent the Lessor in any particular whatsoever, and that the relationship

created by this agreement is that of Lessor and Lessee only.

IN WITNESS WHEREOF, SUPERIOR FLUOR-SPAR CORPORATION has caused these presents to be executed by its duly authorized officers and has caused its seal to be hereunto affixed this 2nd day of January, 1951, and F. E. CLARK has caused these presents to be executed by him, this 2nd day of January, 1951.

SUPERIOR FLUOR-SPAR CORPORATION

By F. E. Clark
President

ATTEST:

O. E. Simpson
Secretary

F. E. CLARK

F. E. Clark
Lessee

~~ATTEST~~

O. E. Simpson
Secretary

STATE OF MONTANA)
County of Yellowstone) ss

On this 2 day of January, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared F. L. Clark and Robert H. Simpson, known to me to be the President and Secretary, respectively, of the SUPERIOR FLUOR-SPAR CORPORATION, the corporation whose name is subscribed to the within instrument, and acknowledged to me that they executed the same.

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

Notary Public in and for the State of Montana, residing at Billings, Montana.

Recorded

Filed for record the 1st day of Feb. A.D. 1951 at 3:12 o'clock P.M. and that it is accepted in Volume 89 of Mortgages on page 318

Recorded at Mineral County, State of Montana on Page 318

Witness my hand and seal

Recorder

Deputy

Fee $

Filed for record the 1st day of Feb. A.D. 1951

Recorder

Form MF-100
(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 #40 2 0 2 9

Date received 9-14-51

Participation

R. N. Howton
Vice President
Howe Mining Co.
Florence, Montana

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

Name and address of applicant

Date September 13, 1951

FILL IN THIS BLOCK

Date of application September 13, 1951

Estimated cost $ 61,000.00

Mineral or metal Fluorspar

Percentage of Government participation

Location of mine Mineral County, Montana

Date of filing MF-100

DMA Docket Number, if available 2 0 2 9

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? Corporation

* *2. If a partnership, state names and addresses of partners.

* *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? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property.

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

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. None available

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)?

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

16—64067-1

* See supplementary sheets.

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.

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

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.

* *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.

* *14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

* 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.

*17. Production: Mine is not in production

(*a*) If mine is in production, furnish the following information:

	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.) See private reports attached

(*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.

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?

* 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.

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.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*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.

(*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.

* 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.

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.

Howe Mining Company
(Name of company)

By R. H. Houston
(Signature of authorized official)

September 13, 1951
(Date)

Vice-President
(Title)

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

*Same as footnote on page 1.

* See supplement

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

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Howton - Howe Mining Company

3. Iva Clark, President, Belfry, Montana
R. N. Howton, Vice President, Florence, Montana
W. E. Clark, Secretary, Treasurer, Belfry, Montana

4. (a) The applicant has been connected with oil and mining companys in an administrative capacity for more than twenty years.

(b) A qualified mining engineer will be employed to supervise the project.

10. (a) The property consists of the following ten (10) unpatented lode mining claims:

Black Jack #1	Hope
Black Jack #2	Jupiter
Mercury	Venus
Lucky Jack	Mars
Glory	Saturn

They are located in Sedtions 25 and 26, T. 17 N., R. 28 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Wilson Creeks in Mineral County, Montana

(b) Same as above

11. The property now known as the Superior Fluorspar Company's property was formerly owned by Coeur d'Alene Extension Mining Company.

12. The property is located about nine airline miles west of Superior, Montana. Access roads to Superior and the Northern Pacific and the Chicago, Milwaukee, St. Paul and Pacific Railroad, the nearest shipping point, consist of about one mile of graded dirt road from the property to a well maintained U.S. Forest Service road. The total distance to Superior by road is about 13 miles. The road connecting the mine and the Forest Service road has steep grades.

13. A number of streams drain the district and have an abundance of water for operating and domestic purposes at all seasons of the year.

Electric power is available about 6 miles north of the property.

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Howton - Howe Mining Company

14. A rather complete camp now exists on the property, including blacksmith shop, bunk houses, cook shack and several other buildings. They will be devoted to the exploration work.

15. The ore could be shipped by railroad with a truck haul of about 13 miles to Superior, Montana. Both the Northern Pacific and C.M. St. P & P railroads serve the area. No milling is contemplated.

16. See attached reports by Walter C. Freshman, A.C.M. Co. Geologist and Lyle R. Myers, Northern Pacific Geologist.

20. The exploration will be conducted to determine the extent, quantity and grade of fluorspar available.

21. The proposed work consists of open trenches normal to the vein cut to a depth of not less than ten feet into the undisturbed vein material and diamond drilling. It is estimated that the work can be completed within eighteen months after the contract has been approved.

22. See Attached reports mentioned in 16 above.

23.* Summary of Cost

(a)	Labor	$ 6000.00
(b)	Supervisors	3600.00
(c)	Repairs to existing facilities	5000.00
(f)	Cost of rental of equipment	7000.00
(g)	Rental value of facilities and equipment owned by operator	1000.00
(h)	Cost of materials and supplies including items of equipment costing less than $50.00 and diamond drilling contract	38,400.00
	TOTAL	$61,000.00

* See following page for breakdown of costs.

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAn

By R. N. Howton - Howe Mining Company

23. (a) Labor

1 Dozer operator	4 mo. @ $600.00 per mo.	$	2400.00
1 Miner	4 mo. @ 450.00 per mo.		1800.00
1 Laborer	6 mo. @ 300.00 per mo.		1800.00
		$	6000.00

(b) Supervisors

Supervisor - engineer	6 mo. @ $600.00 per mo.	$	3600.00

(c)	Cost of necessary repairs to existing facilities including access road and camp	$	5000.00
(d)	Cost of necessary installations or construction of additional facilities		0
(e)	Cost of items of equipment not now owned by the applicant which must be purchased for operations at a cost of $50.00 or more each		0

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

cat and dozer	4 mo. @ $1200.00	$	4800.00
Compressor	4 mo. @ 300.00		1200.00
J ackhammer	4 mo. 35.00		140.00
Pickup truck	6 mo. 150.00		900.00
		$	7040.00

(g)	Rental value of items of equipment now owned by operator Rental and maintenance of existing buildings; and blacksmith shop and equipment	$	1000.00

(h) Cost of materials and supplies

Dynamite and detonators	$	2000.00
Fuel, grease, etc for equipment		6000.00
Move in and out of equipment		1000.00
Assays 2000 @ $3.00		6000.00
Diamond drilling contract 3000 ft. @ $7.00		21,000.00
Misc. and contingencies		2000.00
TOTAL	$	38,400.00

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Howton - Howe Mining Company

24. Time schedule

(Assuming work on the project is initiated May 1, 1952)

May 1952 Move in and accomplish necessary engineering and rehabilitation of camp	$ 10,000.00
June 1952 Excavate trenches and drill	11,000.00
July 1952 Continue excavation and drilling	10,000.00
August 1952 Continue excavation and drilling	10,000.00
September 1952 Continue excavation and drilling	10,000.00
October 1952 Move out equipment, complete sampling and assaying and prepare report	10,000.00

ASSIGNMENT OF MINERAL OPTION AND LEASE

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, W. E. Clark of Billings, Montana, as assignor, for and in consideration of One Dollar ($1.00), the receipt whereof is hereby acknowledged, does hereby sell, assign, transfer and set over unto Howe Mining Company, a Corporation, as assignee, all of his right, title and interest in and to that certain Mineral Option and Lease entered into between Superior Fluorspar Company and W. E. Clark, dated January 2, 1951, covering the following described mining property and premises, situate in the County of Mineral, State of Montana, to-wit:

> All of the unpatented lode mining claims of the lessor in the said County of Mineral, as the certificates of location of said claims are of record in the office of the County Clerk and Recorder of Mineral County, Montana, embracing the following: Black Jack No. 1, Black Jack No. 2, Mercury, Lucky Jack, Glory, Hope, Jupiter, Venus, Mars and Saturn; all of said mining claims being located and situated on Dry Creek approximately 13 miles southwest of Superior, Montana, together with the improvements thereon.

The said assignor covenants and warrants that he is the lawful owner of said option and lease, free from liens, encumbrances or adverse claims, and that he has the right to sell and assign the same.

EXECUTED, this _____ day of _____, 1951.

W. E. Clark
Assignor

_____
Wife of W. E. Clark

STATE OF MONTANA)
County of ~~Yellowstone~~ Gallatin) ss.

On this day before me personally appeared W. E. Clark, to me known to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same as his free act and deed.

Given under my hand and seal on the 16th day of January,

Merle E. Rollins
Notary Public
Residing at Bozeman Mont

My commission expires:
January 4, 1952

MERLE E. ROLLINS
NOTARY PUBLIC
STATE OF MONTANA
SEAL

STATE OF MONTANA,)
: ss.
County of _____.)

On this _____ day of _____, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared IVA CLARK, wife of W. E. Clark, known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same.

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

_____
Notary Public for the State of Montana.
Residing at _____.
My commission expires _____.

Compared

Indexed

- 20566 -

I certify that I received this instrument for Record on this 16th day of January 1951, at 3:16 o'clock P M., and that it is recorded in Vol. 3 of M R C Records of Mineral County, State of Montana, on Page 224

Witness my hand and official seal

W. E. Clark
County Recorder
By Ruth Houston
Deputy

Fees, $1.00

Return to Ruth Houston
Superior, Mont.

MINING LEASE

PARTIES

THIS INDENTURE, Made and entered into the 2nd day of January, 1951, between the SUPERIOR FLUOR-SPAR CORPORATION, a Montana Corporation having its registered office at 1662 Rimrock Road, Billings, Montana, and qualified to transact business in the State of Montana, party of the first part, hereinafter referred to as the "Lessor", and W. E. CLARK of Belfry, Montana, party of the second part, hereinafter referred to as the "Lessee":

W I T N E S S E T H:

DESCRIPTION OF PROPERTY

The Lessor, for and in consideration of the sums hereinafter reserved, and the covenants and agreements hereinafter expressed, and by the Lessee to be kept and performed, has granted, demised and let, and by these presents does grant, demise and let unto the Lessee, the following described unpatented lode mining claims, situated in unorganized Mining District, Mineral County, Montana, located approximately thirteen miles southwest of Superior, Montana, on Dry Creek, to-wit:

BLACK JACK #1	HOPE
BLACK JACK #2	JUPITER
MERCURY	VENUS
LUCKY JACK	MARS
GLORY	SATURN

TERM

TO HAVE AND TO HOLD Unto the Lessee for a term of ten (10) years beginning the 2nd day of January, 1951, and expiring at midnight on January 2nd, 1961, unless sooner terminated or forfeited, as herein set forth. Provided, however, that said term shall be subject to renewal at the option of the Lessee for an additional term of ten (10) years upon the terms and conditions of this lease. In the event the Lessee shall elect to renew said lease it shall give the Lessor notice thereof in writing at least six (6) months prior to the 1st day of January, 1961. The Lessee, who is now in possession of said property, agrees from the date hereof to prospect, develop and mine said property in a good and miner-like manner and in a manner necessary to good and economical mining with the end in view of developing said property into a permanent, workable mine and with a further end in view of recovering therefrom the maximum

amount of ore and values consistent with the development and preservation of the same as a workable mine.

