DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

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DMEA ~~DMA~~ Docket No. 2291

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Routing Slip
(ONE COPY TO U.S.G.S. & ONE TO U.S.B.M.)

To:	CODE 700 Rm. 4070A	Date	12-17-51
To:	Ellis	Date	12-17-51
To:	C.H. Johnson	Date	1-8-52
To:	Ulr Ellis	Date	1/9/52
To:	Operating Comm	Date	4-7-52
To:		Date	
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FILE COPY
SURNAME:

700

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

APR 8 1952

Mr. William C. Isle, Gen. Mgr.
The McLaren Gold Mines Company
Cooke, Montana

Re: Docket No. DMA-2291 (Copper)
Miller Creek Claims
Park County, Montana

Dear Mr. Isle:

We acknowledge receipt of your letter of February 29, 1952, containing the additional data that we requested concerning the results obtained in drilling some of the area covered by the subject application.

The engineers of this agency have made a careful study of your application, subsequent information furnished by you and other available data. They are of the general opinion that altho the area which you propose to prospect is not lacking in indications of mineralization, the possibility of encountering significant copper mineralization is rather limited especially in view of the relatively negative results obtained in previous diamond drilling.

Therefore, we regret to advise you that your application is denied.

If at any time in the future you obtain information that would alter our decision we would be pleased to have you submit it to this agency.

Sincerely yours,

C. O. Mittendorf (cfw)

Acting Administrator
Defense Minerals Exploration
Administration

APPROVED:

Member, Bureau of Mines

Member, Geological Survey

HFKeller/jem 4/1/52
cc to: Adm. heading file
Docket
Messrs. C.H.Johnson, Rm. 3631
Ned Nelson, Rm. 4216 GS
Ellis Keller
Field Team, Region II (2)

3/28/52 gla

IN REPLY REFER TO:

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

March 28, 1952

Memorandum

To: Mr. E. Wm. Ellis

From: Ned E. Nelson

Subject: DMEA-2291 McLaren Gold Mines Company, Cooke, Park County, Montana.

Comment

The new information furnished by Mr. Hisle of McLaren Gold, especially the drill logs, is an assistance, although belated.

Mr. Hisle seems to have established his inference that beds of the Gros Ventre shale and limestone underlie the Miller Creek Valley. The sections of the Lovering report B-B' and C-C' indicate this is a probability as there are several outcrops between the two sections which suggest as much.

Two of the holes, 50-3 and 51-6, penetrated the bed or beds and entered the underlying monzonite. No appreciable mineralization was found at the contact nor elsewhere in the holes.

Holes 50-4 and 51-3 encountered low values and this may be more notable; both encountered dykes. In 50-4 at 166-169, a black porphyry dyke is recorded and in 51-3, two feldspar porphyry intersections are given, 160-162 and 181-188.

These dykes may or may not be significant, but Beeson's map of the McLaren Gold Mine area shows several dykes and it is possible they represent a more interesting stage of intrusive action than does the much more prominent monzonite porphyry.

The grade of the ore at the McLaren Mine is marginal and it is mined by open cut methods. From here it looks as though costs would be higher in Miller Creek area due to overburden and the overlying rocks. The copper recovered at the McLaren mine is practically a by-product of the gold and silver operation.

The chances of finding material with enough copper to make a copper mine are small. A field team examination is not warranted.

N. E. Nelson

Ned E. Nelson
Geologist

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GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

March 28, 1952

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N. E. Nelson

Ned E. Nelson
Geologist

3/26/52 rgla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

March 25, 1952

Memorandum

To: E. W. Ellis, DMEA

From: C. H. Johnson, Bureau of Mines

Subject: McLaren Gold Mines Company, DMEA-2291, Exploration Application, Miller Creek Claims (Copper) Park County, Montana

I have studied Mr. Hisle's letter of February 29 to you, and the attached drill logs. I can see no justification for the proposed exploration whatever. In fact, it is difficult to understand why this group of claims was located or is being held. The applicant makes no mention of any mineralization on them. His (Hisle's) report points out (1) the presence of the monzonite porphyry supposed to be the source rock, (2) the presence of the Gros Ventre formation which is the host rock at the Daisy Pass and other nearby deposits and (3) some inferred but invisible faulting within the property that supposedly creates a favorable situation. Evidently, there are no ore outcrops or gossans to be seen. None of the 6 holes drilled on the property found ore, though two found weak mineralization. (The better of the two was not in the Gros Ventre, but the Gallatin).

About the only justification for the proposed drilling, so far as I can tell, is the apparent complexity of the geologic structure and the complete cover of alluvium - anything could happen!

I think I would deny the application without benefit of a Field Team referral. But if you and my geological colleague Mr. Nelson feel otherwise, I won't object very much.

The docket is going on to Mr. Nelson.

C. H. Johnson

C. H. Johnson

Noted

Copy to - Mr. Nelson
Mr. Keller
C. H. Johnson
Base Metals Branch
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

March 25, 1952

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C. H. JOHNSON

C. H. Johnson

Copy to - Mr. Nelson
Mr. Keller
C. H. Johnson
Base Metals Branch
Files

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BUREAU OF MINES
WASHINGTON 25, D. C.

March 25, 1952

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C. H. Johnson

Copy to - Mr. Nelson (with docket)
Mr. Keller
C. H. Johnson
Base Metals Branch
Files

The McLaren Gold Mines Company

Cooke, Montana

February 29, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 3 - 1952

Mr. Ernest Wm. Ellis, Acting Chief
Rare & Misc. Metals Division
Department of the Interior
Defense Minerals Administration
Washington 25, D.C.

Re: Docket No.DMEA-2291
(copper) Exploration
Loan, Miller Creek
Claims

Dear Mr. Ellis:

The following is submitted in answer to the questions of your letter dated January 15, 1952 and addressed to Mr. C.G. Grimes of Dayton 9, Ohio.

Question No.1:
Enclosed are two maps, the first is a four hundred scale map of the Miller Creek area and shows the location of the proposed diamond drill holes as well as those already drilled. The proposed drill holes are indicated by a circle enclosing a number, the number indicates the order in which it is proposed the drill holes will be drilled.

The second map is a 1,000 scale map which shows the location of the Miller Creek Claims in relation to the known productive properties of the area, as well as the major geological structures of the area. In the immediate area of the Miller Creek Claims are shown the following claims which have production records:

The Alice E, which has produced at least 2,500 tons of $14.00 gold-copper ore. It is reported that mining was discontinued when the oxidized ore was exhausted and pyritic gold-copper ore was encountered.

The Daisy Claim, from which was produced some of the first ore in the district. Production records of this property are not available but it is reported that considerable ore was shipped from the property and later a stamp mill was built to treat ore not of high enough grade to stand freight charges. A portion of the old mill is still standing.

The Homestake Claim, from which has come a substantial production and on which there still remains considerable ore. On the strength of the ore on this claim the Parkmont Mining Company built a 100 ton mill which operated intermittently over a

three year period. Actual production figures are not available but it is known that the ore averaged between $10.00 and $12.00 per ton with values about equally divided between gold and copper, high-grade pockets from the claim reportedly assayed 3 oz. gold per ton and 18% copper. Ore is now exposed on this claim but the increasing ratio of overburden to ore render further open cut mining too expensive to be economical feasible.

The Contact Claim covers a small exposure of ore that has given some very high assays, a picked sample, taken by the writer, assayed 3.70 oz. gold per ton, 12.9 oz. silver per ton and 20.7% copper.

The Daisy Pass Group of Claims owned by the McLaren Gold Mines Co. have been the largest producer of the area. During the past ten years approximately 400,000 tons of ore averaging 0.25 oz. gold per ton and in excess of 1% copper have been mined. At the present time there are approximately 60,000 tons of ore blocked out that will average 0.25 oz. gold per ton and 1.4% copper.

Question No.2:

As stated above, the proposed diamond drill holes are shown on the 400 scale map indicating their relationship to known geology and drill holes Nos. 50-4&5 and 51-4,5,&6. It is to be understood that the information gained as the drilling program progresses and that gained from the spontaneous polarization survey will bear heavily on the location of subsequent drill holes and the order as now indicated may be changed.

Question No.3:

Enclosed with this letter you will find logs for all of the diamond drill holes that have been drilled on the Miller Creek Claims todate.

Question No.4:

The spontaneous polarization survey should be carried out during the first portion of the 1952 season but it does not follow that the diamond drill program should be delayed until completion of this geophysical work. Considerable is now known of the geology and ore

genesis of the area and this serves as the main basis for our program, however, as the productive ore bodies of the area have been relatively near the surface and of high pyritic content, it is very possible that additional data can obtained by the spontaneous polarization survey.

Question No.5:

As the Miller Creek area offers geological conditions very similar to those in which the other ore bodies of the district have been found, it is believed these claims present a logical area for further prospecting. All of the pyritic gold-copper ore of the district has been found to occur under similar geological conditions, as the McLaren Gold Mines Co. owned Daisy Pass Group is the most highly developed ground in the area it is well to consider the genesis and structure of this ore body. This ore body, like all other gold-copper ore of the district, occurs in the Gros Ventre sedimentaries near the intrusive monzonite porphyry. In most instances the Gros Ventre has been highly metamorphosed by the intrusive monzonite and the ore body is cut by numerous dike and sills branching from the main intrusive body. The dikes and sills as well as the main contact formed channels which conducted the high temperature mineralizing solutions to their points of deposition in the Gros Ventre. There seems to be no doubt but that all mineralizing solutions of the area emanated from the monzonite porphyry magma.

Considering these known factors of the ore bodies of the district, it can be said that all the required geological conditions, for the formation of an ore body, are present in the Miller Creek area.

Numerous exposures of the Gros Ventre sedimentaries are to be found through out the area.

Henderson Mountain is formed by the same intrusive monzonite porphyry that formed Red Mountain and mineralized the Daisy Pass Claims.

It has been proven that numerous dikes and sills of the monzonite have penitrated deep into the Miller Creek area.

In addition the Miller Creek Claims cover a zone of pre-mineral shearing and intersecting

faults that could serve as conducting channels for mineralizing solutions.

To the east and south-east of the Miller Creek area there are a number of small lead-silver ore bodies. These occur in the Gallatin Limestone but the intrusive monzonite porphyry of the area is also the source of their mineralization. The largest producer of lead in the district is the Irma Mine on Republic Mountain.

Very truly yours,

William H. Hisle

William H. Hisle
General Manager

WHH:h
Enc. 400 scale map
1000 scale map
Drill Logs

cc: Mr. Owen B. Jones
Mr. C. G. Grimes

515 Kramer Road
Dayton, 9, Ohio

1/28/52 glm

January 26, 1952

Defense Minerals Administration
Washington, 25, D.C.

Gentlemen;

Attention Ernest Wm. Ellis, Acting Chief
Rare & Misc. Metals Div.

Upon the return of Mr Wm. H. Hisle, our Gen'l. Mgr., to our office at Cooke, Montana, he will supply the information & maps requested in your letter to me of the 15th January, 1952. This will be some time after the first of March.

Sincerely yours,

C. G. Grimes

C. G. Grimes, Treas.,

The McLaren Gold Mines Co

cc-WHH

DMEA-2291

Department of the Interior
Defense Minerals Administration
RECEIVED
JAN 28 1952

700
FILE COPY
SURNAME:

Copy

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

Air Mail

JAN 15 1952

Mr. C. G. Grimes
Mclaren Gold Mines Co.
515 Kramer Road
Dayton 9, Ohio

Re: Docket No. DMA-2591 (Copper)
Exploration Loan
Miller Creek Claims

Dear Mr. Grimes:

Your subject application, for financial assistance in the exploration of the Miller Creek claims in the amount of $29,180.00 is being studied by this department.

To permit us to understand more clearly the proposed exploration work and judge the merits of your application, kindly furnish us with the following information:

1. A map showing the relative locations of the Miller Creek claims with adjacent mine workings, ore exposures and geological structures of importance.

2. The location of the proposed diamond drill holes in relationship to geological structures and diamond drill holes No's. 50- 4 and 5 and 51- 4,5 and 6.

3. Logs or information of importance gained from previous drilling in this area.

4. Your opinion as to the advisability of completing the spontaneous polarization survey before doing the diamond drilling.

5. Any information that would be helpful in deciding the proposed exploration work and the possibilities of encountering commercial ore bodies.

When we have received this information we shall be pleased to continue the study of your application.

Sincerely yours,

Ernest Wm. Ellis

Ernest Wm. Ellis, Acting Chief
Rare & Misc. Metals Division

HFKeller/jcm 1-11-52
cc to: Adm. Reading File
1- 1-15-52 Docket
T.O. Messrs. Johnson, C.H. 3621
Nelson Ned 4216 G.S.
Keller
Ellis
Field Team, Reg. II (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

gla

January 9, 1952

Memorandum

To: E. W. Ellis, Rare and Miscellaneous Metals Branch, DMEA

From: C. H. Johnson

Subject: DMEA 2291 - McLaren Gold Mines Company, Park County, Montana

Applicant has justified this project wholly by means of speculative geological arguments. These are somewhat unconvincing, in my opinion. Furthermore, as the applicant furnishes no information regarding showings of mineralization or other possible guides to the location of drill holes, the work would seem to me to be based on arbitrary spotting of holes and would be extremely risky.

Applicant does not describe the proposed work in sufficient detail to judge whether or not the estimates of time and cost are reasonable.

The proposed self-potential geophysical survey may or may not be advisable. If it is to be done, it should of course be done before the drilling is undertaken.

I think the applicant should be asked to present a specific and detailed exploratory program if he wishes the application to receive serious consideration. Among other things, he should delimit the area to be explored, state where he proposes to spot at least the first few holes, and give reasons for such locations. Until this is done, a field referral would seem to me inadvisable.

The entire docket is returned herewith.

C. H. Johnson

C. H. Johnson, Chief
Base Metals Branch

Attachment

CHJohnson/ht

Copy to Mr. Nelson - Rm.4216 GSA Bldg.
Minerals Division
Base Metals Branch
Files

IN REPLY REFER TO:

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

January 2, 1952

Memorandum

To: ~~Operating Committee~~ E. W. Ellis

Re: DMEA-2291

From: Mr. N. E. Nelson

Subject: DMEA 2291, The McLaren Gold Mines Company, Cooke, Park County, Montana

Summary

At the McLaren Gold Mine the value of the copper production is about one-half that of the gold and silver. If the ground to be tested should be no better, the potential, as a source of copper, is small.

Since the project is based wholly on theory which is not supported by pertinent up-to-date maps or relevant data, this application should not be referred to the field team. A better developed application could be of interest.

Analysis

This application appears to have been made in two parts. In July '51, ~~and~~ Form MF-100 was filed along with supporting financial statements, a report by Malcit and Jerome dated 1946, and a report by J. J. Besson dated December 26, 1938. The two reports deal largely with ore reserve estimates of those dates.

On December 13, 1951, an MF-103 was filed as a formal application for 1/2 of $29,180.00; $22,330 of the total would be used for diamond drilling to probe for a suspected contact zone, which might be ore bearing; $2,000.00 for a spontaneous polarization survey, and the remainder for bulldozer and truck hire.

In the application, Question No. 22 is answered by a geological report by W. M. Hisle, General Manager. In the report the author develops his reasons for thinking orebodies comparable to those at nearby mines might be found in McLaren Gold Mine's, Miller Creek claims. The docket contains no map showing the location of the claims but Lovering's geologic map (The New World or Cooke Mining District, Park County, Montana, 1929) shows such a stream and the distance given, as from Cooke - 3 miles - serves to roughly locate the claim area.