YEARLY WORK

The Lessee agrees to complete not less than 200 lineal feet of underground development per year upon said property, such development to consist of drifts, crosscuts, shafts, winzes or raises. Stoping shall not be considered development hereunder. Lessee shall be required to have the work provided for herein completed on or before December 31st of each year during the term of this lease. On or before the 31st day of December of each year the Lessee shall deliver to the Lessor a progress map, which shall show at a scale of not less than one inch per 100 feet, all development and mining done on said property during the last lease year. It is the intention of this agreement that at least 200 lineal feet of development be done on said property each year. Therefore, Lessee shall not be entitled to take credit in subsequent years for development done in a past year or years in excess of said 200 feet, but Lessee shall be required each year to complete a minimum of 200 feet of development work. In the event that the property herein demised shall develop into a paying mine, it is understood and agreed that the work contemplated hereunder shall continue to be exploratory work and shall be in addition to work incident to actual removal of ores.

TIMBERING

The lessee agrees to well and sufficiently timber said mine and to repair and replace all old timber where necessary or advisable in accordance with good mining practice, having due regard at all times to the preservation of said mine as a permanent, workable mine.

The Lessee may cut and use, for timbering in said mine, any suitable timber standing or growing upon said claims. In cutting such timber all brush and slashings shall be piled and burned in accordance with the laws of the State of Montana and the requirements of the United States Forestry Department.

INSPECTION

The Lessor, or its agents, may from time to time, and as often as it desires, enter upon and into all parts of said mine and mining property, and any mill or concentrator used by the Lessee in connection with their operations under this lease for the purpose of inspection, examination and observation. Such inspection shall be made so as not to unnecessarily interrupt or interfere with the Lessee's operation.

MONTHLY REPORTS ON OPERATION

The Lessee agrees to furnish to the Lessor on or before the 10th day of each calendar month, while operating under this lease, a statement in writing showing the number of men employed by the Lessee at said property, the footage, location and character of underground work done, the number of tons of ore, if any, extracted during the preceding calendar month, and the disposition thereof, and a statement of all ores or values shipped or sold during the preceding calendar month, and to whom shipped or sold.

UNDERGROUND WORKINGS TO BE KEPT CLEAR

The Lessee agrees to keep the drifts, shafts, tunnels and other underground workings in said property thoroughly drained and clear of loose rock, debris and rubbish unless prevented by extraordinary mine casualty. Nothing herein contained shall be construed to prevent the Lessee from back-filling stoped out ground with waste in accordance with usual and customary mining practice.

NON-LIABILITY OF LESSOR

The Lessee expressly covenants and agrees to promptly pay for all labor performed and materials and supplies used in the prosecution of all work performed by them under this lease. The lessee shall notify all persons employed by it in the prosecution of their operations under this lease, and all persons furnishing materials and supplies for use thereon that the Lessee is solely liable therefor and that neither the Lessor nor the demised premises are in any manner liable therefor. The Lessee shall fix and establish regular monthly, semi-monthly, or weekly pay days for the payment of employees, and fix and establish a specified day of each calendar month on or before which all materialmen shall be paid.

NON-LIABILITY NOTICE

At all times during its operations under this lease the Lessee shall keep printed or written notices conspicuously posted at the mine, and at the entrance to any mill or concentrator it may use or operate in connection therewith, stating that it, and it alone, are liable for payment of all labor performed and material furnished and that neither the Lessor nor the said mining property are responsible or liable therefor.

The Lessee shall also post, record and, if necessary, publish any and all other non-liability notices, or notices for protection of laborers or materialmen, required by the laws of the State of Montana with respect to operations of this character.

GUARANTY AGAINST LIENS

The Lessee covenants and agrees to hold the Lessor and the said demised premises free and harmless from any and all attachments, executions, impositions, laborers' liens, materialmen's liens and claims or demands of every kind and nature arising out of and by reason of the operations conducted under this lease.

SUMMARY TERMINATION

If the Lessee shall fail to pay any laborers, mechanics or materialmen for labor performed or materials furnished in connection with their operations under this lease, promptly on the regular established pay days it shall then be optional with the Lessor to forthwith and summarily suspend all work hereunder pending the correction of such defaults, and if such defaults are not corrected within a period of thirty (30) days from service of the notice suspending such operations, then it shall be optional with the Lessor to terminate this lease without further notice. The Lessor may suspend said operation, as herein provided, by giving the Lessee, or its assigns, written notice to suspend.

The Lessee agrees to immediately notify the Lessor of its failure or inability to meet any payroll or payments to materialmen on any regular pay day.

INTERPRETATION

The provision of this lease requiring punctual payment of laborers, mechanics and materialmen, are intended only for the protection of the Lessor's property and to keep it clear of liens, or asserted liens, and shall not be construed as an assumption, actual or implied, on the part of the Lessor or any liability or responsibility for the payment thereof.

WORKMEN'S COMPENSATION

The Lessee shall at all times fully comply with the laws of the State of Montana with respect to providing Workmen's Compensation for the protection of employees.

TAXES

The Lessor shall be liable for, and shall pay, all State, County and School District taxes, if any, upon said property during the life of this lease, and shall pay all severance, net profits or mines license tax, if any, required by the laws of the State of Montana. Provided, however, that any such taxes based or computed upon net profits shall be paid by the parties hereto in proportion to their respective participation in said net profits as hereinafter provided.

SOCIAL SECURITY

The Lessee shall be liable for and shall pay all old age pension and unemployment charges attributable to their operations hereunder, together with any and all other social security taxes, charges or impositions which may now or hereafter be imposed upon said operations.

DEVELOPMENT COSTS

The Lessee shall be solely liable for all pre-production development and exploration costs necessary to bring said demised premises into profitable production and it shall not be entitled to reimbursement therefor out of any future earnings or profits derived from the property.

RENT

The Lessee agrees to pay to the Lessor as rent for said property a royalty upon the gross sales return on all ores produced therefrom. No costs of production other than rail transportation shall be deducted from the gross sales returns upon which said royalty shall be calculated. Payments of royalties shall be made by the purchaser or sales agent directly to the Lessor at its place of business. The

Lessee shall furnish, or cause to be furnished, to the Lessor duplicate sales returns from the purchaser or sales agent showing the quantity, quality or grade, price per ton and gross sales return on each and every shipment of ores from said property. Said royalty shall be calculated upon all ores produced from said property, as follows:

10% of the gross sales value payable to Lessee.

It is also agreed that Lessee shall ship without milling all ores which in the normal course of mining shall be of sufficient grade to permit this practice. The failure of Lessee to make such shipments in good faith shall be grounds upon which this lease may be cancelled.

DEFAULT AND TERMINATION

If the Lessee shall fail to promptly pay laborers, mechanics and materialmen on the regular pay day, as hereinabove provided, the Lessor may forthwith terminate this lease and immediately repossess said property unless the Lessee shall have given notice to suspend the operation pending the correction of the default as hereinabove provided.

If the Lessee shall default in the performance of any of the other terms of this lease the Lessor may give the Lessee notice in writing specifying the particulars of such default, and the Lessee shall have thirty (30) days from the receipt of such notice within which to correct the defaults complained of or to establish the fact that they are not in default. Immediately upon receipt of such notice the Lessee shall advise the Lessor, in writing, of its intention to correct such defaults. If it shall elect not to correct the defaults, it shall so advise the Lessor and it shall have thirty (30) days from the receipt of said notice in which to remove from said demised premises any property owned by them and which is removable under the terms of this lease. On the other hand, if the Lessee shall elect to correct such defaults, it shall notify the Lessor thereof and shall have thirty (30) days from receipt of notice of default in which to correct the same. If they fail to correct such defaults within said thirty (30) days the Lessor may thereupon terminate this lease and

all rights of the Lessee hereunder shall thereupon be forfeited and the Lessee shall have thirty (30) days in which to remove from said demised premises any property belonging to it which is removable under the terms of this lease.

TRANSFER OF PROPERTY

The parties agree that upon the expiration of the term of this lease, or the sooner termination or forfeiture thereof, to effect a business-like and orderly transfer of the property to the Lessor and to conduct the respective operations therein simultaneously and without unnecessary interference one with the other, neither to deny the other admission to said property for such purpose, within any of the time limitations hereinbefore specified.

PORTABLE EQUIPMENT

It is understood that during the course of its operations under this lease, the Lessee may install, or place, in or upon said property certain portable equipment, such as compressors, pumps, hoists, ore cars, slushers, mucking machines, fans, motors, drills, drill steel and hand tools. It is agreed that upon the expiration of the term of this lease, or any sooner termination thereof, the Lessee may remove all of said portable articles, which it may have installed in or upon said property within thirty (30) days from such termination, provided that it is not then indebted to the Lessor on any account whatsoever, and provided further that it is not then indebted for any labor performed or material furnished in the course of its operations under this lease. If it shall be so indebted, but shall furnish to the Lessor proof of the payment of the said indebtedness within ninety (90) days from such termination, it shall then be entitled to remove such portable items, but otherwise the same shall become the property of the Lessor.

PERMANENT STRUCTURES

If, during the term of this lease, the Lessee shall construct any buildings, ore bins, tramways, tracks, water or air pipe, or other structures upon or affixed to the demised premises, upon the expiration of the term of this lease, or the sooner termination thereof

for any reason, the same shall be left in place and become the property of the Lessor.

SETTLEMENT OF ACCOUNTS ON TERMINATION

If, upon the expiration of the term of this lease or the sooner termination or forfeiture thereof for any reason, the Lessee shall be indebted to the Lessor, on any account whatsoever, or if the Lessee shall then be indebted to any laborers, mechanics or materialmen in any sum whatsoever, it shall not remove from said demised premises any of the personal property otherwise removable by it under the terms of this lease until such indebtedness to the Lessor and to said laborers, mechanics and materialmen has been fully paid or waived. This provision shall not be construed to prevent the Lessee in the event of such termination or forfeiture from removing from underground the property removable by it, but the same shall not be removed from the demised premises pending the settlement of the indebtedness aforesaid.

The Lessee expressly covenants and agrees that any indebtedness owed by it to the Lessor and any indebtedness owed by it to laborers, mechanics or materialmen upon the termination or forfeiture of this lease, as aforesaid, shall be, and constitute, a prior lien upon said personal property of the Lessee, and that this lease, if and when recorded, shall in effect constitute a mortgage upon said personal property as security for the payment of the indebtedness aforesaid, if any.

MAPS AND GEOLOGICAL DATA

During the currency of this lease the Lessee shall furnish to the Lessor, from time to time as made, copies of any maps, plats, progress maps, and assay and sampling maps, which he shall prepare or cause to be prepared with respect to said demised premises.

ADDRESS OF PARTIES

Until changed by written notice, the respective addresses of the Lessor and the Lessee, to which any notice required by, or made necessary under this lease, to be regularly given, is as follows:

SUPERIOR FLUOR-SPAR CORPORATION
1662 Shamrock Road
Billings, Montana

W. F. CLARK
Belfry, Montana

All notices given hereunder shall be given by registered mail or telegram, and each party agrees to promptly acknowledge receipt of any notice served by mail or telegram.

LEASE ASSIGNABLE BY LESSOR

Nothing herein contained shall be construed to limit or abridge the right of the Lessor to assign this lease, or any of its rights hereunder, or to sell or mortgage the demised premises, or any part thereof, provided, however, that no rights of the Lessee hereunder shall in anywise be affected, impaired or curtailed by the Lessor's assignment of its rights under this lease, or by the sale or encumbering of the demised premises, or any part thereof. The Lessee shall assign this lease only upon the written consent of the Lessor first had and obtained.

FORCE MAJEURE

It is agreed that neither party hereto shall be held responsible for damages caused by delay or failure to perform hereunder, when such delay or failure is due to fires, strikes, mine accidents, acts of God or other delays beyond the reasonable control of the parties hereto.

CONSTRUCTION OF INSTRUMENT

It is expressly understood and agreed that the Lessor does not, by this lease, or any provision hereunder, retain any control or direction over the operations of the Lessee hereunder other than to require that the same be performed in a good and miner-like manner and with due regard to the development and preservation of said demised premises as a workable mine.

It is expressly understood and agreed that the Lessee is not, and shall not be, construed to be the agent of the Lessor and that the Lessee has no power, right or authority to act for, bind or represent the Lessor in any particular whatsoever, and that the relationship

created by this agreement is that of Lessor and Lessee only.

IN WITNESS WHEREOF, SUPERIOR FLUOR-SPAR CORPORATION has caused these presents to be executed by its duly authorized officers and has caused its seal to be hereunto affixed this 2nd day of January 1951, and F. E. CLARK has caused these presents to be executed by him, this 2nd day of January, 1951.

SUPERIOR FLUOR-SPAR CORPORATION

By F. E. Clark
President

ATTEST:

Secretary

F. E. CLARK

Lessee

~~ATTEST~~

Secretary

STATE OF MONTANA)
County of Yellowstone) ss

On this 2 day of January, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared F. L. Clark and Robert H. Simpson, known to me to be the President and Secretary, respectively, of the SUPERIOR FLOOR-SPAN CORPORATION, the corporation whose name is subscribed to the within instrument, and acknowledged to me that they executed the same.

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

Notary Public in and for the State of Montana, residing at Billings, Montana.

Notarial

Filed for record the 2 day of January A.D. 1951 at 3:12 o'clock P.M. and duly recorded in Book 178 of Mortgages, page 518 records of Missoula County, State of Montana.

Witness my hand and seal

Clerk and Recorder

By Deputy

Fee $ 2.00

Mortgage

Filed for record the 2 day of January A.D. 1951 at 3:12 o'clock P.M. and duly recorded in Book 178 of Mortgages, page 519 records of Missoula County, State of Montana.

Witness my hand and seal

Clerk and Recorder

By Deputy

Fee $ 2.00

Mortgage

- 2 -

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 #40 2087

Date received 9-17-51

Participation

R. N. Howton
Vice President
Howe Mining Company
Florence , Montana

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

Name and address of applicant

Date September 13, 1951

FILL IN THIS BLOCK

Date of application September 13, 1951

Estimated cost $61,000.00

Mineral or metal Fluorspar

Percentage of Government participation

Location of mine Mineral County, Montana

Date of filing MF-100

DMA Docket Number, if available 2087

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? Corporation

* *2. If a partnership, state names and addresses of partners.

* *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? Lessee

6. If owner, state what claims, liens, or encumbrances, if any, are against the property.

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

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. None available

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)?

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

16—64067-1

*See supplementary sheets

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.

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

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.

* *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.

* *14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

* 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.

*17. Production: Mine is not in production

(*a*) If mine is in production, furnish the following information:

	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.) See private reports attached

(*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.

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?

* 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.

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.

(*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.

(*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.

(*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.

* 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.

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.

Howe Mining Company
(Name of company)

By R. U. Howton
(Signature of authorized official)

September 13, 1951
(Date)

Vice president
(Title)

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

*Same as footnote on page 1.

* See supplement

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

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Howton - Howe Mining Company

3. Ive Clark, President, Belfry, Montana
R. N. Howton, Vice President, Florence, Montana
W. E. Clark, Secretary, Treasurer, Belfry, Montana

4. (a) The applicant has been connected with oil and mining companys in an administrative capacity for more than twenty years.

(b) A qualified mining engineer will be employed to supervise the project.

10. (a) The property consists of the following ten (10) unpatented lode mining claims:

Black Jack #1	Hope
Black Jack #2	Jupiter
Mercury	Venus
Lucky Jack	Mars
Glory	Saturn

They are located in Sections 25 and 26, T. 17 N., R. 28 W., and in Sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Wilson Creeks in Mineral County, Montana

(b) Same as above

11. The property now known as the Superior Fluorspar Company's property was formerly owned by Coeur d'Alene Extension Mining Company.

12. The property is located about nine airline miles west of Superior, Montana. Access roads to Superior and the Northern Pacific and the Chicago, Milwaukee, St. Paul and Pacific Railroad, the nearest shipping point, consist of about one mile of graded dirt road from the property to a well maintained U.S. Forest Service road. The total distance to Superior by road is about 13 miles. The road connecting the mine and the Forest Service road has steep grades.

13. A number of streams drain the district and have an abundance of water for operating and domestic purposes at all seasons of the year.

Electric power is available about 6 miles north of the property.

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Boston - Howe Mining Company

14. A rather complete camp now exists on the property, including blacksmith shop, bunk houses, cook shack and several other buildings. They will be devoted to the exploration work.

15. The ore could be shipped by railroad with a truck haul of about 13 miles to Superior, Montana. Both the Northern Pacific and C.M. St. P & P railroads serve the area. No milling is contemplated.

16. See attached reports by Walter C. Freshman, A.C.M. Co. Geologist and Lyle A. Myers, Northern Pacific Geologist.

20. The exploration will be conducted to determine the extent, quantity and grade of fluorspar available.

21. The proposed work consists of open tremches normal to the vein cut to a depth of not less than ten feet into the undisturbed vein material and diamond drilling. It is estimated that the work can be completed within eighteen months after the contract has been approved.

22. See attached reports mentioned in 16 above.

23. Summary of Cost

(a)	Labor	$ 6000.00
(b)	Supervisors	3600.00
(c)	Repairs to existing facilities	5000.00
(f)	Cost of rental of equipment	7000.00
(g)	Rental value of facilities and equipment owned by operator	1000.00
(h)	Cost of materials and supplies including items of equipment costing less than $50.00 and diamond drilling contract	38,400.00
	TOTAL	$61,000.00

See following page for breakdown of costs.

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By A. M. Howton - Howe Mining Company

22. (a) Labor

1 Dozer operator	4 mo.	$600.00 per mo.	$ 2400.00
1 Miner	4 mo.	450.00 per mo.	1800.00
1 Laborer	6 mo.	300.00 per mo.	1800.00
			$ 6000.00

(b) Supervisors

Supervisor - engineer	6 mo.	$600.00 per mo.	$ 3600.00

(c) Cost of necessary repairs to existing facilities including access road and camp $ 5000.00

(d) Cost of necessary installations or construction of additional facilities 0

(e) Cost of items of equipment not now owned by the applicant which must be purchased for operations at a cost of $50.00 or more each 0

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

Cat and dozer	4 mo.	$1200.00	$ 4800.00
Compressor	4 mo.	300.00	1200.00
Jackhammer	4 mo.	35.00	140.00
Pickup truck	6 mo.	150.00	900.00
			$ 7040.00

(g) Rental value of items of equipment now owned by operator
Rental and maintenance of existing buildings; and blacksmith shop and equipment $ 1000.00

(h) Cost of materials and supplies

Dynamite and detonators		$ 2000.00
Fuel, grease, etc for equipment		6000.00
Move in and out of equipment		1000.00
Assays 2000	$3.00	6000.00
Diamond drilling contract 3000 ft.	$7.00	21,000.00
Misc. and contingencies		2000.00
TOTAL		$ 38,400.00

SUPPLEMENT TO APPLICATION FOR EXPLORATION LOAN

By R. N. Howton - Howe Mining Company

24. Time schedule

(Assuming work on the project is initiated May 1, 1952)

May 1952 Move in and accomplish necessary engineering and rehabilitation of camp	$ 10,000.00
June 1952 Excavate trenches and drill	11,000.00
July 1952 Continue excavation and drilling	10,000.00
August 1952 Continue excavation and drilling	10,000.00
September 1952 Continue excavation and drilling	10,000.00
October 1952 Move out equipment, complete sampling and assaying and prepare report	10,000.00

C
O
P
Y

[illegible] FLUORSPAR COMPANY
[illegible]
[illegible] SUPERIOR FLUORSPAR COMPANY
Sections 25 & 26, T. 17 N., R. 28 W.
Sections 30 & 31, T. 17 N., R. 27 W.
[illegible], MINERAL COUNTY, MONTANA

INTRODUCTION

Mr. George W. O'Connor of Superior, Montana, directed the attention of the Geological Department to the Superior Fluorspar Company. Mr. O'Connor is planning on doing some mining and development work on their property and desired geological advice before doing so.