With the Lovering map, which must be relied upon since nothing similar accompanies the application, are sections largely diagramatic, which tend to support Mr. Hisle's theory that the rock relationships which obtain and "make" ore at the Daisy, Henderson and McLaren Mines may exist beneath the overburden in Miller Creek Valley and all conditions being right, other orebodies might be expected. In general the gold and copper are found in contact metamorphosed rocks of the Gros Ventre formation. (Interbedded shale, limestone and flat pebble limestone conglomerate - Lovering). A large very irregular plug of monzonite porphyry intrudes the series of sediments which, under certain conditions were altered and mineralized. Sizable orebodies have been developed at the McLaren Gold Mine. Maloit and Jerome credited the flat upper - oversill - orebody with 399,844 tons of 0.297 oz. Au and 1.25% Cu in 1946.

The following production figures are given in the application:

	1948	1949	1950	1951
Tons	38,179	39,139	28,027	3,500 monthly
Cu. lbs.	379,000	396,000	520,000	
Ag. Oz.	7,700	6,300	8,600	
Au. Oz.	5,100	5,600	5,700	
Cu. per ton	10#	10#	19.25#	
Cu. % ton	0.5%	0.5%	0.96%	

Supporting data are not given which would establish these "round" figures. The present company has a deficit balance, but the red figures are shown as being slowly reduced. According to the application at 3,500 tons per month, there was a net profit of about 91¢ per ton realized during the period ended October 31, 1951. If the Maloit and Jerome reserve figures are sustained, the oversill orebody will account for 3,000 to 4,000 tons of copper. Only a guess can be made since percentages of recovery figures are not given for any of the metals.

The Beeson report (1938) shows the tabular ore zone to be 1200 feet long and from 100 to 400 feet wide. The thickness varies, but is said to average 20 feet. A further 900 feet of length is shown as possible. No maps accompany the Maloit and Jerome report and it is not known how their orebody (1946) compared with Beeson's of 1938.

Such an orezone presents the maximum possible area as a target for prospecting with drill holes.

Peculiar and special conditions are responsible for the orebodies in the Cooke area. Mr. Hisle is probably correct in assuming that, in general, the conditions in the Miller Creek valley are likely for the creation of favorable zones, in fact the Lovering map and sections B - B' and C-C' show what should be prime places to prospect and Plate 16 shows upward of ten prospects and mines in the Miller Creek areas of the sections. Up to the time of the Lovering report (last work in 1925) no mines of lasting importance had been developed. Of results since then we have no information. (The McLaren Mine is not mentioned by Lovering and his map is probably quite out of date.) Hisle mentions drill holes 50-3, 50-4, 51-4, 51-5, and 51-6, but their locations are not given. If they are in the general B-B' section area, their findings should help to establish the validity of that hypothetical section and the Hisle theory which the section may have encouraged.

Evidently Nelson did not have the map and sections furnished by applicant

N. E. Nelson.

Ned E. Nelson
Geologist

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

January 2, 1952

Memorandum

Re: DMEA-2291

To: E. W. Ellis ~~Operating Committee~~

From: Mr. N. E. Nelson

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The Beeson report (1938) shows the tabular ore zone to be 1200 feet long and from 100 to 400 feet wide. The thickness varies, but is said to average 20 feet. A further 900 feet of length is shown as possible. No maps accompany the Maloit and Jerome report and it is not known how their orebody (1946) compared with Benson's of 1938.

Such an orezone presents the maximum possible area as a target for prospecting with drill holes.

Peculiar and special conditions are responsible for the orebodies in the Cooke area. Mr. Hisle is probably correct in assuming that, in general, the conditions in the Miller Creek valley are likely for the creation of favorable zones, in fact the Lovering map and sections B - B' and C-C' show what should be prime places to prospect and Plate 16 shows upward of ten prospects and mines in the Miller Creek areas of the sections. Up to the time of the Lovering report (last work in 1925) no mines of lasting importance had been developed. Of results since then we have no information. (The McLaren Mine is not mentioned by Lovering and his map is probably quite out of date.) Hisle mentions drill holes 50-3, 50-4, 51-4, 51-5, and 51-6, but their locations are not given. If they are in the general B-B' section area, their findings should help to establish the validity of that hypothetical section and the Hisle theory which the section may have encouraged.

N. E. Nelson

Ned. E. Nelson
Geologist

EXPLORATION

Subject: DMEA-2291
Re: Exploration Loan
Miller Creek Claims

Mr. C. G. Grimes, Sec'y-Treas.
McLaren Gold Mines Co.
515 Kramer Road
Dayton 9, Ohio

My dear Mr. Grimes:

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

Your application was assigned Docket Number DMEA-2291 and referred to the Rare & Miscellaneous Metals Division.

Kindly refer to DMEA-2291 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E, Adams
Acting Administrative Officer

7862

The McLaren Gold Mines Company

Cooke, Montana

DIAMOND DRILL HOLE LOGS

DRILL HOLE No. 50-3

Feet	Log of hole
0-16	Intercalated shale and limestone-gray and white
16-35	Monzonite porphyry- very light pyritization
35-45	Brecciated intercalated limestone and shale-some epidote
45-47	Limestone
47-48	Shale
48-68	Shale and Limestone- brecciated
68-71	Shale
71-72	Monzonite porphyry
72-74	Shale and Limestone
74-78	Monzonite porphyry
78-111	Monzonite porphyry- some pyrite and epidote
111-139	Shale and Limestone
139-146	Monzonite porphyry-slight pyritization
146-148	Brecciated Monzonite porphyry- light pyritization
148-190	Brecciated Monzonite porphyry-large feldspar crystals

No core or sludge assays because of scant mineral showing

DRILL HOLE No. 50-4

Feet	Log of hole
0-25	White Limestone and shale-some pyrite
25-29	Shale- 100% epidotized
29-30	Calcite
30-60	Limestone- some epidote
60-66	Monzonite porphyry- decomposed
66-67	Limestone
67-76	Shale- some monzonite, may have caved from above
76-80	Limestone
80-100	White Limestone-bleached
100-103	Limestone-epidotized
103-108	Heavy pyrite in silicified limestone
108-115	Heavy pyrite some chalcocite and chalcopyrite
115-117	Silicified limestone-some epidote
117-166	Silicified limestone and shale (quartzite)?
166-169	Black porphyry dike
169-190	Limestone and shale

Does not read like Galena

Core Samples	Au oz./ton	Ag oz./ton	% Cu
101-103	0.12	0.10	0.20
103-105	0.12	0.10	0.20
105-108	0.06	0.34	0.20
108-114	0.14	0.40	0.50
114-116	0.04	0.16	0.10

All other samples of no importance

The McLaren Gold Mines Company

Cooke, Montana

DIAMOND DRILL HOLE LOGS

DRILL HOLE No. 50-5

Feet	Log og Hole
0-60	Monzonite porphyry
60-85	Light gray shale
85-90	Monzonite porphyry
90-145	Monzonite porphyry- some pyrite
145-167	Monzonite porphyry
167-180	Light gray shale
180-182	Shale- heavy epidote and pyrite
182-189	Dark gray shale
189-190	Shale with some epidote

Values negative in all core and sludge samples

DRILL HOLE No.51-3

Feet	Log of Hole
0-14	Detritus
14-35	Decomposed monzonite
35-61	Monzonite-some epidote
61-102	White mottled limestone
102-106	White mottled limestone-considerable epidote
106-110	Epidote
110-111	Epidote and pyrite
111-118	White mottled limestone
118-134	Mottled limestone with epidote
134-160	Highly metamorphosed sedimentary, could be shaley quartzite
160-162	Feldspar porphyry
162-181	Highly metamorphosed sedimentary, could be shaley quartzite
181-188	feldspar porphyry
188-198	Highly metamorphosed sedimentary

Samples	Au oz./ton	Ag oz./ton	% Cu
40-50	0.04	0.56	0.10
106-110	0.04	0.46	0.10
110-110½	0.08	0.60	0.20

The McLaren Gold Mines Company

Cooke, Montana

DIAMOND DRILL HOLE LOGS

DRILL HOLE No. 51-4

Feet	Log og Hole
0-15	Detritus
15-62	Monzonite porphyry, oxidized for first 25 feet
62-65	Shale
65-73	Shale, very silicious
73-91	Shale, dark-some epidote
91-104	Monzonite porphyry-some epidote

Lost hole at 104 feet - no mineralization

DRILL HOLE No. 51-5

Feet	Log of Hole
0-10-12	Detritus
12-74	Monzonite porphyry
74-119	Shale, app. 20% epidote
119-264	Monzonite porphyry
264-267	Shale, app. 20% epidote
267-282	Intercalated limestone and shale, epidote to 80% some pyrite

No values through out hole.

DRILL HOLE No. 51-6

Feet	Log og Hole
0-95	Monzonite porphyry (approaching granofiorite)
95-104	Highly metamorphosed sedimentary, very silicious (Quartzite?)
104-105	Fault gouge ?
105-113	Monzonite porphyry, very fine grained
113-115	Shale
115-124	Highly metamorphosed sedimentary
124-140	Monzonite porphyry, very fine grained
140-270	Monzonite porphyry (approaching granodiortie)

No mineralization through out hole.

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. DMEA-2291

Date received 12-17-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 17 1951

The McLaren Gold Mines Company
515 Kramer Road
Dayton,9,Ohio
Serial #M.S.1892,open pit,Montana

Name and address of applicant

Date December 13,1951

FILL IN THIS BLOCK

Date of application December 13,1951

Estimated cost $29,180.00

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine 4½ miles from Cooke,Park County,Montana,on county road
" " prospect,25 unpatented Q.L.Mining Claims,3 miles from Cooke,on county road

Date of filing MF-100 July 3,1951

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?
*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? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None,but applications for patent would probably result in filing of adverse claims
7. If lessee, attach a copy of the lease and state if it is in good standing.

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

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
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)? Yes & II

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. 25 unpatented Q.L.Mining Claims

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

NOTE.—If both areas are the same, so state. The only obligation to repay the Government from 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. Ore would be concentrated at our mill at Cooke,then cons shipped by truck & rail to smelter at Butte

*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:

(*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.)

(*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? chalcocite,chalcopyrite, copper,silver & gold ores Bornite,

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. 4,800' diamond drilling,2400'July,Aug & Sept/52 & 2400'July,Aug&Sept/53

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

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

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. see attached sheet

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. July,Aug & Sept/52-800' diamond drilling per month,-July,Aug & Sept/53-800'diamond drilling per month

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.

The McLaren Gold Mines Co
(Name of company)

By C. G. Grimell
(Signature of authorized official)

December I3,I95I
(Date)

Secy-Treas.
(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

The McLaren Gold Mines Co
515 Kramer Road
Dayton,9,Ohio

Question 22

Attached - Claim Map,showing surface geology of our Miller Creek claims,in the New World Mining District,Park County,Montana,also geologic sections through Miller Creek area.See also USGS Bulletin #811 by T.S.Lovering covering the New World Mining District and report by Maloit & Jerome,August 1946,submitted with MF 100,July 3,1951.

Report of William H.Hisle,Genl Mgr,MGMCo

As the primary objective in prospecting the Miller Creek Claims is to locate an ore body similar to the MGMCo's ore body on Red Mountain,it is in order to consider some of the characteristics of that ore body.T.S.Lovering classified the pyritic copper-gold ores,of Henderson & Red Mountains,as of contact metamorphic origin, this is not entirely true.While the ore occurs in portions of the Gros Ventre formations that have been highly metamorphosed by the intrusion of monzonite porphyry,at least a portion of the ore was formed by magmatic segregation and replacement and it is felt that this ore body would be more properly classified as of Contact-Metasomatic origin.After some mineralization had taken place in the above stated manner it is quite certain that further enrichment of the ore was accomplished by replacement of portions of the remaining Gros Ventre sedimentaries by high temperature solutions emanating from the monzonite porphyry magma.These high temperature solutions were conducted to their points of deposition along channels formed by dikes and sills of monzonite branching from the main monzonite porphyry body.

Ore of the type in question has benn found on both sides of Henderson Mountain,the Homestake on the east(Goddard of Anaconda estimated that about 300,000 tons of milling copper,silver,gold ore had been developed on this claim) and the Daisy on the West. These ore bodies occured in xenoliths,roof pendants,of the Gros Ventre that remain near the upper portions of the intrusive monzonite.The McLaren ore body appears to occur in the Gros Ventre, where these sedimentaries locally terminate against the intrusive monzonite.This portion of the Gros Ventre is cut by numerous dikes and sills branching from the main monzonite body.Xenoliths of Gros Ventre or the main Gros Ventre formations near the monzonite contact, should prove equally receptive hosts for ore deposition.

It is doubtful that Gros Ventre xenoliths will be found in the area covered by the Miller Creek Claims,a few outcrops of the Gros Ventre are noted to the east of the claims,but these are small and unmineralized.It then remains that our best bet for prospecting will be along the western limits of the monzonite sill,where it is in contact with the Gros Ventre formations.We cannot,at this time, delinate this contact.It is very irregular and in places occurs to the west of the Miller Creek Basin,while in other portions the Gros Ventre extends to the east,well into Miller Creek Basin.DDH's 50-3, 50-4,51-4,& 51-5 all indicate that in the area of these holes,the monzonite sill has started to thin out,or that pessibly smaller sills extend out from the main sill.This general area should be one of the most favorable for prospecting.

One favorable condition that appears to exist in the area, is the apparent wide zone of faulting and shearing. This zone has a strike of N. I5 to 30 degrees W, with the down thrown blocks to the west. Most of the zone is covered with alluvium from five to 40 feet in depth and direct evidence of faulting is meager. However on Crown Butte, just NW of the area in discussion, a N. 20 degree W fault is visible, the verticle movement along this one fault is approximately I80 feet. It is assumed this fault continues south into Miller Creek Basin and that sympathetic fracturing as well as other significant faults parallel it forming a zone that may approach 2000 feet in width. As most of this movement is believed to be pre-mineral, the fracturing should have developed favorable conditions for ore deposition, if ore bearing solutions entered the area.

It also appears that the NW fault zone may be cut by a number of northeasterly faults. If this proves true, the fracturing in the area around the intersections, should provide a multitude of channels for mineralizing solutions.

Having established the existence of a pre-mineral shear zone in the vicinity of the monzonite intrusive, we may next consider the intrusive itself, for it is certainly the source of mineralization in the district (New World). The extent of the monzonite is probably of considerable magnitude, it is known to outcrop south of Soda Butte Creek. As is to be expected, there is considerable variation in the lithologic character of the monzonite. The monzonite is generally porphyritic, however, the size of the phenocrysts show considerable variation. The monzonite cores from DDH 5I-6, indicate the character of the rock in this area to be quite different from the monzonite in the vicinity of the McLaren ore body. The phenocrysts of orthoclose are quite large and enough quartz is present for this rock to be megascopically classed as granodiorite. The monzonite from the drill holes on the west side of the area is much finer grained and similar to the sill-monzonite in the vicinity of the McLaren ore body, how ever, it does not follow that the chemical character of the two magmas were similar. From the drill holes, it is indicated that the degree of metamorphic actions and hydrothermal alteration of the McLaren ore body area has not been approached in this portion of the Miller Creek Area.

Summing up these data, we have established the following:

The same Gros Ventre formations that have been proven favorable host rocks for ore deposition in near-by areas are found in Miller Creek Area.