GENERAL GEOLOGY AND ORE TEXTS

The Superior Fluorspar Company's property consisting of 28 unpatented claims is located in sections 25 and 26, T. 17 N., R. 28 W., and in sections 30 and 31, T. 17 N., R. 27 W., near the junction of Dry Creek with Bear and Wilson Creeks nine airline miles west of Superior, Mineral County, Montana. (See index map). The property, at an approximate elevation of 4000 feet above sea level is in the rugged mountainous regions characteristic of western Montana near the Idaho boundary. Steep mountainsides offered many sites suitable for development through tunnels. The area, although denuded of timber by the fire of 1910, is now heavily mantled with small trees and underbrush, but will supply sufficient timber for a small mining operation. A number of streams drain the district and could provide an abundance of water for mining and domestic purposes. A dirt road with steep grades and in poor condition, extends from the mine, one mile down Wilson Creek to join a well maintained Forest Reserve road at a point 15 miles from the Milled Highway, U.S. No. 10, at Superior.

This town is the county seat and nearest source of supplies. Electric power is available 6 miles north of the mine. The northern Pacific Railway and the Chicago, Milwaukee and St. Paul Railway serve the area.

HISTORY AND PRODUCTION

The Superior Fluorspar Company was formerly known as the Coeur D'Alene Extension Mining Company and development work by the latter company, located on Bear Creek was examined by writers of the Geological Department in August 1945. (See Report No. C-217). The present mine workings are located on Wilson Creek approximately one mile east of the older development.

According to the Mining World Directory, dated May 1951 the officers of the Coeur D'Alene Extension Mining Company, Wallace, Idaho are: Perry J. Mosby, President; A. H. Newton, General Manager; William Clark, Vice President and James L. Scott, Manager. Frank Clark is listed as manager of the Superior Fluorspar Company, Superior, Montana. The Coeur D'Alene Extension Mining Company was originally incorporated with 3,000,000 assessable shares of stock having a par value of one cent with a total value of $30,000.00. Their ownership is said to consist of 36 patented claims located in the Dry Creek drainage near Superior, Montana. In 1948 and 1949, the claims were leased by a Joy Settles who is reported to have mined and shipped 310 tons of fluorspar averaging about 95% pure for which he received $42.50 a ton f.o.b. Seattle, Washington. The total production, all from the present workings is reported as nine cars of fluorspar. The Riverside Copper Mining Company, Wallace, Idaho, is said to have sub-leased 18 claims from Joy Settles in 1948 and 1949.

Dr. T. A. Wilson, Kellogg, Idaho, a large stockholder in the Coeur D'Alene Extension Mining Company was president and W. W. Whitman, Wallace, Idaho, was secretary of the company at that time. The company is capitalized with 5,000,000 assessable shares with par value at 5 cents, 799,820 shares have been issued. Their ownership consists of 5 patented claims in the Little North Fork district near Kellogg, Idaho. The property has been idle for some time.

GEOLOGY AND DEVELOPMENT

Pre-Cambrian sediments of the Newland (Wallace) formation, Belt series Algonkian age is the country rock in the vicinity of the Superior Fluorspar Company's property. The general strike of the beds is N. 10°- 20° W. with a 60° northeast dip. A shallow open cut and a short tunnel, now caved, comprise the development work. A short raise and stope extends from the tunnel to the bottom of the south end of the open cut. These workings are shown on the accompanying sketch map. The open cut, 65 feet long, 10 to 20 feet wide, and 6 to 8 feet deep was sunk upon an irregular vein, 2 to 10 feet wide of fluorspar occurring in a harder bed of impure limestone interbedded in argillite. The vein is variable ranging from 2 feet wide in the north end of the cut to 4 feet wide in the south end with irregular enlargements up to 10 feet or more wide in between. Accompanying the veins are a number of small seams and veinlets of fluorspar. The mineralization, consisting of fluorite, calcite and quartz follows the bedding of the limestone and is concordant in dip and strike. Surface drag, due to the steep slopes (30°-42°), has broken and distorted the dip of the structure in the open cut.

COPY

In places brecciated fragments of the limestone bed, partly replaced and surrounded by fluorite, occurs. The fluorite is generally of the green and purple variety and becomes colorless or bleached to white upon exposure to sunlight. The main impurity is calcite occurring as tiny seams and veinlets in the fluorspar. Selective mining and sorting would be necessary to obtain a shipping grade product. The limestone bed with occasional fluorspar "float" is traceable for 1/4 mile or more along the strike and probably is the same bed that was prospected near Bear Creek. The deposit appears to have been formed through bedding plane fissuring followed by vein filling and replacement of a favorable limestone bed by solutions from a deep seated magmatic source. Deposition was probably influenced by local structure and by the composition and texture of the enclosing rock.

Technical

Fluorspar is material that contains sufficient fluorite to be of commercial value. Fluorite (CaF_2) is calcium fluoride and contains 51.1% calcium and 48.9% fluorine. It is the only common fluoride occurring in nature. Fluorspar, depending upon its use is classified into four grades; metallurgical grade, acid grade, ceramic grade and optical grade.

Metallurgical grade comprises about 56.0% of the total United States consumption with the steel industry being the predominant ~~xx~~ user. Specifications for this grade are 70.0% or more effective fluorite with less than 5.0% silica and not more than 0.05% sulphur. It is used as a flux in making steel, ferro alloys, nickel, brass and in foundries making high grade iron castings. It is also used to refine several nonferrous alloys.

Acid grade comprises about [illegible] of the total consumption with most of it used in the manufacture of hydrofluoric acid. Specifications for this grade require 97.0% fluorite and less than 1.0% silica. Barite, lead, zinc, lime and iron are other undesirable impurities that interfere with the manufacture of acid. A large portion of the acid produced is used in making artificial cryolite for the aluminum industry and in processing high octane gasoline. Other uses are in the chemical industry to produce aerosol refrigerant, aerosol insecticide and other chemicals.

Ceramic grade comprising about 15.0% of the total consumption must contain 95.0% or more fluorite with less than [illegible]% silica. It must be colorless and contain traces only, of iron, lead, zinc, and other impurities. Its chief use is in the glass industry in the manufacture of opalescent, opaque and colored glass and enamels. Other uses are in making brick facings, vitrolite and portland cement. It is also used as a bonding agent for emery wheels, carbon electrodes and for certain electric arc welding electrodes.

Optical grade comprises only a minor part of the total consumption. It must be absolutely clear, free of cloudiness or inclusions and contain no cracks or cleavage marks. It may have a slight color. To be commercial the rough pieces should be large enough to cut into clear pieces having a minimum diameter of ½ inch. It is used to correct color and spherical aberrations in small microscopes and telescopes. Artificial lithium fluoride (made from acid grade fluorspar) is also used for the same purpose.

Western Kentucky and southern Illinois are the principal sources of fluorspar in the United States. In 1950 consumption was

was about 600,000 short tons with approximately 1/4 of the total being imported. Mexico is the chief importer with small amounts received from Spain, Germany, Italy and Newfoundland. The Federal Government has placed fluorspar on the list of strategic and critical materials for stockpiling. Consumption is expected to increase and to beat all previous records in 1951.

Present prices as listed in the May 1951 issue of the Engineering and Mineral Journal are as follows: Metallurgical grade fluorspar with 70.0% or more effective flurite is quoted at $48.00 a short ton f.o.b. Illinois-Kentucky mines. Acid grade fluorspar containing 97.0% fluorite is listed at $50.00 a short ton f.o.b. Illinois mines.

Most large consumers buy on contract, specifying a definite tonnage containing a minimum fluorite content and with maximum impurities defined. Most of the fluorspar of commerce is handled through sales agencies or brokers that deal in other raw materials used in the steel, iron, ceramic and chemical industries, and therefore are in close contact with the consumers. Their usual commission is 5.0% of the f.o.b. price.

GENERAL ROW

On the Superior Fluorspar Company's property, a small vein of fluorspar accompanied by irregular replacement of favorable country rock occurs in a narrow bed of limestone interbedded in argillite of the Newland (Wallace) Formation, Belt Series of Alaska Range. At the present time there is insufficient development to estimate the size and extent of the prospect. The limestone bed with occasional fluorspar float is traceable for 1/4 mile or more along the strike.

and it seems reasonable that it will correlate with a similar bed exposed one mile west in the near Julen area. However, the occurrence of minable bodies of fluorspar within this unprospected gap is a matter of conjecture and will require additional development. The access road and mine workings are in poor condition and will require a small expenditure for rehabilitation. A large or even moderate tonnage operation is not practicable with the present development and more work will be necessary to bring additional minable ore into reserve. The present work does not indicate sufficient tonnage of low grade ore to warrant the construction of a mill. The fluorspar is of fair grade and by using selective mining and sorting should meet the requirements for a commercial product. Consumption of all grades of fluorspar is expected to increase this coming year and an increasing demand with probably higher prices is predicted. However, under the present conditions at the Superior Fluorspar Company's property, only a high cost, small tonnage operation is indicated that would be profitable only through a small scale "lessee" type of operation.

Respectfully submitted,

William J. Marshall

WJM/mc

Butte, Montana
June 1941

(COPY)

Billings, Montana
April 1, 1949

Mr. W.H. Gilles
Chief Geologist
Northern Pacific Railway Co.
Billings, Montana

Dear Mr. Gilles:

At your direction, I examined the fluorspar properties in Mineral County, Montana near our Spring Gulch siding.

My instructions were to examine this property with the thought in mind of our Company building a loading platform for the prospective ore at Spring Gulch.

I submit the following report, in which I neither encourage nor discourage the building of said platform.

THE GEOLOGICAL POSSIBILITIES
OF
DRY CREEK AND WILSON CREEK
MINERAL COUNTY, MONTANA
April 1, 1949

The geology of the Dry Creek and Wilson Creek area, Mineral County, Montana, is believed to be directly related to a series of fault zones in a series of Pre-Cambrian quartzites belonging to the Belt Series. Secondary lime occurs in these fault zones.

One of these fault zones, which extends on an average bearing of N 80° W to a traceable distance of nearly two miles, has the original discovery of fluorspar located abutting against it on the north side. This is the present Riverside Copper Company lease. (Plate I). On this prospect only one thin stringer of fluorspar was found to go through to the south side of the outcrop of bull quartz, which now fills the fault zone. I believe that the fluorspar was deposited after the faulting and after the intrusion in the fault zone by the bull quartz. When hand specimens are examined, it is found that the fluorspar deposits itself around and on the quartz stringers in the fluorspar beds.