The monzonite porphyry intrusive that is the source of all known ore in the district, also is in contact with the Gros Ventre formations of the area.

The McLaren Miller Creek Claims cover a good portion of a zone of intersecting faults that could have provided numerous conducting channels for mineralizing solutions.

Note* Our claims in Miller Creek Basin were surveyed, corners marked and relocated in I947. Relocations were covered by the recording of Amended Declaratory Statments.

Question # 23

a	Diamond drilling,4,800 feet,by contract estimated cost $4.50 per foot	$2I,600.00
b	Our Gen'l Mgr who is a mining geologist & mill man on loan from Newmont,20% of his monthly sàlary of $600.00 for the months of July,Aug & Sept,I952 and July,Aug, & Sept,I953	720.00
c		--
d		--
e		--
f		--
g	I5 shifts of 8 hours - I20 hours dozer(TD-I8) work, leveling DD locations,road construction & towing DD truck to locations,in I952 and I20 hours in I953 at $I5.00 per hour,240 hours (dozer owned by applicant)	3,600.00
	I dump truck,owned by applicant,2 hours per day for 90 days,I80 hours at $3.50 per hour in I952 and I80 hours in I953,total hours 360	I,260.00
		--
	Spontaneous polarization survey-time,about 30 days-rental of instruments,interpretation and mapping of results	--
		2,000.00
		29,I80.00

The McLaren Gold Mines Co
5I5 Kramer Road
Dayton,9,Ohio

BALANCE SHEET
THE MCLAREN GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

ASSETS

Current Assets:			
Third National Bank & Trust Company, Dayton, Ohio		40 994 85	
National Park Bank, Livingston, Montana		1 564 27	
Northwestern National Bank of Minneapolis		47 429 22	
Total Cash			89 988 34
Accounts receivable - Anaconda Copper Co.			31 319 88
Inventories - ore in stock pile at mill		11 147 25	
- mill supplies		5 248 71	
- mine supplies		410 00	
- concentrates		11 643 61	
Total Inventories			28 449 57
Total Current Assets			149 757 79
Fixed Assets: Depreciated Value (Schedule 1)			328 672 59
Other Assets:			
Prepaid insurance		1 343 29	
Insurance deposit		250 00	
Total Other Assets			1 593 29
Total Assets			480 023 67

LIABILITIES - CAPITAL ACCOUNTS

Current Liabilities:			
Accounts payable		11 611 73	
Accrued interest		3 270 37	
Accrued taxes		1 067 81	
Total Current Liabilities			15 949 91
Capital Loans			98 111 24
Capital Accounts:			
Capital stock authorized - 350,000 shares			
Capital stock issued - 344,468 shares		472 161 49	
Less deficit:			
Balance December 31, 1950	137 757 63		
Add: Adjusting entries	859 14		
	138 616 77		
Less: Net profit for the period before depletion and Federal Income taxes	32 417 80		
Deficit balance October 31, 1951		106 198 97	
Net Capital Accounts			365 962 52
Total Liabilities and Capital Accounts			480 023 67

SUPPORTING DETAILS
THE MCLAREN GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

Schedule 1 - Fixed Assets	Cost	Reserve for Depreciation	Net Book Value
Assay Office Equipment	1 390 08	1 021 00	369 08
Autos and trucks	16 016 14	13 559 30	2 456 84
Camp and camp equipment	21 455 30	10 353 55	11 101 75
Fire equipment	1 165 71	609 40	556 31
Office furniture and equipment	940 41	268 46	671 95
Laboratory equipment	3 014 78	2 438 36	576 42
Maps and drawings	267 50	264 86	2 64
Library	135 79	134 79	1 00
Mill and mill erection	54 341 37	20 956 75	33 384 62
Mill machinery	149 630 80	87 063 06	62 567 74
Mine machinery	64 230 82	37 139 98	27 090 84
Roads	966 94	438 78	528 16
Soda Butte pipe line	1 117 74	375 67	742 07
Water line - regrind section	538 73	233 44	305 29
Water and water power	409 59	238 14	171 45
Tailing pond	3 612 94	1 430 40	2 182 54
Weighing equipment	275 00	160 41	114 59
Warehouse	884 44	314 42	570 02
Total Buildings, Machinery and Equipment	320 394 08	177 000 77	143 393 31
		Reserve for Depletion	
Property owned	49 633 99		
Claims	73 194 70		
Option on claims	150 00		
Development - other claims and lease expense	43 749 05		
Development expense	114 120 33	95 568 79	
	280 848 07	95 568 79	185 279 28
Total Fixed Assets - Depreciated Value			328 672 59

STATEMENT OF INCOME AND EXPENSE
THE MCLAREN GOLD MINES COMPANY
FOR THE PERIOD ENDED OCTOBER 31, 1951

Income		
Total income from shipments		201 918 55
Less - Smelting charges	7 109 16	
- Freight on Concentrates	8 986 73	16 095 89
		185 822 66
Other income		342 71
Gross Income		186 165 37
Expenses		
Milling and mining labor	52 084 12	
Milling and mining expenses	36 340 21	
Auto and truck repairs and expense	1 910 02	
Insurance	7 253 92	
Interest	4 993 28	
General expense	1 411 29	
Office supplies and expense	1 400 96	
Taxes	8 417 07	
Telephone and telegraph	368 35	
Traveling expense	718 97	
Hauling ore to mill	21 573 55	
Depreciation	16 971 33	
Loss on disposal of capital assets	304 50	
Total Expenses		153 747 57
Net Profit for the Period		32 417 80

MF-590

2780

Contrd

D.M.R.A. 2291

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

3020
Mail

REFERENCE SLIP

DATE 12/26/51

REFERRED TO:

1. Mr. Nelson
2. Room 4216-G.S.A.
3.
4.

FOR:

..... Action	..... Recommendation
..... Approval	..... Record of .....
..... Comment	..... Referring to .....
..... Conference	..... Reply for signature of .....
..... Consideration	..... Rewriting
..... Filing	..... Signature
..... Instructions	..... Suggestions
..... Investigation	✓ Your information
..... Initials	
..... Mailing	
..... Previous correspondence	

REMARKS: According to our records, the reports you are looking for will be in the Speaker's Office, attached to the copies of MF-100.

Check (X) before the items needing attention.

Mr. Speaker
Rm. 2465

R. E. ADAMS

DN
Initials of sender.

GPO 16—63815-1

Tel. 3038 or 3764

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 12-18-51

REFERRED TO:

1. MR. NED E. NELSON RM. 4216 G. S. A. Building
2.
3.
4.

FOR:

..... Action	..... Recommendation
..... Approval	..... Record
..... Comment	of .....
..... Conference	..... Referring
..... Consideration	to.....
..... Filing	..... Reply for signa-
..... Instructions	ture of .....
..... Investigation	..... Rewriting
..... Initials	..... Signature
..... Mailing	..... Suggestions
..... Previous correspondence	..... Your information

REMARKS: .....

Check (X) before the items needing attention.

ROBERT E. ADAMS

Initials of sender.

GPO 16—63815-1

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. DMEA-2291

Date received 12-17-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 17 1951

The McLaren Gold Mines Company
515 Kramer Road
Dayton,9,Ohio
Serial #M.S.1892,open pit Montana

Name and address of applicant

Date December 13,1951

FILL IN THIS BLOCK

Date of application December 13,1951

Estimated cost $29,180.00

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine 4½ miles from Cooke,Park County,Montana,on county road " " prospect,25 unpatented Q.L.Mining Claims,3 miles from Cooke,on County road.

Date of filing MF-100 July 3,1951

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?
*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? Owner
6. If owner, state what claims, liens, or encumbrances, if any, are against the property. None, but applications for patent would probably result in the filing of adverse claims.
7. If lessee, attach a copy of the lease and state if it is in good standing.
NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.
8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
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)? Yes & II

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

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property. 25 unpatented Q.L.mining claims

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

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. Ore would be concentrated at our mill at Cooke, then shipped by truck & rail to smelter atButte

*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:

(*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.)

(*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? chalcocite,chalcopyrite, copper,silver & gold ores Bornite,

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it. 4,800 ft diamond drilling,2400' July,Aug & Sept/52 & 2400' July,Aug & Sept/53

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

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

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. see attached sheet

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. July,Aug & Sept/52-800' diamond drilling per month,July,Aug & Sept/53-800' diamond drilling per month

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.

The McLaren Gold Mines Co
(Name of company)

By C. G. Grindt
(Signature of authorized official)

December 13,1951
(Date)

Secy-Treas
(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

The McLaren Gold Mines Co
515 Kramer Road
Dayton,9,Ohio

Question 22

Attached - Claim Map,showing surface geology of our Miller Creek claims,in the New World Mining District,Park County,Montana,also geologic sections through Miller Creek area.See also USGS Bulletin #8II by T.S.Lovering covering the New World Mining District and report by Maloit & Jerome,August 1946,submitted with MF 100,July 3,1951.

Report of William H.Hisle,Genl Mgr,MGMCo

As the primary objective in prospecting the Miller Creek Claims is to locate an ore body similar to the MGMCo's ore body on Red Mountain,it is in order to consider some of the characteristics of that ore body.T.S.Lovering classified the pyritic copper-gold ores,of Henderson & Red Mountains,as of contact metamorphic origin, this is not entirely true.While the ore occurs in portions of the Gros Ventre formations that have been highly metamorphosed by the intrusion of monzonite porphyry,at least a portion of the ore was formed by magmatic segregation and replacement and it is felt that this ore body would be more properly classified as of Contact-Metasomatic origin.After some mineralization had taken place in the above stated manner it is quite certain that further enrichment of the ore was accomplished by replacement of portions of the remaining Gros Ventre sedimentaries by high temperature solutions emanating from the monzonite porphyry magma.These high temperature solutions were conducted to their points of deposition along channels formed by dikes and sills of monzonite branching from the main monzonite porphyry body.

Ore of the type in question has benn found on both sides of Henderson Mountain,the Homestake on the east(Goddard of Anaconda estimated that about 300,000 tons of milling copper,silver,gold ore had been developed on this claim) and the Daisy on the West. These ore bodies occured in xenoliths,roof pendants,of the Gros Ventre that remain near the upper portions of the intrusive monzonite.The McLaren ore body appears to occur in the Gros Ventre, where these sedimentaries locally terminate against the intrusive monzonite.This portion of the Gros Ventre is cut by numerous dikes and sills branching from the main monzonite body.Xenoliths of Gros Ventre or the main Gros Ventre formations near the monzonite contact, should prove equally receptive hosts for ore deposition.

It is doubtful that Gros Ventre xenoliths will be found in the area covered by the Miller Creek Claims,a few outcrops of the Gros Ventre are noted to the east of the claims,but these are small and unmineralized.It then remains that our best bet for prospecting will be along the western limits of the monzonite sill,where it is in contact with the Gros Ventre formations.We cannot,at this time, delinate this contact.It is very irregular and in places occurs to the west of the Miller Creek Basin,while in other portions the Gros Ventre extends to the east,well into Miller Creek Basin.DDH's 50-3, 50-4,5I-4,& 5I-5 all indicate that in the area of these holes,the monzonite sill has started to thin out,or that possibly smaller sills extend out from the main sill.This general area should be one of the most favorable for prospecting.

One favorable condition that appears to exist in the area,is the apparent wide zone of faulting and shearing.This zone has a strike of N.15 to 30 degrees W,with the down thrown blocks to the west. Most of the zone is covered with alluvium from five to 40 feet in depth and direct evidence of faulting is meager.However on Crown Butte,just NW of the area in discussion,a N.20 degree W fault is visible,the verticle movement along this one fault is approximately 180 feet.It is assumed this fault continues south into Miller Creek Basin and that sympathetic fracturing as well as other significant faults parallel it forming a zone that may approach 2000 feet in width. As most of this movement is believed to be pre-mineral,the fracturing should have developed favorable conditions for ore deposition,if ore bearing solutions entered the area.

It also appears that the NW fault zone may be cut by a number of northeasterly faults.If this proves true,the fracturing in the area around the intersections,should provide a multitude of channels for mineralizing solutions.

Having established the existence of a pre-mineral shear zone in the vicinity of the monzonite intrusive,we may next consider the intrusive itself,for it is certainly the source of mineralization in the district(New World).The extent of the monzonite is probably of considerable magnitude,it is known to outcrop south of Soda Butte Creek.As is to be expected,there is considerable variation in the lithologic character of the monzonite.The monzonite is generally porphyritic,however,the size of the phenocrysts show considerable variation.The monzonite cores from DDH 51-6,indicate the character of the rock in this area to be quite different from the monzonite in the vicinity of the McLaren ore body.The phenocrysts of orthoclase are quite large and enough quartz is present for this rock to be megascopically classed as granodiorite.The monzonite from the drill holes on the west side of the area is much finer grained and similar to the sill-monzonite in the vicinity of the McLaren ore body,how ever,it does not follow that the chemical character of the two magmas were similar.From the drill holes,it is indicated that the degree of metamorphic actions and hydrothermal alteration of the McLaren ore body area has not been approached in this portion of the Miller Creek Area.

Summing up these data,we have established the following:

The same Gros Ventre formations that have been proven favorable host rocks for ore deposition in near-by areas are found in Miller Creek Area.

The monzonite porphyry intrusive that is the source of all known ore in the district,also is in contact with the Gros Ventre formations of the area.

The McLaren Miller Creek Claims cover a good portion of a zone of intersecting faults that could have provided numerous conducting channels for mineralizing solutions.

Note* Our claims in Miller Creek Basin were surveyed,corners marked and relocated in 1947.Relocations were covered by the recording of Amended Declaratory Statments.

Question # 23

a	Diamond drilling,4,800 feet,by contract estimated cost $4.50 per foot	$21,600.00
b	Our Gen'l Mgr who is a mining geologist & mill man on loan from Newmont,20% of his monthly sallary of $600.00 for the months of July,Aug & Sept,1952 and July,Aug, & Sept,1953	720.00
c		--
d		--
e		--
f		--
g	15 shifts of 8 hours - 120 hours dozer(TD-18) work, leveling DD locations,road construction & towing DD truck to locations,in 1952 and 120 hours in 1953 at $15.00 per hour,240 hours (dozer owned by applicant)	3,600.00
	1 dump truck,owned by applicant,2 hours per day for 90 days,180 hours at $3.50 per hour in 1952 and 180 hours in 1953,total hours 360	1,260.00
	Spontaneous polarization survey-time,about 30 days-rental of instruments,interpretation and mapping of results	2,000.00
		29,180.00

The McLaren Gold Mines Co
515 Kramer Road
Dayton,9,Ohio

BALANCE SHEET
THE MCLAREN GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

ASSETS

Current Assets:			
Third National Bank & Trust Company, Dayton, Ohio		40 994 85	
National Park Bank, Livingston, Montana		1 564 27	
Northwestern National Bank of Minneapolis		47 429 22	
Total Cash			89 988 34
Accounts receivable - Anaconda Copper Co.			31 319 88
Inventories - ore in stock pile at mill		11 147 25	
- mill supplies		5 248 71	
- mine supplies		410 00	
- concentrates		11 643 61	
Total Inventories			28 449 57
Total Current Assets			149 757 79
Fixed Assets: Depreciated Value (Schedule 1)			328 672 59
Other Assets:			
Prepaid insurance		1 343 29	
Insurance deposit		250 00	
Total Other Assets			1 593 29
Total Assets			480 023 67

LIABILITIES - CAPITAL ACCOUNTS

Current Liabilities:			
Accounts payable		11 611 73	
Accrued interest		3 270 37	
Accrued taxes		1 067 81	
Total Current Liabilities			15 949 91
Capital Loans			98 111 24
Capital Accounts:			
Capital stock authorized - 350,000 shares			
Capital stock issued - 344,468 shares		472 161 49	
Less deficit:			
Balance December 31, 1950	137 757 63		
Add: Adjusting entries	859 14		
	138 616 77		
Less: Net profit for the period before depletion and Federal Income taxes	32 417 80		
Deficit balance October 31, 1951		106 198 97	
Net Capital Accounts			365 962 52
Total Liabilities and Capital Accounts			480 023 67

SUPPORTING DETAILS
THE ECLAIRE GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

Schedule 1 - Fixed Assets	Cost	Reserve for Depreciation	Net Book Value
Assay Office Equipment	1 390 08	1 021 00	369 08
Autos and trucks	16 016 14	13 559 30	2 456 84
Camp and camp equipment	21 455 30	10 353 55	11 101 75
Fire equipment	1 165 71	609 40	556 31
Office furniture and equipment	940 41	268 46	671 95
Laboratory equipment	3 014 78	2 438 36	576 42
Maps and drawings	267 50	264 86	2 64
Library	135 79	134 79	1 00
Mill and mill erection	54 341 37	20 956 75	33 384 62
Mill machinery	149 630 80	87 063 06	62 567 74
Mine machinery	64 230 82	37 139 98	27 090 84
Roads	966 94	438 78	528 16
Soda Butte pipe line	1 117 74	375 67	742 07
Water line - regrind section	538 73	233 44	305 29
Water and water power	409 59	238 14	171 45
Tailing pond	3 612 94	1 430 40	2 182 54
Weighing equipment	275 00	160 41	114 59
Warehouse	884 44	314 42	570 02
Total Buildings, Machinery and Equipment	320 394 08	177 000 77	143 393 31
		Reserve for Depletion	
Property owned	49 633 99		
Claims	73 194 70		
Option on claims	150 00		
Development - other claims and lease expense	43 749 05		
Development expense	114 120 33	95 568 79	
	280 848 07	95 568 79	185 279 28
Total Fixed Assets - Depreciated Value			328 672 59

STATEMENT OF INCOME AND EXPENSES
THE MCLAREN GOLD MINES COMPANY
FOR THE PERIOD ENDED OCTOBER 31, 1951

Income		
Total income from shipments		201 918 55
Less - Smelting charges	7 109 16	
- Freight on concentrates Rg: Smelting?	8 986 73	16 095 89
		185 822 66
Other income		342 71
Gross Income		186 165 37
Expenses		
Milling and mining labor	52 084 12	
Milling and mining expenses	36 340 21	
Auto and truck repairs and expense	1 910 02	
Insurance	7 253 92	
Interest	4 993 28	
General expense	1 411 29	
Office supplies and expense	1 400 96	
Taxes	8 417 07	
Telephone and telegraph	368 35	
Traveling expense	718 97	
Hauling ore to mill	21 573 55	
Depreciation	16 971 33	
Loss on disposal of capital assets	304 50	
Total Expenses		153 747 57
Net Profit for the Period		32 417 80

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. DMEA-2291

Date received 12-17-51

Participation

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 17 1951

The McLaren Gold Mines Company
515 Kramer Road
Dayton,9,Ohio
Serial #M.S.1892,open pit,Montana

Name and address of applicant

Date December 13,1951

FILL IN THIS BLOCK

Date of application December 13,1951

Estimated cost $29,180.00

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine 4½ miles from Cooke,Park County,Montana,on county road
" " prospect,25 unpatented Q.L.Mining Claims,3 miles from Cooke,on county road

Date of filing MF-100 July 3,1951

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?
*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.
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16—64067-1

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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. 25 unpatented C.L.Mining Claims
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted. see attached map

    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.

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State amount of power to be used, rate per hour or other cost, and source.

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

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The McLaren Gold Mines Co
(Name of company)

By C. G. Grundt
(Signature of authorized official)

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(Date)

Secy-Treas.
(Title)

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The monzonite porphyry intrusive that is the source of all known ore in the district, also is in contact with the Gros Ventre formations of the area.

The McLaren Miller Creek Claims cover a good portion of a zone of intersecting faults that could have provided numerous conducting channels for mineralizing solutions.

Note* Our claims in Miller Creek Basin were surveyed, corners marked and relocated in I947. Relocations were covered by the recording of Amended Declaratory Statments.

Question # 23

a	Diamond drilling,4,800 feet,by contract estimated cost $4.50 per foot	$2I,600.00
b	Our Gen'l Mgr who is a mining geologist & mill man on loan from Newmont,20% of his monthly salary of $600.00 for the months of July,Aug & Sept,I952 and July,Aug, & Sept,I953	720.00
c		—
d		—
e		—
f		—
g	I5 shifts of 8 hours - I20 hours dozer(TD-I8) work, leveling DD locations,road construction & towing DD truck to locations,in I952 and I20 hours in I953 at $I5.00 per hour,240 hours (dozer owned by applicant)	3,600.00
	I dump truck,owned by applicant,2 hours per day for 90 days,I80 hours at $3.50 per hour in I952 and I80 hours in I953,total hours 360	I,260.00
	Spontaneous polarization survey-time,about 30 days-rental of instruments,interpretation and mapping of results	2,000.00
		29,I80.00

The McLaren Gold Mines Co
5I5 Kramer Road
Dayton,9,Ohio

BALANCE SHEET
THE MCLAREN GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

ASSETS

Current Assets:			
Third National Bank & Trust Company, Dayton, Ohio		40 994 85	
National Park Bank, Livingston, Montana		1 564 27	
Northwestern National Bank of Minneapolis		47 429 22	
Total Cash			89 988 34
Accounts receivable - Anaconda Copper Co.			31 319 88
Inventories - ore in stock pile at mill		11 147 25	
- mill supplies		5 248 71	
- mine supplies		410 00	
- concentrates		11 643 61	
Total Inventories			28 449 57
Total Current Assets			149 757 79
Fixed Assets: Depreciated Value (Schedule 1)			328 672 59
Other Assets:			
Prepaid insurance		1 343 29	
Insurance deposit		250 00	
Total Other Assets			1 593 29
Total Assets			480 023 67

LIABILITIES - CAPITAL ACCOUNTS

Current Liabilities:			
Accounts payable		11 611 73	
Accrued interest		3 270 37	
Accrued taxes		1 067 81	
Total Current Liabilities			15 949 91
Capital Loans			98 111 24
Capital Accounts:			
Capital stock authorized - 350,000 shares			
Capital stock issued - 344,468 shares		472 161 49	
Less deficit:			
Balance December 31, 1950	137 757 63		
Add: Adjusting entries	859 14		
	138 616 77		
Less: Net profit for the period before depletion and Federal Income taxes	32 417 80		
Deficit balance October 31, 1951		106 198 97	
Net Capital Accounts			365 962 52
Total Liabilities and Capital Accounts			480 023 67

SUPPORTING DETAILS
THE MCLAREN GOLD MINES COMPANY
AS OF OCTOBER 31, 1951

Schedule 1 - Fixed Assets	Cost	Reserve for Depreciation	Net Book Value
Assay Office Equipment	1 390 08	1 021 00	369 08
Autos and trucks	16 016 14	13 559 30	2 456 84
Camp and camp equipment	21 455 30	10 353 55	11 101 75
Fire equipment	1 165 71	609 40	556 31
Office furniture and equipment	940 41	268 46	671 95
Laboratory equipment	3 014 78	2 438 36	576 42
Maps and drawings	267 50	264 86	2 64
Library	135 79	134 79	1 00
Mill and mill erection	54 341 37	20 956 75	33 384 62
Mill machinery	149 630 80	87 063 06	62 567 74
Mine machinery	64 230 82	37 139 98	27 090 84
Roads	966 94	438 78	528 16
Soda Butte pipe line	1 117 74	375 67	742 07
Water line - regrind section	538 73	233 44	305 29
Water and water power	409 59	238 14	171 45
Tailing pond	3 612 94	1 430 40	2 182 54
Weighing equipment	275 00	160 41	114 59
Warehouse	884 44	314 42	570 02
Total Buildings, Machinery and Equipment	320 394 08	177 000 77	143 393 31
		Reserve for Depletion	
Property owned	49 633 99		
Claims	73 194 70		
Option on claims	150 00		
Development - other claims and lease expense	43 749 05		
Development expense	114 120 33	95 568 79	
	280 848 07	95 568 79	185 279 28
Total Fixed Assets - Depreciated Value			328 672 59

STATEMENT OF INCOME AND EXPENSE
THE MCLAREN GOLD MINES COMPANY
FOR THE PERIOD ENDED OCTOBER 31, 1951

Income		
Total income from shipments		201 918 55
Less - Smelting charges	7 109 16	
- Freight on concentrates	8 986 73	16 095 89
		185 822 66
Other income		342 71
Gross Income		186 165 37
Expenses		
Milling and mining labor	52 084 12	
Milling and mining expenses	36 340 21	
Auto and truck repairs and expense	1 910 02	
Insurance	7 253 92	
Interest	4 993 28	
General expense	1 411 29	
Office supplies and expense	1 400 96	
Taxes	8 417 07	
Telephone and telegraph	368 35	
Traveling expense	718 97	
Hauling ore to mill	21 573 55	
Depreciation	16 971 33	
Loss on disposal of capital assets	304 50	
Total Expenses		153 747 57
Net Profit for the Period		32 417 80

Form MF-100
(May 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Form approved.
Budget Bureau No. 42-R1026.

GENERAL TECHNICAL DATA
FOR USE UNDER THE
DEFENSE PRODUCTION ACT OF 1950

NOT TO BE FILLED IN BY APPLICANT

Docket No. _____

Date received MS 1892

The McLaren Gold Mines Co
515 Kramer Road
Dayton, 9, Ohio

RECEIVED
JAN 3 1952

Name and address of applicant

Date July 3, 1951

INSTRUCTIONS

This form is to be filed with Defense Minerals Administration, Department of the Interior, Washington 25, D. C. It should be accompanied by appropriate application form when a specific type of Government assistance is requested, in the form of (1) loan, (2) purchase contract, (3) Government guarantee of a private loan, (4) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (5) other forms of Government assistance that might arise under the Act. Submit four (4) signed copies of the form and accompanying papers. Name and address should be stamped or typed on each sheet of this form and all accompanying papers. *When a question is inapplicable it should be so stated on the form.* Additional sheets may be attached in answering any questions or in supplying additional information. (IF YOU CANNOT ANSWER A QUESTION, SO STATE.) If a question is answered elsewhere indicate where answered. It is not necessary to answer it again.

GENERAL TECHNICAL DATA

Supply the following information on separate sheets, arranged, numbered, and lettered as indicated:

1. Materials produced:
   (a) What are the chief mine, mill, or smelter products? Copper, silver, gold & iron
   (b) What are the byproducts, if any?
2. Name(s) and type(s) of mine(s), mill(s), smelter(s), refinery(ies), pit(s), quarry (ies), drilling operation(s). Include old names of property, if any. Show extent of workings, including the following: Open pit, 2 patented & 1 unpatented claim, & 6 undeveloped adjoining pat'd claims
   (a) Linear feet of shafts.
   (b) Linear feet of drifts and crosscuts.
   (c) Linear feet of tunnels or adits.
   (d) Linear feet of other mine openings (explain briefly).

   Indicate whether mine is flooded or not. Describe any pumping problems. Give size or productive capacity.
3. For each operation listed above supply the following:
   (a) Distance and direction from nearest town and shipping point. 50 miles-Gardiner, Montana
   (b) Mining district. New World (Unorganized)
   (c) Township, Section, Range. Town 9, parts sections 10, 11 & 14, Range 14
   (d) County, State. Park County, Montana
4. (a) State whether or not property is now in operation, and if in operation, by whom operated. In operation by owner, The McLaren Gold Mines Co
   (b) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production approx 15

   If not in production or operation, estimated date when production will begin _____
6. Experience of operators:

   Describe the mining and general business experience of (a) the applicant, and (b) the person or persons who manage the project. O.B. Jones, Prest, also director NJ Zinc Co, C.G. Grimes, Secy-Treas W.H. Hisle on loan from Newmont Mining Corp, Genl Mgr
7. History:
   (a) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for suspension of operation. See attached reports, Beeson & Maloit
   (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.

8. Names and addresses of Officers, Directors, or Partners, and in addition thereto, the five largest stockholders if applicant is a corporation.

Name and Address (a)	Official Title (If officer is also director indicate by "D") (b)	Total of Annual Salary, Commissions, Bonuses, Etc., Received From Applicant and Affiliates During Last Fiscal Year (c)	Estimated Net Worth Outside of Interest in Applicant (d)	Number of Shares Held in Applicant Corporation: Common (e)	Number of Shares Held in Applicant Corporation: Preferred (f)	Life Insurance Carried for Benefit of Applicant: Amount (g)	Life Insurance Carried for Benefit of Applicant: Net Cash Surrender Value After Loans (h)
	Total		x x x x x			x x x x x	x x x x x

If more lines are needed continue on separate sheet.

9. Capital Stock Issues:

For Corporate Applicants

Item	Authorized (a)	Outstanding (b)	Par Value (c)	Number of Shares Outstanding (d)	Dividend Rate Last Paid* (e)
Common stock	$	$	$		
Preferred stock	$	$	$		

*Indicate period covered.

10. Production:

Item	Kind of Product (a)	1948 Total (b)	1949 Total (c)	1950 Total (d)	Present Average Monthly (e)
1. Quantity of product mined or quarried (Short, ~~long~~, ~~metric~~ tons; ~~barrels, pounds, etc.~~)	Cu,Ag & Au ore	38,179	39,139	28,027	3,500
2. Quantity of product processed (specify unit of measure and type of process)	Cu lbs	379,000	396,000	520,000	
3. Quantity and grade of product sold or shipped (specify units of measure)	Ag ozs	7,700	6,300	8,600	= [illegible]
	Au ozs	5,100	5,600	5,700	= 200,000

11. Do you contemplate a change in the present average monthly rate of production? If so, state estimated maximum monthly production and basis of change. No

12. Ore or Mineral Reserves:

(a) Describe the ore or mineral deposit briefly. Accompany the application by any available report on the geology and ore reserves. See attached reports-J.J.Beeson,Dec.26/38 & F.J.Maloit

Aug/46

16—63792-1

(*b*) If deposit is other than placer:

(1) Submit assay plans and/or sections showing location and size of proved (measured) and probable (indicated) ore or mineral reserve.

(2) State the tonnage (indicate type of ton) and grade of each class of ore reserve, as above, and show how computed. Tabulated total ore reserve as follows:

TOTAL ORE OR MINERAL RESERVES

Ore or Mineral Reserve	Estimated Tons (a)	Metal or Mineral Content Per Ton (Grade) (b)	Gross Value Per Ton (c)	Recoverable Unit Value Per Ton (d)	Estimated Cost of Production Per Ton (e)
Measured (proved)					
Indicated (probable)					

(*c*) If placer:

(1) Give estimated total yardage and average marketable mineral content of each deposit.

(2) Submit map showing location of placer deposit and surrounding area, with all test holes or pits. Submit logs of each hole and test pit with depth and average value of each.

(3) Describe gravel, stating whether fine, medium or coarse; loose, tight, cemented, or frozen, and whether it contains stumps or boulders more than 1 foot in diameter; if so, how large, and in what proportion.