At the east end of the above mentioned fault zone, a second fault zone striking N 15° W is encountered. This cuts off the first fault zone somewhere near the intersection of Bear Creek and Dry Creek. An outcrop of this so-called fault zone was first noted near the Lucky Jack mine. (See Plate I).

Approximately one mile east of the intersection of Bear Creek and Dry Creek is located the magi claim. The rock here is still striking N 15° W, is shot with bull quartz veins, and a two-foot zone of fault gouge was observed in an underground tunnel at this location.

It seems a safe assumption to me, to assume a fault zone approximately one mile in width. (See Plate I).

Assuming, after detailed study and careful mapping, that the above observations are true, it then appears that there is a considerable area justifying further exploration in both Dry Creek and Wilson Creek valleys.

Uses

Fluorspar has a variety of uses, some of which are tabulated below.

Table 1.

Uses	Percentages of fluorspar and impurities					
	F	Si	$CaCO_3$ (Calcite)	Fe_2O_3 (Less than 40-50 mg)	S	Fines
Hydrofluoric acid	98%	L* 1%	L 1%			
Glass	95%	L 3%	L 1%	L 0.1%		
Flux (Open hearth steel)	85%	L 5%	**		.3%	
Flux (High grade cast iron)	80%	L 6-7%	**			L 15%

(*) L -- Less than
(**) $CaCO_3$ (calcite) is not objectionable here due to its added use as a flux in the form of limestone

In addition to these uses, fluorspar is used in the synthesis of a number of compounds of fluorite used in atomic energy experiments. Other uses are in the making of fluorescent lights and optical parts of microscopes; small amounts are added to water supplies of large cities to arrest tooth decay, and it is used to make cryolite which is used in the manufacture of aluminum.

Deposits of Fluorspar in Dry Creek and Wilson Creek Valleys

The fluorspar deposits in the Dry Creek and Wilson Creek valleys, Mineral County, Montana, are three in number; two in the Dry Creek valley and one in the Wilson Creek valley.

The first and most well known deposit to be found was located in the Dry Creek valley by Joseph Brooks on June 2, 1942. This find is on land owned by Mr. Frank Manning of Superior. It has been developed by the Coeur d'Alene Extension Mines, Incorporated, of Wallace, Idaho. The principal stockholders of this company are Joseph Brooks, C.W. Bross, and F.A. Scott, all of Wallace. Mr. Manning is to be paid a 5 per cent royalty on all profits.

This deposit is located "in the SW corner of T. 17 N., R. 27 W. in Lolo National Forest, 5½ miles from Superior, Montana on a graded, graveled county road, and 6½ miles up Dry Creek on a United States Forest Service, ungraveled, ungraded dirt road". (See Plate I).

I here refer to Mr. George A. Rowe's report of October 19, 1945, on this property. My findings support in detail the report of Mr. Rowe. However, since Mr. Rowe's examination, this property has been leased to the Riverside Copper Company by Jay Bettles, who leased from Coeur d'Alene Extension Mines, Incorporated. (Plate I). A Dr. Mason is one of the brokers of Riverside Copper Company. Mr. J. Grismer and two men are going development work at the south exposure of fluorspar mentioned in Mr. Rowe's report. If I understand Mr. Grismer correctly, they intend to start at the south end strip the surface with a bulldozer in an attempt to uncover a similar deposit.

The fluorspar in the contact of the bull quartz vein is very pure. An analysis in the Geological Survey release of October 9, 1947 by Mr. C.A. Ross is as follows:

Analysis: 96.57% Calcium fluoride
1.18% Silica
.14% Carbonate

As the fluorspar is shot with highly-altered, crumbly quartz, the ore would have to be milled and the gangue separated. This could be easily done, I believe, because in no place is the fluorspar interpenetrated into the quartz.

Colors of the fluorspar vary from white and smoky, to colorless, green, light blue, to purple near the contact, the color getting darker as the country rock is neared. This may indicate that the color of the fluorspar is somewhat dependent upon the amount of iron in the country rock.

At the present time, development work has not proceeded to a point where a tonnage estimate can be made. Heretofore, development of this claim has been extremely peripheral. My opinion is that Mr. Brimmer is a competent miner and knows his business very well. If there is any ore deposit on this property, I feel sure that Mr. Brimmer will find it and count it as within the next few years.

A Gardiner 4 X 4 portable compressor is on the property now, together with truck loads of mining equipment not yet unloaded.

<u>Lucky Strike, Dry Creek, Silver Lake County, Colo.</u>

The second property is about one mile down Dry Creek, or east of the original discovery. This is known as the Lucky Strike of the Montana Fluorspar Lease. This property is about 1½ miles closer to the Spring Gulch siding than either the Riverside Copper Lease or the Lucky Strike Lease. (See plate 1).

Quoting from a note written by Mr. James A. Scott (son of Mr. C. A. Scott, U.S.N.), who is Secretary-Treasurer of the Doctor O'Malone Extension Mines, Inc.), "The seven claims which Mr. John C. Mejec and James A. Scott, have leased near and west of Lake Gulch were taken up by James A. Scott and Thomas M. Gregory in February of 1947 for Scott for Mr. William W. Robinson of Duluth, Minnesota. The lease was let to us about November of 1948. The seven claims under lease are: Alert, Wisdom, Meet, Medic, Westbo, Riverm, and Magi. This lease is divided up among six parties as follows:

John C. Mejec, Alliance	20%
James A. Scott (son of C. A. Scott), Alliance and Superior	20%
Gus Voltolini, Alliance	20%
Harry Voltolini, Alliance	20%
Thomas M. Gregory, Superior	20%
James Mejec, Superior	20%

Mr. Robinson receives 20% of the gross, less freight.

John C. Mejec and the two Voltolini brothers of Alliance own one-half of this claim and are putting up the money for exploration. Thereafter they are joners in alliance. This gives our readers a clear picture of the financial strength behind Montana Fluorspar.

The equipment of this operation is stored at present, pending spring operations.

On March 26, 1949, partially at my suggestion, an outcrop of fluorspar was uncovered by surface stripping. This was done using a rented bulldozer and a tractor. The outcrop measures 41 feet wide by 15 feet long by 7 feet high, at present. The strike of this outcrop is N 15° W with a vertical dip. Samples were taken by trenching across the outcrop perpendicular to the strike. The analyses of these samples are given below:

	CaF₂	SiO₂
Sample 4, about 10½ feet of outcrop	41.8%	13.1%
Sample 5, first 10½ feet of outcrop	51.2%	11.0%

The fluorspar at this outcrop is in small bands embedded in what appears to be a highly-altered, lime-rounded quartzite. Upon inspection, it appears that the outcrop as a whole is approximately 35% fluorspar. Acting upon this assumption, I estimate a reserve of 72.4 tons in this deposit. Surface stripping is continuing at the present time.

Underground exploration of this vein is to be continued as soon as the compressor and other equipment can be hauled to the property. A rather slanted shaft approximately 13 feet in length was recently driven into the country rock about 75 feet below the outcrop line of fluorspar and to the west. Mr. [illegible] Anderson, Chief Engineer of Dunbline Mines Inc., Mellott, Ind., is the technical adviser to the operators of this claim. No doubt he will serve in the capacity in relation to the present shaft and set the miners on a true intersection bearing.

At the end of the shaft, a number of small spur faults were met. Across the largest fault, nearly two feet in width, [illegible] samples were taken. The analysis is as follows:

Sample was analyzed for gold and none was found.

Box evaluation on the equipment at the mineral claim is too. This does not include a compressor, jackhammers, steel track, pneumatic drills, and ore cars, none of which are on the property at present.

I was told that a set of buildings is to be erected in Grand Salem near the mineral claim as soon as the road permits hauling of lumber.

It should be mentioned here that the two Voltolini brothers are in the ore dressing and milling business. As soon as enough tonnage is proven to warrant it, they intend to build a mill of their own on the Angi property. This mill, if built, will handle 60 tons of ore a day, or a carload about every 23 days. This would mean two ore a week or eight per month. At $380 per car, this comes to $3,040 per month. This property can operate at least six months of the year, with a total revenue of $18,240

The Voltolini brothers say that the proposed mill will cost them between $10,000 and $12,000. At the present, they are quietly developing their reserve to see if it warrants a mill. If so, then they will approach us about a loading platform, to be ready in time to receive their ore.

In the event that either of these two men or their representatives approach us concerning a platform, may I suggest a re-check of their ore reserves and a check to see if the building of a mill is in progress. If the ore reserve is enough and the building of a mill is sound judgment, then I would heartily recommend the building of a platform for their use.

The type of platform that seems most practical is a perpendicular-to-siding type, to be located somewhere near the center of the spring which year. It should be so placed that the spur could hold at least three empties at a time, the ore then loaded being handled by car movers and another put in place. This type of platform would require a re-routing of the county road in a "half-moon" curve to give adequate loading space and insure safety.

To summarize, if these people correctly feel the property valuable enough to warrant a 60-ton mill, then I am quite certain that we could enter into a profitable business arrangement by building a loading platform. It may be here noted that Mr. Gus Voltolini would be agreeable to standing one-half of the platform building expenses, if he would be allowed to use his own labor, under tairwood direction, and be reimbursed by a freight rebate. This of course voices the opinion of all six men, as they are partners and do a fine job of sticking together.

Lucky Jack Mine, Wilson Creek, Mineral County, Montana

The third property to be discussed is the Lucky Jack Mine. This property is located about 1½ miles up the Wilson Creek Valley from the intersection of Wilson and Dry Creeks. (See Plate 1).

Quoting from a note written by Mr. Alvin Bettles, son of Mr. Jay Bettles, "The Wilson Creek fluorspar deposit is leased jointly by Jay Bettles, Henry A. Whitley of San Francisco, Dr. Niedig (Belfour and Guthrie), and Alvin Bettles. Jay Bettles leased the Wilson Creek property from Coeur d'Alene Extension Mines, Inc, in September of 1948. (he holds a ten-year lease). Work was started on the lease by October 15. Equipment was moved on the lease, including a jeep pickup truck, and four men started work on the road to the deposit, which was finished by Nov. 1st".