(4) Describe bedrock, giving type (granite, sandstone, shale, etc.) and state whether it is hard or soft, smooth, uneven or rough.

(5) Describe overburden, stating whether loose, tight, or cemented; fine or coarse textured; furnish estimate of average thickness and total amount.

(6) Tabulate the reserves using the form outlined above for ore or mineral reserves.

13. Access Roads:

Give road distances to shipping, supply and residence points, stating kind and condition of roads. Surfaced road to Gardiner,Mont,mill & camp located at Cooke,Mont,city limits

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year. Soda Butte creek usually supplies water/for our I50 ton per day flotation mill ALL YEAR

15. Power:

State amount of power used, rate per hour, and source thereof. Ingersoll-Rand diesel elect gen. set new I946-47

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period. June/5I,20 men,about 5 at mine,bal at mill & misc jobs

17. Equipment and Facilities: I50 ton per day flotation mill built I945-I946-47,office & lab built in middle I930s,3 tractors,2 shovels,3 compressors,wagon drill etc

Describe present equipment on the property, including buildings. (State condition.) List major pieces of equipment now owned or controlled and in serviceable condition available for this operation.

18. Are there any particular conditions or circumstances affecting your operations that are not described above? If so, explain.

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.

THE McLAREN GOLD MINES CO.
(Name of company)

By C. G. Grimes
(Signature of authorized official)

July 3, 1951
(Date)

Secy-Treas
(Title)

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

U. S. GOVERNMENT PRINTING OFFICE 16—63792-1

CHARLES E. HUBBARD & COMPANY
Certified Public Accountants
Harries Building
Dayton 2, Ohio.

C.E. Hubbard, C.P.A.
O.N. Folker, C.P.A.

January 23, 1951

The McLaren Gold Mines Company
Dayton, Ohio.

We have examined the balance sheet of The McLaren Gold Mines Company at December 31, 1950, and the related statements of income and earned surplus (deficit) for the year then ended. The books of account and record were kept by us, and the system of internal control and the accounting procedures of the Company appeared to be adequate and proper. During the year we examined or tested accounting records and other supporting evidence, by methods and to the extent we deemed necessary. Our examination was made in accordance with generally accepted auditing standards applicable in the circumstances, and included all procedures which we considered necessary, with the exception of the verification of quantities represented in inventory, which was accepted as furnished by the mine superintendent. The officers and directors of the Company served without compensation during the year 1950.

In our opinion, the accompanying balance sheet and related analysis of earned surplus (deficit) and statement of income, present fairly the financial condition of The McLaren Gold Mines Company at December 31, 1950, and the results from its operations for the year then ended, subject to the above mentioned qualification relative to inventory, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding years.

CHARLES E. HUBBARD & COMPANY

Balance Sheet
The McLaren Gold Mines Company
As of December 31, 1950

Assets		
Current Assets:		
Cash in Banks		92 781 86
Inventories - ore at mill	1 288 00	
- Supplies	10 601 50	
Total Inventories		11 889 50
Total Current Assets		104 671 36
Fixed Assets:		
Buildings, machinery and equipment at cost less depreciation	160 103 01	
Property owned, claims and Development expense - Net	180 429 28	
Total Fixed Assets - Net		340 532 29
Other Assets:		
Prepaid insurance	3 282 20	
Insurance deposit	250 00	
Total Other Assets		3 532 20
Total Assets		448 735 85
Liabilities - Capital Accounts		
Current Liabilities:		
Accounts Payable	334 67	
Due on Chattel Mortgages	10 722 32	
Total Current Liabilities		11 056 99
Capital Loans		103 275 00
Capital Accounts:		
Capital stock authorized - 350,000 shares		
Capital stock issued - 344,468 shares	472 161 49	
Less: deficit balance December 31, 1950	137 757 63	
Net Capital Accounts		334 403 86
Total Liabilities and Capital Accounts		448 735 85

304,405.07
207,750.00
96,655.07

Statement of Income and Expenses
The McLaren Gold Mines Company
For the year ended December 31, 1950

Total Income from shipments		304 405 07
Less Smelting Charges	11 034 37	
Freight on Concentrates	14 566 45	25 600 82
Income from shipments - Net		278 804 25
Other income		411 70
Sale of Capital Assets - Euclid Trucks		5 333 48
Gross Income		284 549 43
Expenses:		
Milling Labor	61 856 98	
Milling supplies, repairs and maintenance	64 132 52	
Mining Labor	13 739 08	
Mining Supplies, repairs and maintenance	11 283 87	
Cost of hauling ore milled (Note 1)	26 665 66	
Autos and trucks repairs and expense	2 367 93	
Freight and Express	1 070 24	
Insurance - Industrial and Other	8 621 34	
Interest	5 644 97	
Office supplies and expense	1 801 42	
Taxes	5 499 80	
Telephone and telegraph	478 28	
Traveling expense	1 231 34	
General expenses	410 97	
Legal expense	1 778 22	
Depreciation	20 633 30	
Loss on Camp	423 85	
Total Expenses		227 639 77
Net Profit before Depletion and Federal Taxes on Income		56 909 66
Less: Depletion		28 454 83
Net Profit before Federal Taxes on Income		28 454 83

Note 1 - Cost of hauling ore milled includes ten months depreciation on Euclid Trucks amounting to 5,256.34

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SUMMARY OF REPORTS

on the operations of

THE Mc LAREN GOLD MINES COMPANY

near

Cooke, Park County,

Montana

for

1937 and 1938

by

J. J. Beeson

-o-

Dated

December 26, 1938

Salt Lake City, Utah

SUMMARY AND RECOMMENDATIONS

From the Report

of

J. J. Beeson

Dated

October 25, 1937

The ore deposit of The McLaren Gold Mines Company is formed in shales close to the contact of the Red Mouhtain monzonite (or rhyolite.) These shales have been proven to carry ore for a thickness of 30 feet, with the probability that further development work will increase this thickness. Between the ore-bearing shales and the underlying monzonite (sill) the shales are partially replaced by epidote, magnetite and garnet, suggesting that the deposit may be a contact or high temperature type. In the ore, however, magnetite is present in small quantities and epidote and garnet are almost absent, suggesting lower temperatures. The shales are usually heavily impregnated with pyrite, in grains disseminated through the mass and in some cases replacing it in bands and small veinlets. Chaleopyrite and secondary copper minerals are present, though in smaller quantities than pyrite. Gold is very uniformly distributed for this type of a deposit, and the amount is exceptionally high, as indicated in the assays accompanying this report.

The mineralized area exposed by the open cut is 800 feet in length, with 10 to 30-foot beds of ore exposed in the southern end and an undetermined thickness in the northern end. I am convinced that this deposit has a reasonable possibility of extending hundreds of feet beyond the open cut, particularly in a northweste ly and southeasterly direction. If secondary enrichment of the gold and copper values continue, or if the gold content of the primary ore does not go below 0.20 oz. gold per ton, this deposit may develop into a very large one. In this case it will mean a large and profitable operation.

The mineralized area and extent of the ore, beyond the limits of the open pit, can be determined quickly and at a low cost by diamond drilling and a limited amount of underground work, as discussed in this report. This should be done as rapidly as possible.

Other similar ore deposits may be found in the same geological horizon in the vicinity of the present working or at considerable distance. In view of this, if the results of diamond drilling are highly favorable, a geologic study should be made with the view of securing all the promising ground that can be tied up at a reasonable cost.

During the winter metallurgical experiments should be carried on to improve milling operations.

The more important claims should be re-surveyed in the spring. I could not get some of the claim corner

positions to check with my survey, thus I left claim lines off of Map No. 2.

The present showing of ore justifies a moderate expenditure for property or small interests in the claims in the immediate vicinity of the mine, which are not owned by the company at present. This should be done this winter, or before work is resumed in the spring.

* The development at the mine is of such importance, even at present, that information regarding the same should be retained as confidential by the Company until the extent of the deposit is determined and all the property necessary or desirable is purchased or tied up.

Respectfully submitted,

J. J. Beeson, Mining Geologist.

*The property situation and developments generally have been of such a nature that this need not apply at present (December 1938)

J. J. B.

SUMMARY OF EXPLORATION WORK

of

THE McLAREN GOLD MINES COMPANY

1938

Early in June an intensive exploration campaign was started on the property under the direction and management of the Newmont Mining Corporation. At the same time, J. A. Titcomb was appointed as general manager. On his staff were M. S. Kemmerer, geologist; Geo. O. Scarfe, Jr., engineer; and P. M. Mosier, mine superintendent. Later in the year, P. C. Benedict, geologist, was added to the organization. Due to the organizing capacity of Mr. Titcomb and his ability to secure cooperation from the excellent men under him, the work was carried on with the utmost efficiency throughout the summer. It was due to this condition that the maximum amount of reliable information has been secured and carefully recorded. I was employed by the company as an independent consulting geologist to advise and assist with the work. Alexander McLaren was assigned to the work of securing additional property and perfecting title to the ground already owned or controlled by the Company. The diamond drilling was done under contract by The Longtin Diamond Drilling Company of San Francisco. Many helpful suggestions were given by Walter McLaren.

During the early part of the summer diamond drilling alone was carried on, later, tunnels, raises, sur-

face pits, and bulldozer trenches supplemented this work. A total of 46 holes or 5017½ feet of drilling was completed. Six holes were drilled on the Glengarry property, now undercoption to the McLaren Company. With the exception of one hole, the locations of all the remaining holes are shown on the accompanying maps.

The Contract Tunnel, shown on the map just south of Diamond Drill Hole No. 44, was driven 291 feet. Raises 35 and 45 feet respectively were put up in the North and South Tunnels and the Iron Tunnel--near Drill Hole No. 34--was extended from 36 to 75 feet.

Numerous shallow pits and shafts were sunk on the McLaren and Glengarry properties. Some were to determine the values in the capping previously stripped from the ore body, others were to test the value of ore near the surface, and still others were sunk along diamond drill holes to test the results secured from drilling.

Three bulldozer cuts were made across the area just north of the north end of the Open Cut and one across the present portal of the Winter Tunnel. Several trenches were also made east of the Bull of the Woods Pass and on the Glengarry property. These trenches were made to prospect mineralized areas and to disclose geology.

As a result of the work as above outlined the following information has been secured:

1. The general geology as summarized in my report of 1937 remains the same except that several sills have been shown in the diamond drill holes and one, about 15

feet in thickness is of particular significance as it forms the bottom of the main ore body over a large area; also it separates the main ore body from the sub-sill ore. The maximum thickness of the main ore body, above the sill is 53 feet, but the average is about 20 feet where not eroded or effected by other causes which decrease the thickness. The sub-sill ore usually varies between 5 and 10 feet in thickness and averages about 7 feet.

2. The mineralized area as shown on the attached map has been proven from Diamond Drill Hole No. 45 to the south end of the bulldozen trenches east of the Bull of the Woods Pass, a distance of 2000 feet. Though not all this length has been proven to be ore bearing, a part of it has, and the remainder will undoubtably show considerable ore when further prospected. South of the limits of the map the formation contains only small areas of sedimentary, possibly ore bearing formation within the company's claims. To the north of the Open Cut a rather large area of favorable formation remains to be prospected. The larger part of this area will be prospected by the Winter Tunnel--as shown on the map--and by raises from this tunnel. The Winter Tunnel is now being driven and will probably be continued well on into next summer.

WHY A TUNNEL WHEN MIN. ORE BODY ONLY 20 FT THICK

To the north of the map the geological studies of Mr. Benedict indicate the possibility that the Boarding House Dike and the Tertiary Intrusive Breccia will intersect roughly like the roof of a house, suggesting the possibility that the sedimentary formation will continue

several hundred feet northerly, beyond the map, to the Glengarry ore deposit. At present this is not proven. However, if the area from the North end of the Open Cut to the north end of the map is found to be ore bearing the present developed tonnage may be doubled and if ore continues on to the Glengarry mine, under Red Mountain, the tonnage may be trebbled.

3. Comments on the Ore Reserves: The ore reserves have been listed in detail on the accompanying sheet and map. The tonnage indicated as Reasonably Assured has been determined not only by the diamond drill holes, but also by numerous samples along a 400 foot bank 15 to 30 feet high and in limited amount of underground tunnels and raises. The only place where actual proof of continuity of ore is scant is in the vicinity of Diamond Drill Holes 10 and 19, which were in igneous dikes. However, I feel that ore in this vicinity is reasonably assured because of the uniformity of mineralization in the ore bearing formation as found in near by drill holes.

In determining the ore developed I have prepared 14 cross sections through the deposit and made use of all the information secured by carefully logged and assayed diamond drill holes. With the exception of two holes--18 and 25--the core has been 2 inches in diameter. Due to poor core recovery, I have combined the core and sludge assays, weighting the results in proportion to the weight of core and sludge. No discount of sludge assays was made because I believe the lower value of the overflow from the sludge box is offset by loss of values in water courses and

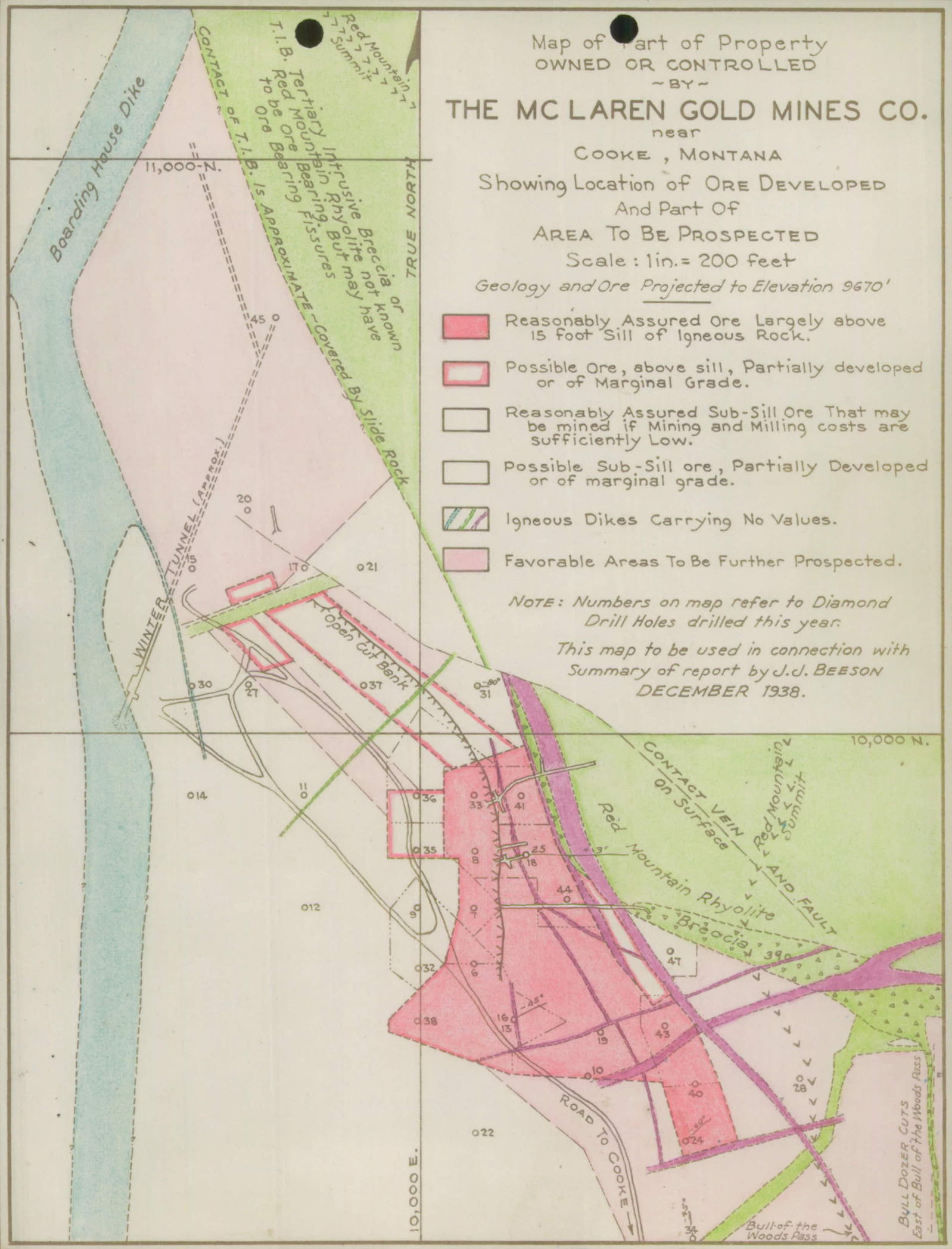
dilution by caveing from unmineralized formation above the ore. In any event this will be equalized by the 20 per cent dilution factor that has been used.

Included in the Reasonably Assured ore is 12,000 tons of sub-sill ore where the sill is thin or mineralized so that the lower ore can be mined with the upper without substantial dilution.

In the areas listed as Possible Ore above the sill it has been necessary to assume values based on limited samples but in my opinion the estimates are conservative. Also all of this ore can be mined by surface methods with comparatively low costs. This ore is also largely oxidized which will mean a high ratio of concentration of the gold, but with a low recovery of silver and copper.

The Reasonably Assured Sub-Sill ore, I was inclined to include only as Possible Ore because it will require underground mining, but in view of its thickness and grade, I believe with improved methods of mining--power shovels and slushing--it can be mined at a profit.

The Possible Sub-Sill ore is listed thus partially because of its low value and partially because the development work has been insufficient to determine the value. Whether it is mined at all will depend on the success with which higher grade ore is mined.


Map of Part of Property
OWNED OR CONTROLLED
~BY~
THE MC LAREN GOLD MINES CO.
near
COOKE, MONTANA
Showing Location of ORE DEVELOPED
And Part Of
AREA TO BE PROSPECTED
Scale: 1in. = 200 feet
Geology and Ore Projected to Elevation 9670'
Reasonably Assured Ore Largely above 15 foot Sill of Igneous Rock.
Possible Ore, above sill, Partially developed or of Marginal Grade.
Reasonably Assured Sub-Sill Ore That may be mined if Mining and Milling costs are sufficiently Low.
Possible Sub-Sill ore, Partially Developed or of marginal grade.
Igneous Dikes Carrying No Values.
Favorable Areas To Be Further Prospected.
NOTE: Numbers on map refer to Diamond Drill Holes drilled this year.
This map to be used in connection with Summary of report by J.J. BEESON DECEMBER 1938.
Boarding House Dike
Red Mountain Summit
T.I.B.
Tertiary Intrusive Breccia or Red Mountain Rhyolite not known to be ore Bearing But may have Ore Bearing Fissures
CONTACT OF T.I.B. IS APPROXIMATE ~ Covered By Slide Rock
TRUE NORTH
11,000-N.
WINTER TUNNEL (APPROX.)
Open Cut Bank
CONTACT VEIN AND FAULT ON Surface
Red Mountain Summit
Red Mountain Rhyolite Breccia
10,000 N.
10,000 E.
ROAD TO COOKE
Bull of the Woods Pass
BULL DOZER CUTS East of Bull of the Woods Pass

4. ORE RESERVES, See Attached Map For Location

Note: Silver assays incomplete, 1 oz. per ton assumed in totals

Reasonably Assured Ore	Tons	Gold ozs.	Copper %
a. Largely sulphide above sill without any dilution	383,400	.29	1.50
Dilution due to small dikes	18,078	-	-
Total including dike dilution	401,478	.27	1.43
20% dilution due to wash and low grade material, value assumed	80,295	.03	.25
Total including all dilution	481,773	.235	1.20
Possible Ore Largely above sill including 20% dilution			
a. Sulphide ore between large dikes and between D.D.Hs. Nos. 44 and 43, indicated by geology, but not proven by development	14,200	.33	1.00**
b. Oxidized ore between D.D.Hs. Nos. 35 and 36	870	.24*	1.00*
c. Oxidized ore between north end of Reasonably Assured Ore and north end of Open Cut	20,000	.18*	.70*
d. In vicinity of Bulldozer Cut north end of Open Cut Half oxidized, half sulphide	300	.20*	1.25**
e. Oxidized Ore, in vicinity of Shaft No. 4	5,100	.18*	.70*
f. Oxidized Ore in Contact Vein 4000 tons .25% gold with 25% dilution	5,000	.20	-
Total	45,400	.23	.90
**Recoverable Copper	15,000		1.10
g. Broken ore in dumps, oxidized. Total	10,000	.16	

*Values Assumed

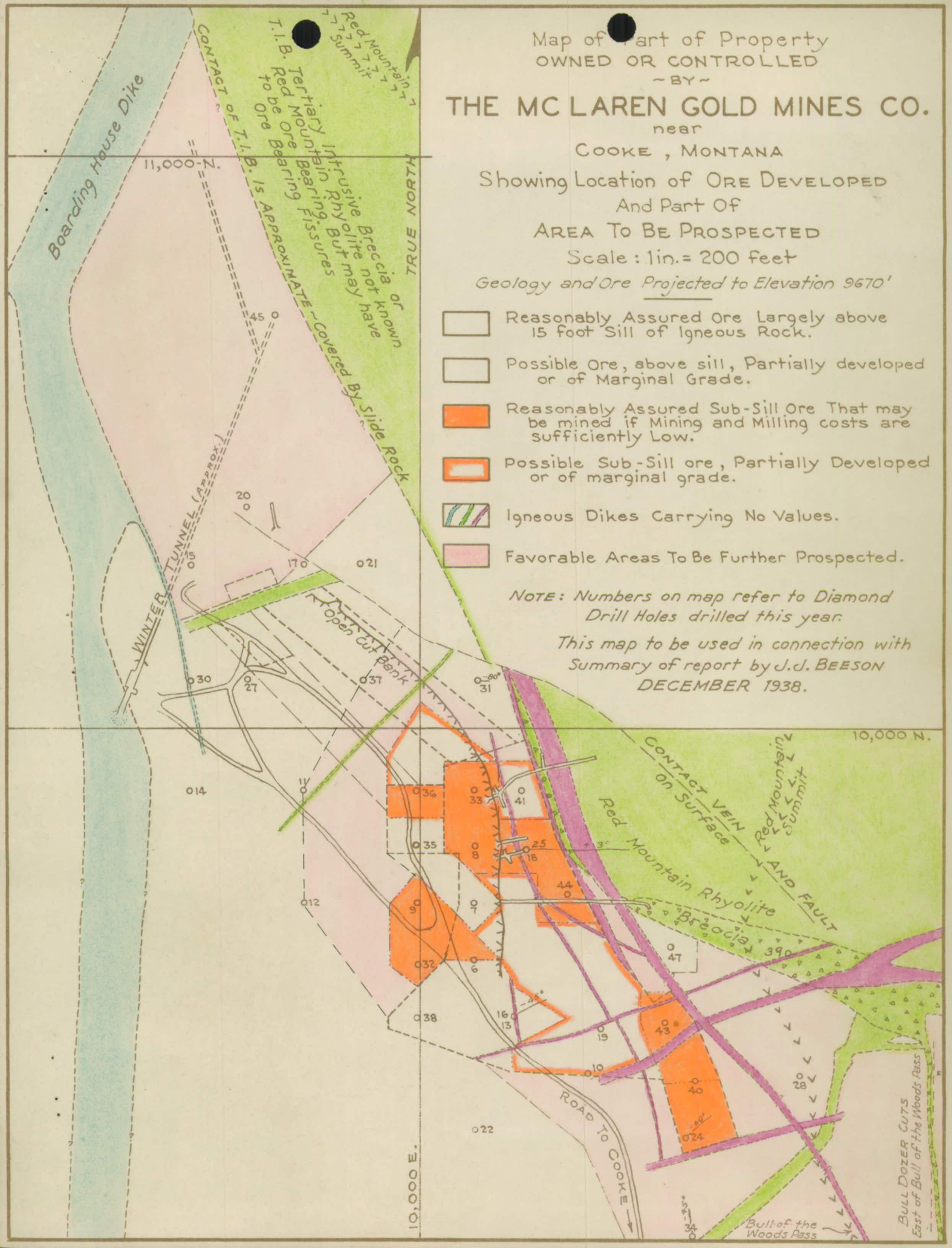
Note: Probably little or no copper will be saved from the oxidized ore.

5. ORE RESERVES CONTINUED SUB-SILL ORE

Note: The Sub-Sill is ore that may be mined if low mining and milling costs are secured.

	Tons	Gold ozs.	Copper %
Reasonably Assured in area shown on map			
Without dilution	58,030	.20	1.39
After dike dilution	59,885	.197	1.34
After dilution 20% material assaying .02 gold .25% copper	71,862	.168	1.17
Probable Total	71,800	.17	1.17
Possible Ore in area shown on map			
Without dilution	48,640	.1736	.89
After dike dilution	50,588	.175	.86
After 20% dilution	60,706	.149	.76
Probable Total	60,700	.15	.76

Note: In the above ore an average of 1 oz. silver will be assumed.


Map of Part of Property
OWNED OR CONTROLLED
~BY~
THE MC LAREN GOLD MINES CO.
near
COOKE, MONTANA
Showing Location of ORE DEVELOPED
And Part Of
AREA TO BE PROSPECTED
Scale: 1in. = 200 feet
Geology and Ore Projected to Elevation 9670'
Reasonably Assured Ore Largely above 15 foot Sill of Igneous Rock.
Possible Ore, above sill, Partially developed or of Marginal Grade.
Reasonably Assured Sub-Sill Ore That may be mined if Mining and Milling costs are sufficiently Low.
Possible Sub-Sill ore, Partially Developed or of marginal grade.
Igneous Dikes Carrying No Values.
Favorable Areas To Be Further Prospected.
NOTE: Numbers on map refer to Diamond Drill Holes drilled this year.
This map to be used in connection with Summary of report by J.J. BEESON DECEMBER 1938.
Boarding House Dike
Red Mountain Summit
T.I.B. Tertiary Intrusive Breccia or Red Mountain Rhyolite not known to be Ore Bearing. But may have Ore Bearing Fissures
CONTACT OF T.I.B. IS APPROXIMATE ~ Covered By Slide Rock
TRUE NORTH
11,000-N.
WINTER TUNNEL (APPROX.)
Open Cut Bank
CONTACT VEIN AND FAULT on Surface
Red Mountain Rhyolite Breccia
Red Mountain Summit
10,000 N.
10,000 E.
ROAD TO COOKE
Bull of the Woods Pass
BULL DOZER CUTS East of Bull of the Woods Pass

SUMMARY OF GROSS VALUES IN ORE RESERVES

Note: Values figured on the following basis:

Gold at $35 per ounce; silver at 70 cents per ounce; and copper at 10 cents per pound.

Reasonably Assured Ore, above sill

	Gold	Silver	Copper	Total
	$	$	$	$
Average per ton	8.23	.70	2.40	11.33
Total 481,773 Tons	3,962,595	337,241	1,156,255	5,456,091
Possible Ore above sill				
Average per ton	8.05	.70	2.20	10.95
Total 45,500 Tons	365,470	31,780	33,000	430,250
Possible Ore in dumps				
Average per ton	5.60	—	—	5.60
Total 10,000 Tons	56,000	—	—	56,000
Reasonably Assured Sub-Sill Ore				
Average per ton	5.95	.70	2.20	8.85
Total 71,800 Tons	427,210	50,260	157,960	635,430
Possible Sub-Sill Ore				
Average per ton	5.25	.70	1.52	7.47
Total 60,700	318,675	43,490	93,364	453,429
Total All Classes	669,673 Tons			$7,031,200

It must be clearly understood that the values shown on the foregoing summary are gross and do not include any deduction for metallurgical losses. Also mining, milling, smelting, and transportation costs are not deducted.

At the Glengarry property about 120,000 tons of low grade possible ore is indicated by the three diamond drill holes, old tunnels, several hundred feet of new tunnel--run by the McLaren Company this summer--, and by numerous new surface pits. It is hoped that the Winter Tunnel and additional exploration next summer will add to this tonnage and give more definite information as to its value.

South and east of the ore reserves shown on the maps I believe that, in the favorable area indicated, there will be in excess of a hundred thousand tons of ore developed by additional prospecting. This statement is based on the fact that Diamond Drill Hole No.28 showed substantial mineralization with 3½ feet assaying .11 oz. gold and 4.25% copper and by the additional evidence disclosed in the bulldozer cuts east of the Bull of the Woods Pass. In the latter the shales are heavily replaced with oxidized iron (gossan) that carries up to .20 oz. gold for a distance of over a hundred feet horizontal.

7. Mining costs in my last year's report were estimated at $2.00 per ton and the Newmont engineers made a rough estimate and arrived at the same figure. Personally, I believe this to be a maximum and with improved mining methods due to experience in this deposit a substantial reduction may be made. For the present, the above estimates are at best only a guess.

8. Milling costs have been estimated at $1.75 per ton, due to the complex nature of the ore. Here again it is difficult to make a close estimate because, the only work done recently on the metallurgy gave poor results.

In my last year's work I recommended that additional experimental work be done on the ore to determine the best method of treatment. It is generally conceded that selective flotation is likely to give the best results. Thus I believe that the company should have this work done this winter by a competent metallurgist who can devote enough time to the problem to arrive at reliable results. This will have an important bearing on the future of the property both in determining the capital necessary to build a mill and in arriving at a reasonable estimate of the milling cost. For the present, I will place my estimate of the milling cost at $1.50 per ton. Milling losses will probably be 10 per cent of the value of the gold and copper and silver.

9. Other costs include $1.30 per ton, of crude ore, to market the concentrates. An additional cost of 75 cents per ton for overhead and taxes is reasonable.

10. The Total cost using the above estimates and making an allowance of 30 cents per ton for current development, but without including depreciation, depletion, interest, other amortization costs or federal taxes makes a cost of $5.85 per ton. To this must be added a 10 per cent metallurgical loss which makes a cost of $6.98 on the Reasonably Assured Ore, $6.94 on the Possible Ore above the sill, $6.63 on the Reasonably Assured Sub-Sill Ore, and $6.59 on the Possible Sub-Sill Ore. In round figures I would place the total cost of mining and milling at $7.00 per ton on the Reasonably Assured and Possible Ore above the sill and at $6.60 on the Sub-Sill Ore.

The dump ore should not cost more than 50 cents per ton to mine and this would give a cost of $4.50 per ton.

11. The Possible Net Profit based on a 300 ton daily production using the above figures is approximately $2,450,000. If a cost of $350,000 is allowed for the mill and $100,000 for the construction of a tramway* from the mine to Cooke the net may be approximately $2,000,000, less property and royalty payments.

The above estimate is based on the theory that the mine will not be leased but operated with adequate equipment and the utmost efficiency.