Equipment on the property at the present time consists of a Worthington type "100" air compressor, two pneumatic drills, one stoper-type drill, 60 feet of track, an ore car, an assortment of drills, picks, shovels, etc., 200 feet of pneumatic air hose, two wheelbarrows, and a 60-foot long by 3-foot wide plank ore shute. The original camp mentioned in Mr. Rowe's report of October 29,1945 is also included here, as it is now used by the Bettles interests. I understand, however, that they are using the camp because of the good will of the Coeur d'Alene Extension Mines, Inc. and not because they have or have even asked to lease the said camp. The tax evaluation on the above equipment is $2500.

The ore at the Lucky Jack mine seems to be striking N 10° W and dipping 45° E. Occurrence is in beds from one to three feet in width, separated by "walls" or "horses" of fine-grained quartzite with some megascopic manganese dioxide dentrites. The quartzite has been shattered and penetrated by bull quartz veins and, I believe, fluorspar itself was formed in the huge cracks opened up by the faulting of the rock. Microscopic examination shows the quartzite to be highly altered, probably by the chemical action of the fluorspar. The present quartzite is very poorly cemented and now more nearly resembles a fine-grained sandstone. Upon testing with hydrochloric acid, the rock gives a positive reaction, the carbonate reaction coming from the many tiny cracks in the sample.

Deposited with the fluorspar is a sizable quantity of calcite. This calcite has rhombohedral cleavage and is very finely striated on nearly every cleavage surface. This has been shipped with no ill effects, as calcium carbonate itself is also a flux in the manufacture of iron and steel, in the form of limestone. (See note in Table 1).

Three samples, numbers 4, 5, and 6, were taken of the fluorspar ore. Number 4 and 6 were taken from two separate veins about 18 inches in thickness and striking N 10° W. The dip is 45°. (See plan). Sample number 5 was taken from the mine-run shipping ore stock pile in the directions indicated on the plan view.

Analyses of the three samples are given below:

	CaF_2	SiO_2
Sample No. 4, 16" vein	84.2%	3.3%
Sample No. 5, Ore pile, 30" x 6'	77.6%	8.2%
Sample No. 6, 18" vein	88.1%	2.8%

Because of the extremely poor method of developing at this mine and the stock pilint of ore in the main drift, I am unable to make a just estimate of reserve tonnage. An adit about 50 feet below the workings on a bearing of N 81½° W and extending about 80 feet into the country rock shows no trace whatever of fluorspar. The Bettles interests plan to extend this further in the hope of hitting the vein. My estimate is a reserve tonnage of at least 172.5 short tons, or roughly three carloads.

The estimate is that the Bettles claim has 101.74 tons of ore ready to ship, pending assay returns. This amounts to two carloads.

According to the March News Letter of the Mining Association of Montana, approximately 310 tons of ore was shipped last year at $42.50 per ton.

"(Mr. Alvin Bettles). The price established by Jay Bettles and Balfour-Guthrie Ltd., San Francisco, is $42.10 a ton, f.o.b., Superior, Montana".

Mr. Bettles also writes that one-half dollar per percent will be added for all fluorspar over 85% pure and that one dollar per percent is added for every percent silica under 5%. This price scale arrangement is already showing results. In the removal of the first carload of ore, it was explained that any marginal ore was hand-cobbed out to make sure that the ore met specifications. A rough estimate is that there are two carloads of marginal milling grade ore on the dump. Some of this is lost due to dumping of rock on top. I doubt very much if Balfour-Guthrie, Ltd. realized that the property in which they have an interest would be high-graded and cobbered out as a result of the price scale arrangement.

Quoting from a wire to Mr. W.A. Gillies from Mr. J.J. Bettles on March 21, 194 , "Scott of Wallace's vises ready to load at minimum 250 tons per month. Contracting this minimum with trucking firm today." Mr. Cortwinston, apparently the trucking contractor to which Mr. Scott refers, is stopping at the camp now. His equipment consists of a Caterpillar diesel bulldozer and another old G.M.C. truck.

This truck, I understand, is capable of carrying a nine-tonload of ore, and is equipped with a dump box. The driver (Mr. Worthington) mentioned that the truck would just pull up the grade on the road empty because of the road's condition. Assuming this to be true, I doubt if very much ore will be hauled for at least a month.

When the roads are in shape, the property is equipped to produce about two carloads of ore a week. At an approximate $380 per car, this amounts to a minimum revenue of $1900 for five carloads. The following table shows ore reserves as I have estimated them:

Table 2.

Type of Ore	Number of Tons	Number of Carloads
Shipping ore	101.84	Two
Shipping ore reserves	172.82	Three
Milling ore	100 concentrates	Two
Milling ore reserves	73.38 concentrates	One and one-half

Because of the conflicting reports on the cost of a loading platform it is impossible to recommend or not recommend its construction.

It should be stated here that all tonnage estimates have been made conservatively, following the reasoning that a greater tonnage means more revenue, where a smaller tonnage would mean a loss to the company.

Respectfully,

/s/ Lyle A. Myers

Assistant Geologist

LAM:bc

Copies to:
W.W. Mohnsen
W.R. Challoner
W.H. Ellsworth
L.J. Stiles
C.W. Coil
T.H. Underwood
Agent, Superior, Mont.