If the driving of the Winter Tunnel and other exploration is reasonably successful, the profit will be improved in proportion to the results secured.

Respectfully submitted,

J. J. Beeson

*If a metallurgical process is developed that will concentrate the valuable metals to bullion at the mine a tramway will not be necessary.

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OBSERVATIONS ON THE GEOLOGY AND MINING OF THE

TOLAGEN GOLD MINING COMPANY

BOTTER CITY, MONTANA

by

R. J. Taloit

G. D. Jorano

-o-

Property Visited

August 10-12, 1940

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Report Dated

December 6, 1940

Gilman, Colorado

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Sections 1 to 13 Inclusive 1" = 40'	In Pocket
Assay Plan 1" = 40'	"

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CONFIDENTIAL REPORT ON THE
OF THE
[illegible] GOLD MINING COMPANY,
GOLD CITY, MONTANA

INTRODUCTION

The following report presents our analysis of tonnage, stripping and grade of the Molaren orebody as a background for considering the application of underground mining methods to the southeast end of this orebody. We have taken the liberty of making some comments and suggestions bearing on operating conditions. Results of an examination of ore specimens are given. Concluding the report is a description of the 40 scale model being forwarded to Mr. E. G. Jones.

In making this study we have referred to all material so generously loaned to us by Mr. Jones and to a report on the New World mining district by Dr. T. S. Lovering. (U.S.G.S. Bulletin 811, pp. 1-57)

While reviewing the data and comments presented herein, reference should be made to the accompanying 1 inch = 40 feet assay plan and sections which Mr. U. L. Ostermeier reduced from Mr. J. J. Pearson's 20 scale maps, dated 1930, and to the model. On the sections proposed open pit tanks are indicated. Ore reserve blocks and the approximate position of the ultimate open pit outline are shown on the plan.

It should be emphasized that all data are subject to modification in terms of mining and stripping work completed since 1930. However, the economics of the southeast end are susceptible to analysis in spite of this.

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[illegible]

Block	Upper Orebody Tons (1)	Overburden Upper Orebody Tons (1)	(2) S/O	Lower Orebody Tons (1)	Overburden After Upper Orebody Stripped and Removed Tons (1)	(2) S/O
1 From Section 1 northward to solid color limits	19,105	50,637	2.65:1.00	6,555	10,000	1.00:1.00
2 Block 100' x 120'. Between and extending 10' beyond Sections 1 and 2	7,302	63,003	1.10:1.00	2,079	83,047	2.10:1.00
3 Between Sections 1 and 2 but excluding Block 2	45,609			13,620		
4 Between Sections 2 and 3 but excluding Block 5	61,013	90,127	1.40:1.00	15,150	31,000	2.00:1.00
5(3) From Section 3 to 25' north; sections 3-4 and 4-5 but excluding blocks 4, 6 and 7	0	0	—	20,300	30,624	0.00:1.00
6 Between Sections 3 and 4 but excluding Block 5	63,956	104,832	1.60:1.00	10,572		
7 Between Sections 4 and 5 but excluding Block 5	101,802	100,037	1.00:1.00	8,100(4)	11,000	1.35:1.00
8 Between Sections 5 and 7	75,802	120,712	1.60:1.00	2,750(4)	0	—
9 From Section 7 to 125' south	10,375	102,032	10.45:1.00	0	0	—
TOTALS	399,344	795,123	1.99:1.00	78,340	117,291	1.50:1.00

NOTES:

(1) Factors used: Tons Ore = Cubic Feet ÷ 10 Tons Overburden = Cubic Feet ÷ 15

(2) S/O = Stripping to ore ratio - compared in tons. As this ratio increases the cost of stripping per ton of ore increases.

(3) This block may be too low grade, but stripping for adjacent blocks produces a S/O ratio in favor of mining.

(4) Mine with upper orebody.

Orebody	Tons of Ore	Tons of Overburden	S/O
Upper	395,844	705,123	1.78:1.00
Lower	78,346	217,291	1.50:1.00
Totals	474,190	922,414	1.71:1.00
20% Dilution	+99,638	-143,657 (1)	1.50:1.00
Final Totals	573,828	766,757	1.34:1.00

NOTES:

(1) Using the assumed conversion factors of 10 for ore and 10 for waste, it follows that ore weighs 1.5 times as much as waste. Consequently when 20% dilution is introduced and ultimate ore tonnage is increased by 95,638 tons, the stripping figure must be reduced by 1.5 times 95,638 tons. This is further based on the assumption that all dilution will result from stripping operations. This assumption is essentially correct since "horses" of shale and porphyry have been included in ore tonnage and grade estimates.

ACCURACY OF ORE TONNAGE

The figures above infer an accuracy which is not possible in estimating. It is usually desirable, however, to record the figures as calculated and not convert them to round numbers. This comment applies equally to overburden estimates.

With the exception of blocks two and five our estimate has been limited to the ore shaded in red on plan and section.

Since part of the material included in the lower orebody estimate is definitely low grade, an analysis of grade by blocks is also included with this report. To determine at any time whether it is feasible to handle these low grade blocks, it will be necessary to study grades in connection with stripping-ore ratios and relate them to operating costs.

ACCURACY OF OVERBURDEN TONNAGE

In calculating the tonnage of waste to be stripped a 1 to 1 (45 degree) bank has been assumed. Experience may prove this to be too steep. Any flattening required will adversely affect the ratio of stripping to ore.

and conversely, any banks which can be held steeper than 45 degrees will favorably affect this ratio and improve the economics of the operation.

The average angle of repose for alluvial material at the mine is about 30 degrees. Section number seven shows the steepest angle of 35 degrees. However, it is believed that resistant areas of rock or partially consolidated "float" will allow pit banks of 45 degrees or steeper to be developed and maintained.

Banks in uncertain areas should not be over-steepened as they will present a constant hazard to men working at their toe.

At the north and south ends of the orebody stripping estimates are very approximate.

Approaches to the pit on a grade suitable for haulage have not been included in overburden estimates. (See comments on drainage - page 11)

STRIPPING TO ORE RATIO

The block by block analysis of the stripping-ore ratio assumes, in general, that the orebody will be mined as a unit and not by a less economical selective block system. However, blocks 2, 5 and 7N-8N-9 can be mined or excluded at the discrimination of the management. If a block were selected for mining and those blocks on either side were excluded, it follows that the stripping-ore ratio for the block in question should be increased - since pit banks will be sloping into the block from four sides. The ratios are calculated for sloping banks at the two ends of any block except for the north and south ends of the orebody where three banks are considered. (Note higher S/O ratios)

Dilution of 20% is not strictly applicable to the lower orebody. It is believed that this ore will be more economical to mine that the figures suggest.

When considered with block three, the stripping-ore ratio for the lower orebody in block two appears favorable, but in detail the depth of the ore caused by faulting, dip and a wider than usual waste "horse" between the upper and lower orebodies may preclude the mining of the lower orebody in block two.

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CONCLUSION

The following estimates are in most cases based on too few assays. However, this summary demonstrates those areas of uncertain grade and aids in analysing the southern portion of the orebody.

Where the assays are definitely too few, the tonnage is starred.

TABULATION

Block	UPPER OREBODY			LOWER OREBODY			WEIGHTED AVERAGES		
		Grade			Grade			Grade	
	Tons	oz.Au	% Cu	Tons	oz.Au	% Cu	Tons	oz.Au	% Cu
1	19,105	0.468	1.32	*5,555	0.160	2.88	24,660	0.399	1.67
2	7,302	0.260	0.70	*2,070	0.046	0.72	9,381	0.257	0.70
3	*45,859	0.390	1.91	*13,620	0.246	1.50	59,479	0.357	1.82
4	61,613	0.297	1.51	*15,150	0.221	0.67	76,963	0.284	1.34
5	0	---	---	*20,300	0.113	0.83	20,300	0.123	0.83
6	*69,056	0.282	1.49	*10,872	0.314	0.89	80,828	0.273	1.41
7	*101,852	0.2[illegible]4	1.00	*8,180	0.275	1.57	110,052	0.203	1.04
8	*75,552	0.264	0.87	*2,790	0.250	1.60	78,342	0.264	0.89
9	*16,375	0.116	0.84	0	---	---	16,375	0.116	0.84
TOTALS	399,024	---	---	78,346	---	---	477,190	---	---
Weighted Average		0.297	1.20	---	0.204	1.17	---	0.282	1.25
Dilution (1)	79,963	0.020	0.25	15,669	0.020	0.25	95,638	0.020	0.25
Summary	479,013	0.261	1.08	94,015	0.175	1.01	573,028	0.250	1.07

NOTES:

(1) Figures quoted by Pearle (December 1, 1938, pg. 5) are used: 20% dilution @ 0.02 oz. gold and 0.25% copper per ton. Silver content taken @ 2.0 oz. silver for each ounce of gold.

It is unfortunate that silver assays are so incomplete. We believe the 2:1 ratio often under-estimates silver by several hundred percent.

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At the southeast end of the orebody the overburden is so deep that the economics of open pit mining is questioned. Though our cut-off line is somewhat arbitrary in this area, we have segregated that tonnage in blocks 7X-8X-9 which would be most difficult and costly to mine by open pit methods and compared it with the stripping required for its recovery.

BASIC CALCULATION

	Total With No Dilution	20% Dilution	Total With Dilution
Ore-blocks 7X-8X-9	28,189 tons	+ 5,764	33,954
Stripping to recover this ore	252,753 tons	- 8,070	244,713
Stripping to ore ratio	8.97:1.00	1.65:1.00	7.21:1.00

STRIPPING COST ANALYSIS

Since we have no actual cost data to correctly complete this analysis, we will proceed on assumptions which, if grossly incorrect, can be revised.

We believe that $0.40 per ton will cover the cost of stripping and providing access roads. (Note: With factors for overburden, one cubic yard equals approximately two tons.)

Stripping Cost per Ton of Ore - - - - 7.21 x $0.40 = $2.88
Open Pit Cost of Mining and Loading (Estimated) - - 0.45
Total Open Pit Mining Cost into Truck - - - - - - - $3.33

To this total cost figure must be added all subsequent charges which likewise apply to ore mined by an underground method and need not be considered in a choice of methods.

The cost of $3.33 per ton is probably a minimum. If a cleaner job of stripping to improve the grade is attempted, the cost would be higher.

Assuming no dilution the total into the trucks would be:

$$0.97 \times \$0.40 = \$3.63 \div 0.45 = \$4.06 \text{ per Ton}$$

UNDERGROUND MINING COST ANALYSIS

If the 28,189 tons were completely recovered by underground mining, a square set method would be required due to the character of the ore and altered wall rock. Under these conditions we seriously doubt that a mining cost under $4.00 per ton could be achieved.

To develop this section for mining would require approximately:

330' of Tunnel
260' of Cross-Cuts

Total = 590' of Driving (All in Waste)

In addition approximately 60' of raising in waste would be necessary.

The minimum cost per foot of this work - complete with pipe, track and timber would be $20.00 for driving and $25.00 for raising.

590' @ $20.00/ft. =	$11,800.00
60' @ $25.00/ft. =	1,500.00
Total Development Cost =	$13,300.00

$$\text{Development Cost per Ton} = \frac{\$13,300.00}{28,189} = \$0.47$$

SUMMARY

Underground Mining Cost per Ton	$4.00
Development Cost per Ton	.47
Total Cost per Ton	$4.47

Add to this pipe, track and amortization of haulage, ventilation and safety equipment. This total cost plus the normal hazards and difficulties attendant to underground mining prove that stripping methods for recovering this ore are to be favored -- even with a 9 to 1 stripping-ore ratio.

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Up to this point value of the ore has not been considered. Before analyzing grade, it should be re-emphasized that the data is insufficient.

Based on diamond drill holes 46, 40 and 33 the 28,109 tons of ore in question averages 0.120 oz.Au, 0.86 % Cu and 0.25 oz.Ag. (Based on Searls' Ag-Au ratio of 2:1) Drill holes 40 and 26 which control the largest section of this ore average 0.115 oz.Au and 0.04% Cu. Therefore, it is possible that the actual final grade of this block may be lower than an average of the three holes would indicate.

GROSS VALUE PER TON OF ORE

0.120 oz. Au @ $34.0125 =	$4.67
0.25 oz. Ag @ $0.90125 =	0.23
0.86% Cu (17.2# @ $0.12/#)* =	2.06
Total Gross Value	$6.76
less 20% Dilution (Valued @ $1.30/Ton)	1.30
Gross Value per Ton of Diluted Ore	$5.67

* $0.12 Copper is regarded as a safe figure in estimating.

Comparing this value with the cost of stripping, dilution considered:

Gross Value of Ore =	$5.67
Stripping Cost =	3.38
Gross Value per Ton Stripped =	$2.34

Disregarding Dilution:

Gross Value =	$6.76
Stripping Cost =	4.04
Gross Value per Ton Stripped =	$2.72

Either remainder must cover the cost of mining, truck haulage, milling, mill losses, marketing concentrates, smelter deductions and smelting cost, repairs and maintenance, supervision, amortization and interest.

From this analysis we conclude that the material in the southeast end of the orebody is definitely marginal and will not be susceptible to either stripping or underground mining methods under the cost and price conditions assumed above.

Possibly some higher grade sections of this ore can be recovered by "gouging" back from the open pit bank as it reaches this section.

Before elimination of the southeast end from the reserve is accepted, several diamond drill holes should be placed to confirm grade information and to test for possible ore extensions.

Incidentally a comparison of the two remainders above suggests that the greater profit margin per ton is to be had by mining with less dilution, but due to the tonnage increase, and some slight values in the diluting material, the greater ultimate value results from handling diluted ore.

An additional point worth noting is the greater proportion of bed rock to float shown on section seven. This infers that considerable rock work would be required in stripping the southeast end at costs probably higher than the $0.40 per ton used in our estimate.

ECONOMIC SUMMARY-ELIMINATING SOUTHEAST END

The following summary provides conclusive evidence that the economics of the entire operation can be improved by the elimination of the southeast end. However, judicious attention should be paid to the stripping-ore ratio for each block. It is recommended that the stripping-ore ratio should never be allowed to fall below 1.50 to 1.00 during the life of the operation.

Totals	Tons Ore	oz.Au	% Cu	Tons Overburden	O/O Ratio
No Dilution	478,100	0.262	1.25	912,414	1.91:1.00
Less S.E. End	28,109	0.186	0.00	251,705	8.97:1.00
Remainder	450,001	0.202	1.26	650,651	1.47:1.00
20% Dilution	90,000	0.020	0.25	135,000	1.50:1.00
Final Summary	540,001	0.266	1.00	524,651	0.97:1.00

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PIT OPERATION

In any one block if the lower orebody is of lower grade than the upper orebody, the sub-sill ore should be developed and mined simultaneously with the upper orebody in order that an average mill feed can be maintained and depletion can proceed at an orderly rate. If departure is taken from this practice, certain sections of the lower orebody may become uneconomic.

During stripping it will be worthwhile to sample the overburden occasionally - especially the more oxidized sections since it is possible that some residual enrichment of gold may have taken place. More economic gold recovery could probably be made from this material by segregation and shipping it directly to the smelter.

Due to the seasonal nature of the work, stripping should not be advanced too far ahead of mining. This statement merely re-emphasizes the recommendation that the stripping-ore ratio be maintained at 1.0:1.0. Banks of 40 degrees would cave badly during spring thaws thus requiring that much extra overburden be handled.

Care should be taken during stripping operations that waste is removed to a locality where it will not require re-handling or present an obstacle to future prospecting activities.