DRY CREEK DISTRICT
MINERAL COUNTY, MONTANA

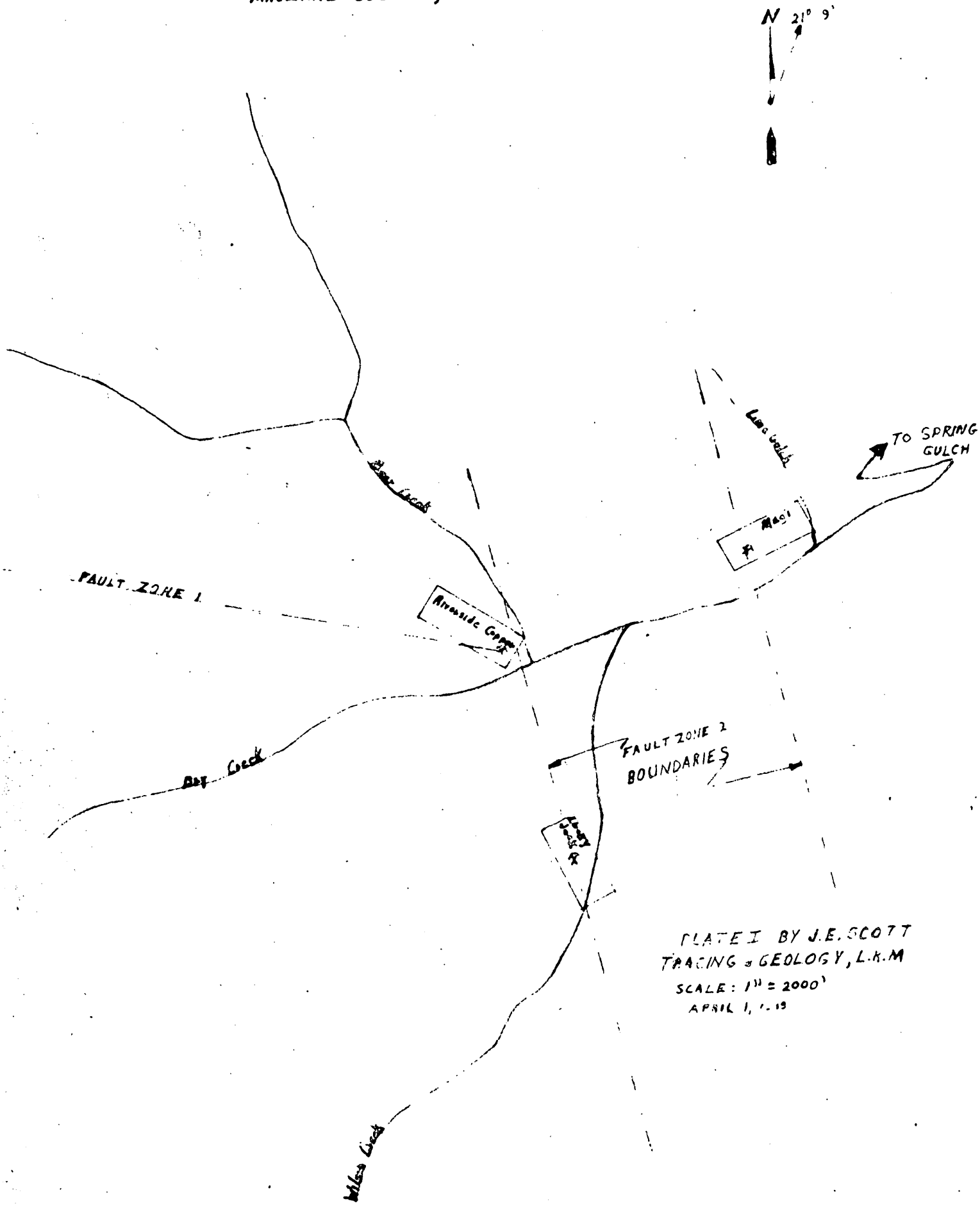


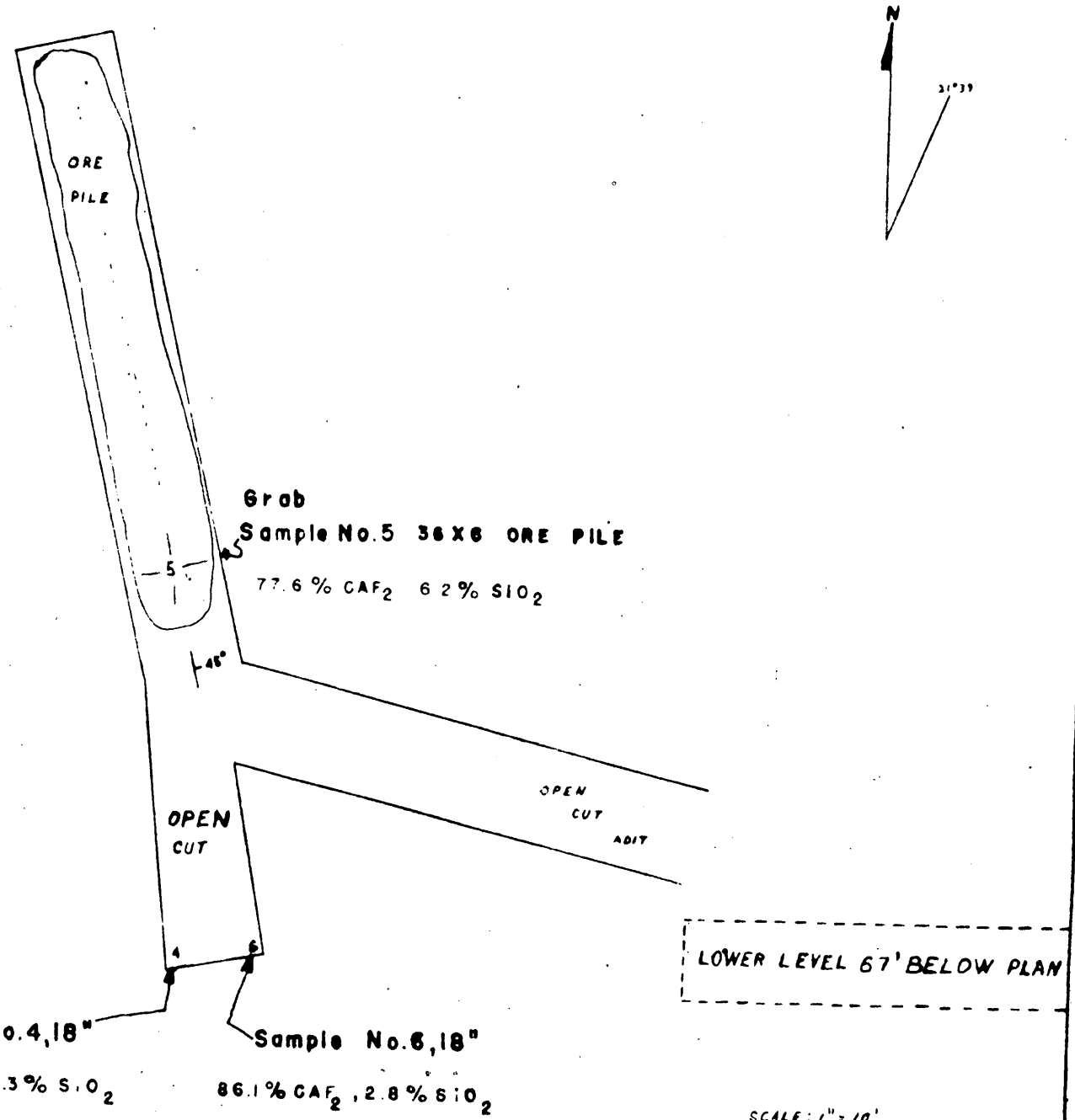
PLATE I BY J.E. SCOTT
TRACING of GEOLOGY, L.K.M
SCALE: 1" = 2000'
APRIL 1, 1-19

NORTHERN PACIFIC RAILWAY GEOLOGICAL DIVISION

PLAN VIEW OF LUCKY JACK MINE, BETTLES LEASE

DRY CREEK DISTRICT

MINERAL COUNTY, MONTANA



SCALE: 1" = 10'

APRIL 1, 1948

L.B.M.

ASSIGNMENT OF MINERAL OPTION AND LEASE

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, W. E. Clark of Billings, Montana, as assignor, for and in consideration of One Dollar ($1.00), the receipt whereof is hereby acknowledged, does hereby sell, assign, transfer and set over unto Howe Mining Company, a Corporation, as assignee, all of his right, title and interest in and to that certain Mineral Option and Lease entered into between Superior Fluorspar Company and W. E. Clark, dated January 2, 1951, covering the following described mining property and premises, situate in the County of Mineral, State of Montana, to-wit:

> All of the unpatented lode mining claims of the lessor in the said County of Mineral, as the certificates of location of said claims are of record in the office of the County Clerk and Recorder of Mineral County, Montana, embracing the following: Black Jack No. 1, Black Jack No. 2, Mercury, Lucky Jack, Glory, Hope, Jupiter, Venus, Mars and Saturn; all of said mining claims being located and situated on Dry Creek approximately 13 miles southwest of Superior, Montana, together with the improvements thereon.

The said assignor covenants and warrants that he is the lawful owner of said option and lease, free from liens, encumbrances or adverse claims, and that he has the right to sell and assign the same.

EXECUTED, this _____ day of _____, 1951.

W. E. Clark
Assignor

_____
Wife of W. E. Clark

STATE OF MONTANA)
County of ~~Yellowstone~~ Gallatin) ss.

On this day before me personally appeared W. E. Clark, to me known to be the person described in and who executed the foregoing instrument, and acknowledged to me that he executed the same as his free act and deed.

Given under my hand and seal on the 10th day of January,

MERLE E. ROLLINS
NOTARY PUBLIC
STATE OF MONTANA

My commission expires:
January 4, 1952

Merle E. Rollins
Notary Public
Residing at Bozeman Mont

STATE OF MONTANA,)
: ss.
County of _____.)

On this _____ day of _____, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared IVA CLARK, wife of W. E. Clark, known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same.

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

_____
Notary Public for the State of Montana.
Residing at _____.
My commission expires _____.

Compared

Indexed

- 20566 -

I certify that I received this instrument for Record on this 16th day of January 1951, at 3:16 o'clock P M., and that it is recorded in Vol. 3 of MRC Records of Mineral County, State of Montana, on Page 224

Witness my hand and official seal

_____ County Recorder
By _____ Deputy

Fee, $1.00

Return to _____

MINING LEASE

PARTIES

THIS INDENTURE, Made and entered into the 2nd day of January, 1951, between the SUPERIOR FLUOR-SPAR CORPORATION, a Montana Corporation having its registered office at 1662 Rimrock Road, Billings, Montana, and qualified to transact business in the State of Montana, party of the first part, hereinafter referred to as the "Lessor", and W. E. CLARK of Belfry, Montana, party of the second part, hereinafter referred to as the "Lessee":

W I T N E S S E T H:

DESCRIPTION OF PROPERTY

The Lessor, for and in consideration of the sums hereinafter reserved, and the covenants and agreements hereinafter expressed, and by the Lessee to be kept and performed, has granted, demised and let, and by these presents does grant, demise and let unto the Lessee, the following described unpatented lode mining claims, situated in unorganized Mining District, Mineral County, Montana, located approximately thirteen miles southwest of Superior, Montana, on Dry Creek, to-wit:

BLACK JACK #1	HOPE
BLACK JACK #2	JUPITER
MERCURY	VENUS
LUCKY JACK	MARS
GLORY	SATURN

TERM

TO HAVE AND TO HOLD Unto the Lessee for a term of ten (10) years beginning the 2nd day of January, 1951, and expiring at midnight on January 2nd, 1961, unless sooner terminated or forfeited, as herein set forth. Provided, however, that said term shall be subject to renewal at the option of the Lessee for an additional term of ten (10) years upon the terms and conditions of this lease. In the event the lessee shall elect to renew said lease it shall give the Lessor notice thereof in writing at least six (6) months prior to the 1st day of January, 1961. The Lessee, who is now in possession of said property, agrees from the date hereof to prospect, develop and mine said property in a good and miner-like manner and in a manner necessary to good and economical mining with the end in view of developing said property into a permanent, workable mine and with a further end in view of recovering therefrom the maximum

amount of ore and values consistent with the development and preservation of the same as a workable mine.

YEARLY WORK

The Lessee agrees to complete not less than 200 lineal feet of underground development per year upon said property, such development to consist of drifts, crosscuts, shafts, winzes or raises. Stoping shall not be considered development hereunder. Lessee shall be required to have the work provided for herein completed on or before December 31st of each year during the term of this lease. On or before the 31st day of December of each year the Lessee shall deliver to the Lessor a progress map, which shall show at a scale of not less than one inch per 100 feet, all development and mining done on said property during the last lease year. It is the intention of this agreement that at least 200 lineal feet of development be done on said property each year. Therefore, Lessee shall not be entitled to take credit in subsequent years for development done in a past year or years in excess of said 200 feet, but Lessee shall be required each year to complete a minimum of 200 feet of development work. In the event that the property herein demised shall develop into a paying mine, it is understood and agreed that the work contemplated hereunder shall continue to be exploratory work and shall be in addition to work incident to actual removal of ores.

TIMBERING

The lessee agrees to well and sufficiently timber said mine and to repair and replace all old timber where necessary or advisable in accordance with good mining practice, having due regard at all times to the preservation of said mine as a permanent, workable mine.

The Lessee may cut and use, for timbering in said mine, any suitable timber standing or growing upon said claims. In cutting such timber all brush and slashings shall be piled and burned in accordance with the laws of the State of Montana and the requirements of the United States Forestry Department.

INSPECTION

The Lessor, or its agents, may from time to time, and as often as it desires, enter upon and into all parts of said mine and mining property, and any mill or concentrator used by the Lessee in connection with their operations under this lease for the purpose of inspection, examination and observation. Such inspection shall be made so as not to unnecessarily interrupt or interfere with the Lessee's operation.

MONTHLY REPORTS ON OPERATION

The Lessee agrees to furnish to the Lessor on or before the 10th day of each calendar month, while operating under this lease, a statement in writing showing the number of men employed by the Lessee at said property, the footage, location and character of underground work done, the number of tons of ore, if any, extracted during the preceding calendar month, and the disposition thereof, and a statement of all ores or values shipped or sold during the preceding calendar month, and to whom shipped or sold.

UNDERGROUND WORKINGS TO BE KEPT CLEAR

The Lessee agrees to keep the drifts, shafts, tunnels and other underground workings in said property thoroughly drained and clear of loose rock, debris and rubbish unless prevented by extraordinary mine casualty. Nothing herein contained shall be construed to prevent the Lessee from back-filling stoped out ground with waste in accordance with usual and customary mining practice.

NON-LIABILITY OF LESSOR

The Lessee expressly covenants and agrees to promptly pay for all labor performed and materials and supplies used in the prosecution of all work performed by them under this lease. The Lessee shall notify all persons employed by it in the prosecution of their operations under this lease, and all persons furnishing materials and supplies for use thereon that the Lessee is solely liable therefor and that neither the Lessor nor the demised premises are in any manner liable therefor. The Lessee shall fix and establish regular monthly, semi-monthly, or weekly pay days for the payment of employees, and fix and establish a specified day of each calendar month on or before which all materialmen shall be paid.

NON-LIABILITY NOTICE

At all times during its operations under this lease the Lessee shall keep printed or written notices conspicuously posted at the mine, and at the entrance to any mill or concentrator it may use or operate in connection therewith, stating that it, and it alone, are liable for payment of all labor performed and material furnished and that neither the Lessor nor the said mining property are responsible or liable therefor.

The Lessee shall also post, record and, if necessary, publish any and all other non-liability notices, or notices for protection of laborers or materialmen, required by the laws of the State of Montana with respect to operations of this character.

GUARANTY AGAINST LIENS

The Lessee covenants and agrees to hold the Lessor and the said demised premises free and harmless from any and all attachments, executions, impositions, laborers' liens, materialmen's liens and claims or demands of every kind and nature arising out of and by reason of the operations conducted under this lease.

SUMMARY TERMINATION

If the Lessee shall fail to pay any laborers, mechanics or materialmen for labor performed or materials furnished in connection with their operations under this lease, promptly on the regular established pay days it shall then be optional with the Lessor to forthwith and summarily suspend all work hereunder pending the correction of such defaults, and if such defaults are not corrected within a period of thirty (30) days from service of the notice suspending such operations, then it shall be optional with the Lessor to terminate this lease without further notice. The Lessor may suspend said operation, as herein provided, by giving the Lessee, or its assigns, written notice to suspend.

The Lessee agrees to immediately notify the Lessor of its failure or inability to meet any payroll or payments to materialmen on any regular pay day.

INTERPRETATION

The provision of this lease requiring punctual payment of laborers, mechanics and materialmen, are intended only for the protection of the Lessor's property and to keep it clear of liens, or asserted liens, and shall not be construed as an assumption, actual or implied, on the part of the Lessor or any liability or responsibility for the payment thereof.

WORKMEN'S COMPENSATION

The Lessee shall at all times fully comply with the laws of the State of Montana with respect to providing Workmen's Compensation for the protection of employees.

TAXES

The Lessor shall be liable for, and shall pay, all State, County and School District taxes, if any, upon said property during the life of this lease, and shall pay all severance, net profits or mines license tax, if any, required by the laws of the State of Montana. Provided, however, that any such taxes based or computed upon net profits shall be paid by the parties hereto in proportion to their respective participation in said net profits as hereinafter provided.

SOCIAL SECURITY

The Lessee shall be liable for and shall pay all old age pension and unemployment charges attributable to their operations hereunder, together with any and all other social security taxes, charges or impositions which may now or hereafter be imposed upon said operations.

DEVELOPMENT COSTS

The Lessee shall be solely liable for all pre-production development and exploration costs necessary to bring said demised premises into profitable production and it shall not be entitled to reimbursement therefor out of any future earnings or profits derived from the property.

RENT

The Lessee agrees to pay to the Lessor as rent for said property a royalty upon the gross sales return on all ores produced therefrom. No costs of production other than rail transportation shall be deducted from the gross sales returns upon which said royalty shall be calculated. Payments of royalties shall be made by the purchaser or sales agent directly to the Lessor at its place of business. The

Lessee shall furnish, or cause to be furnished, to the Lessor duplicate sales returns from the purchaser or sales agent showing the quantity, quality or grade, price per ton and gross sales return on each and every shipment of ores from said property. Said royalty shall be calculated upon all ores produced from said property, as follows:

10% of the gross sales value payable to Lessee.

It is also agreed that Lessee shall ship without milling all ores which in the normal course of mining shall be of sufficient grade to permit this practice. The failure of Lessee to make such shipments in good faith shall be grounds upon which this lease may be cancelled.

DEFAULT AND TERMINATION

If the Lessee shall fail to promptly pay laborers, mechanics and materialmen on the regular pay day, as hereinabove provided, the Lessor may forthwith terminate this lease and immediately repossess said property unless the Lessee shall have given notice to suspend the operation pending the correction of the default as hereinabove provided.

If the Lessee shall default in the performance of any of the other terms of this lease the Lessor may give the Lessee notice in writing specifying the particulars of such default. and the Lessee shall have thirty (30) days from the receipt of such notice within which to correct the defaults complained of or to establish the fact that they are not in default. Immediately upon receipt of such notice the Lessee shall advise the Lessor, in writing, of its intention to correct such defaults. If it shall elect not to correct the defaults, it shall so advise the Lessor and it shall have thirty (30) days from the receipt of said notice in which to remove from said demised premises any property owned by them and which is removable under the terms of this lease. On the other hand, if the Lessee shall elect to correct such defaults, it shall notify the Lessor thereof and shall have thirty (30) days from receipt of notice of default in which to correct the same. If they fail to correct such defaults within said thirty (30) days the Lessor may thereupon terminate this lease and

all rights of the Lessee hereunder shall thereupon be forfeited and the Lessee shall have thirty (30) days in which to remove from said demised premises any property belonging to it which is removable under the terms of this lease.

TRANSFER OF PROPERTY

The parties agree that upon the expiration of the term of this lease, or the sooner termination or forfeiture thereof, to effect a business-like and orderly transfer of the property to the Lessor and to conduct the respective operations therein simultaneously and without unnecessary interference one with the other, neither to deny the other admission to said property for such purpose, within any of the time limitations hereinbefore specified.

PORTABLE EQUIPMENT

It is understood that during the course of its operations under this lease, the Lessee may install, or place, in or upon said property certain portable equipment, such as compressors, pumps, hoists, ore cars, slushers, mucking machines, fans, motors, drills, drill steel and hand tools. It is agreed that upon the expiration of the term of this lease, or any sooner termination thereof, the Lessee may remove all of said portable articles, which it may have installed in or upon said property within thirty (30) days from such termination, provided that it is not then indebted to the Lessor on any account whatsoever, and provided further that it is not then indebted for any labor performed or material furnished in the course of its operations under this lease. If it shall be so indebted, but shall furnish to the Lessor proof of the payment of the said indebtedness within ninety (90) days from such termination, it shall then be entitled to remove such portable items, but otherwise the same shall become the property of the Lessor.

PERMANENT STRUCTURES

If, during the term of this lease, the Lessee shall construct any buildings, ore bins, tramways, tracks, water or air pipe, or other structures upon or affixed to the demised premises, upon the expiration of the term of this lease, or the sooner termination thereof

for any reason, the same shall be left in place and become the property of the Lessor.

SETTLEMENT OF ACCOUNTS ON TERMINATION

If, upon the expiration of the term of this lease or the sooner termination or forfeiture thereof for any reason, the Lessee shall be indebted to the Lessor, on any account whatsoever, or if the Lessee shall then be indebted to any laborers, mechanics or materialmen in any sum whatsoever, it shall not remove from said demised premises any of the personal property otherwise removable by it under the terms of this lease until such indebtedness to the Lessor and to said laborers, mechanics and materialmen has been fully paid or waived. This provision shall not be construed to prevent the Lessee in the event of such termination or forfeiture from removing from underground the property removable by it, but the same shall not be removed from the demised premises pending the settlement of the indebtedness aforesaid.

The Lessee expressly covenants and agrees that any indebtedness owed by it to the Lessor and any indebtedness owed by it to laborers, mechanics or materialmen upon the termination or forfeiture of this lease, as aforesaid, shall be, and constitute, a prior lien upon said personal property of the Lessee, and that this lease, if and when recorded, shall in effect constitute a mortgage upon said personal property as security for the payment of the indebtedness aforesaid, if any.

MAPS AND GEOLOGICAL DATA

During the currency of this lease the Lessee shall furnish to the Lessor, from time to time as made, copies of any maps, plats, progress maps, and assay and sampling maps, which he shall prepare or cause to be prepared with respect to said demised premises.

ADDRESS OF PARTIES

Until changed by written notice, the respective addresses of the Lessor and the Lessee, to which any notice required by, or made necessary under this lease, to be regularly given, is as follows:

SUPERIOR FLUOR-SPAR CORPORATION
1662 Cimrock Road
Billings, Montana

W. E. CLARK
Belfry, Montana

All notices given hereunder shall be given by registered mail or telegram, and each party agrees to promptly acknowledge receipt of any notice served by mail or telegram.

LEASE ASSIGNABLE BY LESSOR

Nothing herein contained shall be construed to limit or abridge the right of the Lessor to assign this lease, or any of its rights hereunder, or to sell or mortgage the demised premises, or any part thereof, provided, however, that no rights of the Lessee hereunder shall in anywise be affected, impaired or curtailed by the Lessor's assignment of its rights under this lease, or by the sale or encumbering of the demised premises, or any part thereof. The Lessee shall assign this lease only upon the written consent of the Lessor first had and obtained.

FORCE MAJEURE

It is agreed that neither party hereto shall be held responsible for damages caused by delay or failure to perform hereunder, when such delay or failure is due to fires, strikes, mine accidents, acts of God or other delays beyond the reasonable control of the parties hereto.

CONSTRUCTION OF INSTRUMENT

It is expressly understood and agreed that the Lessor does not, by this lease, or any provision hereunder, retain any control or direction over the operations of the Lessee hereunder other than to require that the same be performed in a good and miner-like manner and with due regard to the development and preservation of said demised premises as a workable mine.

It is expressly understood and agreed that the Lessee is not, and shall not be, construed to be the agent of the Lessor and that the Lessee has no power, right or authority to act for, bind or represent the Lessor in any particular whatsoever, and that the relationship

created by this agreement is that of Lessor and Lessee only.

IN WITNESS WHEREOF, SUPERIOR FLUOR-SPAR CORPORATION has caused these presents to be executed by its duly authorized officers and has caused its seal to be hereunto affixed this 2nd day of January, 1951, and F. E. CLARK has caused these presents to be executed by him, this 2nd day of January, 1951.

SUPERIOR FLUOR-SPAR CORPORATION

By F. E. Clark
President

ATTEST:

W. B. Simpson
Secretary

F. E. CLARK

F. E. Clark
Lessee

~~ATTEST:~~

W. B. Simpson
Secretary
Witness

STATE OF MONTANA)
County of Yellowstone) ss

On this 2 day of January, 1951, before me, the undersigned, a Notary Public for the State of Montana, personally appeared F. L. Clark and Robert H. Simpson, known to me to be the President and Secretary, respectively, of the SUPERIOR FLUOR-SPAR CORPORATION, the corporation whose name is subscribed to the within instrument, and acknowledged to me that they executed the same.

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

Notary Public in and for the State of Montana, residing at Billings, Montana.

Notarial Seal

Filed for record at 3:15 o'clock P.M. and recorded in Book 89 M of Mortgages on page 12 of Mineral County, State of Montana, on January 18, 1951.

Witness my hand and seal the day and year last above written.

County Recorder

By Deputy

Filed for record at 3:15 o'clock P.M. and recorded in Book 89 M of Mortgages on page 12 of Mineral County, State of Montana, on January 18, 1951.

County Recorder

By Deputy

1-20-51