As mining progresses it will be advisable, at least once a month, to measure accurately positions of stripping and mining banks. On the same periodic basis grades of remaining blocks and the stripping-ore ratio should be reviewed.

PIT DRAINAGE

Analysis of the ultimate pit outline has indicated a natural drainage point at the southwest edge of the orebody. (See Plan) In planning all phases of pit development greatest advantage should be taken of this point for access and egress

GEOLOGY

Mr. Jones has noted Mr. Coddard's* observation that the McLaren orebody pitches downward to the east. The sections and model demonstrate very clearly that the orebody dips gently southwestward and pitches almost due south. In a sense this supports Mr. Coddard's view over his superiors' belief that the McLaren deposit is a horizontal manto.

An examination of the model suggests that very little of the actual orebody has been subjected to erosion. However, if it has not been done previously, some panning tests should be made on the property, particularly in probable waste disposal areas, so that alluvial gold can be cleaned up prior to dumping waste.

The oxidized nature of the ore is undoubtedly an important reason for poor metallurgical results. Since much of the diluting material will be oxidized, it will be well to keep dilution below our assumed 20 percent. If this can be done, better overall mill recoveries can be anticipated.

We suggest the orebody be checked for the occurence of scheelite and possibly molybdenite.

(* Anaconda geologist)

In conducting exploration by headings or drill holes acute angle intersections between those porphyry dikes most closely related to the ore stage and the favorable host rock should receive close attention.

We believe that the southern portion of the property has been inadequately prospected and recommend that consideration be given to additional drilling on the Raven and Bull of the Woods claims.

/s/ P. J. Walsh
P. J. Walsh

/s/ G. E. Jerome
G. E. Jerome

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APPENDIX 3

EXAMINATION OF POLISHED SECTIONS

Five polished sections, being forwarded to Mr. G. B. Jones, were prepared from random ore specimens collected during our August visit. These were made principally to satisfy our curiosity regarding the nature of the ore and to assist in proposed metallurgical tests. These particular specimens do not contain all minerals known to exist at this property.

The following results are reported by Messrs. J. W. Coleman and O. Hagman.

Minerals Present:

Pyrite - locally highly fractured
Chalcopyrite
Magnetite
Gold
Soft Grey Gangue (highly altered shale)

Paragenesis:

Shale
Pyrite
Chalcopyrite
Gold
Magnetite

All minerals except gold were found in all sections. Free gold was identified with certainty in only the section labeled Meter. #1. Silver minerals, though known to be present, were in too minute a quantity to permit identification.

The presence of free gold in the polished sections is of considerable economic interest. The representative of the McLaren Gold Mines Company at the smelter should be aware of this fact and watch the screening of samples closely for the presence of gold.

APPENDIX II

McLAREN ORE MODEL

Using transparent, rigid "Plexiglass" for sections and the assay plan mounted on plywood for a base, a model of the McLaren orebody has been constructed and forwarded to Mr. G. B. Jones. This model should be of inestimable value in planning and following operations at the mine. To be most useful it should be brought to date periodically. At the present time extent of stripping and mining operations since 1938 should be posted.

Unfortunately the 20 scale maps and sections which we used for our basic information were found to be distorted (probably due to wet process printing), and this distortion, though on a reduced scale, is carried into our 40 scale plan, sections and model. This accounts for the lack of exact conformity, both on plan and section, between drill holes and section lines in the model. That condition, however, does not detract from its value.

Although several staff members were active in its conception and construction, the model's high quality is due principally to Mr. J. W. Johnson's careful workmanship.

MODEL ASSEMBLY

The model, contained in two wooden crates, is unassembled.

Upon removal from the larger crate, the base should be placed on a table or the floor - map side up. The sections in the small crate should then be placed vertically in the end slots along their respective lines indicated on the base. The order of assembly is as follows:

First - Section 8
Then - Section 9
Etc. - Section 10

West End of Section 12
Section 1
Section 11
Center of Section 12
Section 2
Section 3
Section 13
Section 5
West End of Section 4
East End of Section 4
Section 6
S.E. end of Section 10, and finally,
Section 9

CONTROL OF MODEL COVERS

Do not force the sections when joining them at intersections. Check to see that slots are meshing if too much resistance is encountered.

Care should be exercised in handling the sections as they break easily. The color tinting and lettering is destructible. The coloring is quite resistant, but the ink can be eradicated quite easily.

MODEL COVER

Accompanying the model is a dust cover of transparent acetate, contained in a mailing tube. This cover may be assembled by means of round-head split paper fasteners. Sides and ends of the cover correspond respectively to those of the model base and are so marked. The top is properly labelled.

Since acetate may split if bent sharply, corner positions should be left as smooth curves. If the acetate splits, it can be reinforced with cellulose tape, or the broken edges may be re-joined by the careful application of acetone.

Since sections five and seven project beyond the model base a portion of the east side of the cover must be removed along the indicated lines.

LEGEND

- Q — Alluvium
- Tmp — Monzonite Porphyry
- Tbb — Early Basic Basalt
- Ob — Bighorn Dolomite
- Egl — Gallatin Limestone
- Egv — Gros Ventre, Shale and Limestone
- Ef — Flathead Quartzite
- Ar — Granite
- Faults
- ① Proposed Diamond Drill Holes

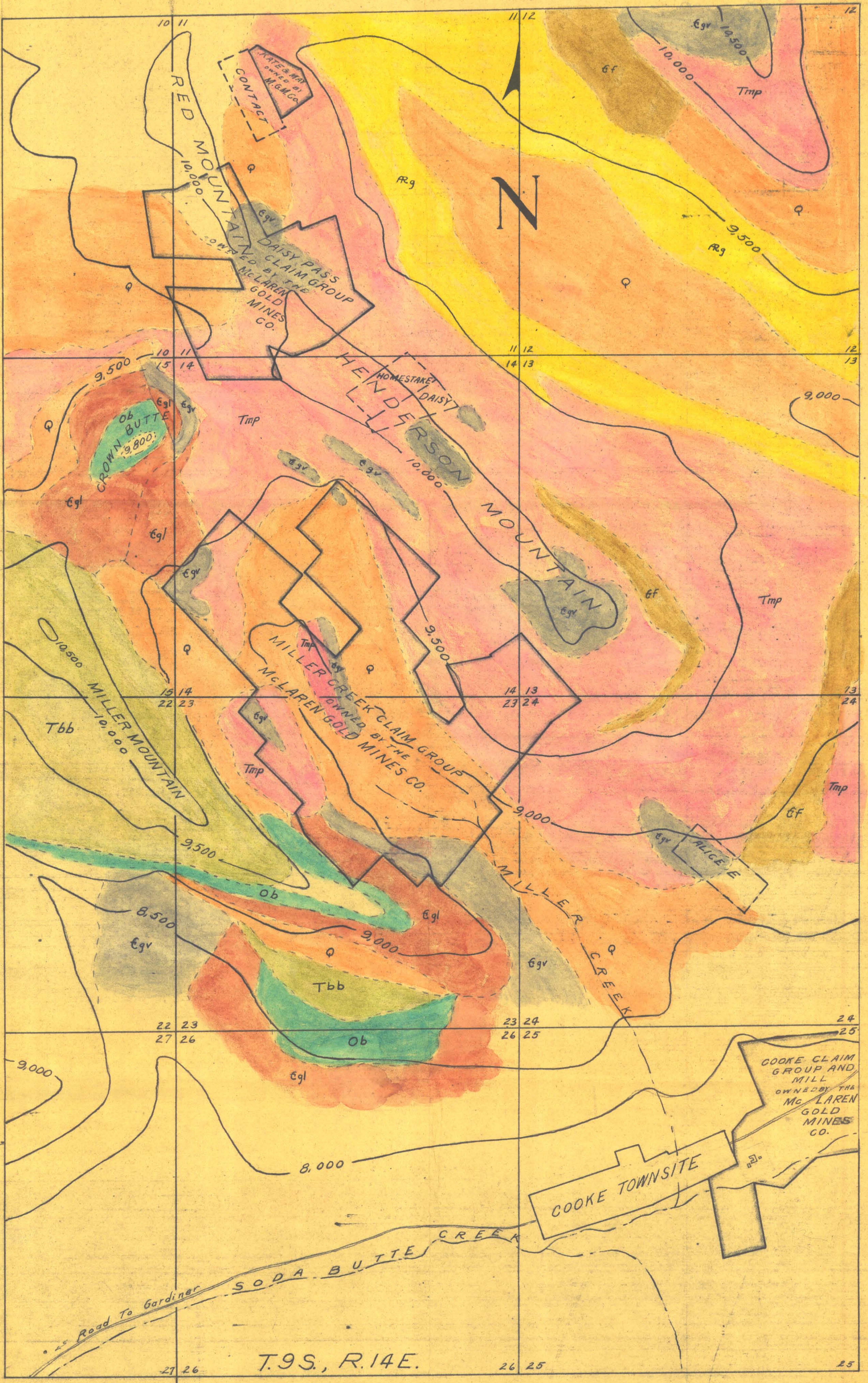
SURFACE GEOLOGY AND CLAIM MAP OF MILLER CREEK CLAIMS

OWNED BY

THE McLAREN GOLD MINES COMPANY

SCALE: 1 IN. = 400 FT. Nov. 15, 1951

W.H.H.



LEGEND

- Q — Alluvium
- Tmp — Monzonite Porphyry
- Tbb — Early Basic Basalt
- Ob — Bighorn Dolomite
- Єgl — Gallatin Limestone
- Єgv — GrosVentre Formations
- Єf — Flathead Quartzite
- ARg — Granite
- (blank box)

MAP SHOWING CLAIMS OWNED BY

McLAREN GOLD MINES COMPANY

LOCATED IN THE

NEW WORLD MINING DISTRICT

PARK COUNTY, MONTANA

SCALE: 1 IN. = 1,000 FT. FEB. 28, 1952

W.H.H.

DMEA 2291
McLAREN GOLD MINES CO.

LEGEND

- Q — Alluvium
- Tmp — Monzonite Porphyry
- Tbb — Early Basic Basalt
- Ob — Bighorn Dolomite
- Egl — Gallatin Limestone
- Egv — Gros Ventre; Shale and Limestone
- Ef — Flathead Quartzite
- Ag — Granite
- Y — Faults

SURFACE GEOLOGY AND CLAIM MAP OF MILLER CREEK CLAIMS

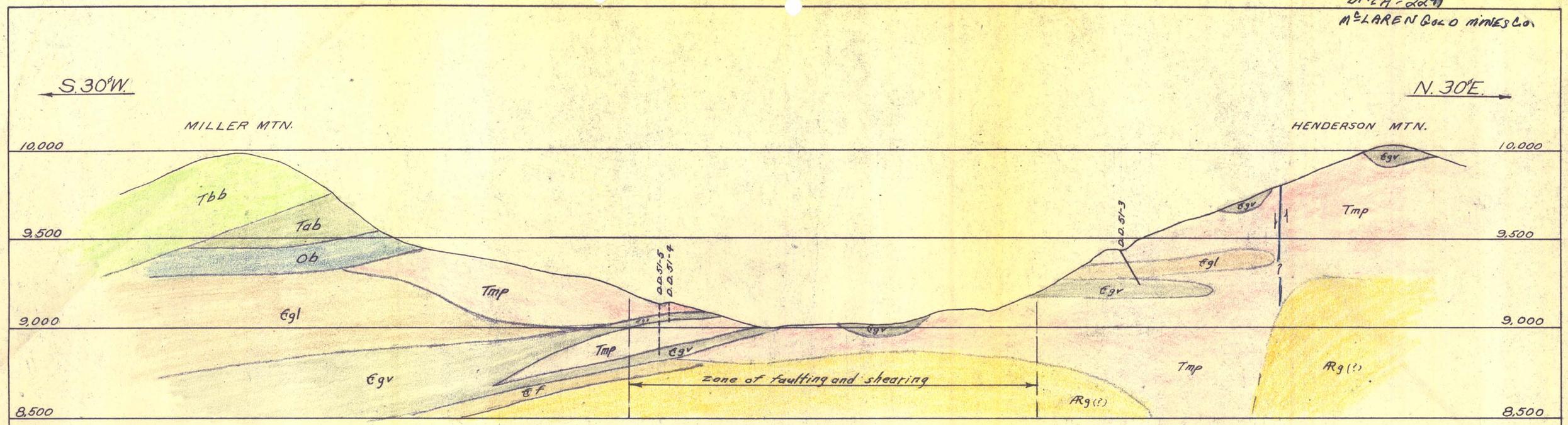
OWNED BY

THE McLAREN GOLD MINES COMPANY

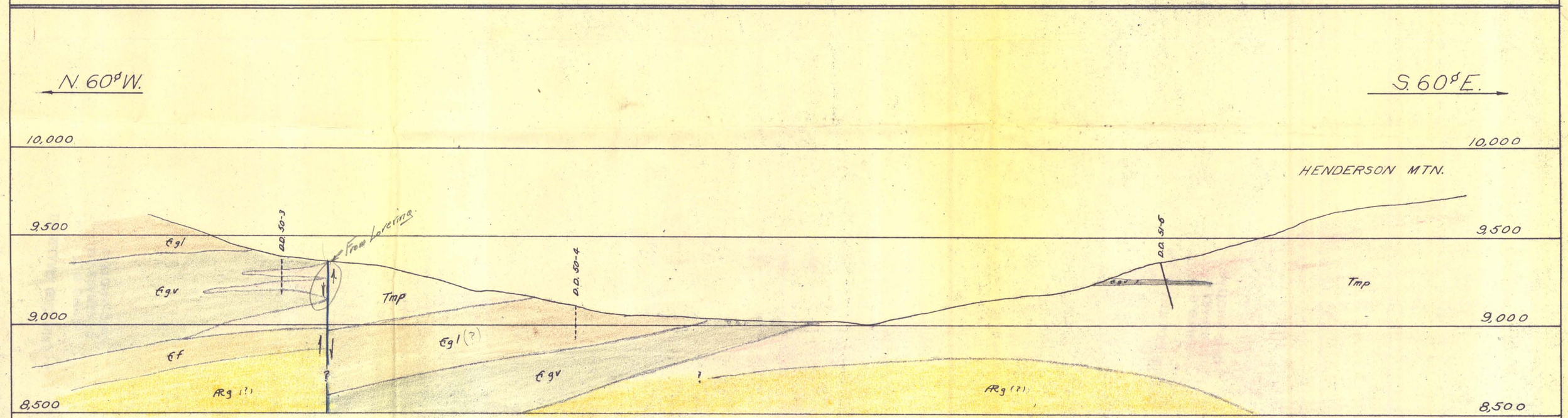
SCALE: 1 IN. = 400 FT. Nov. 15, 1951

W.H.H.

DMEA-229
McLAREN GOLD MINES CO.



SECTION A-A', LOOKING N. 60° W.



SECTION B-B', LOOKING N. 30° E.

LEGEND

- Q — Alluvium
- Tmp — Monzonite Porphyry
- Tbb — Early Basic Basalt
- Ob — Bighorn Dolomite
- Ꞓgl — Gallatin Limestone
- Ꞓgv — Gros Ventre, Shale and Limestone
- Ꞓf — Flathead Quartzite
- ARg — Granite
- Faults
- Tab — Early Acidic Basalt

GEOLOGIC SECTIONS THROUGH MILLER CREEK AREA

SCALES: 1 IN. = 400 FT. Nov. 20, 1951

W.H.H.