DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 577

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Routing Slip

To: Director, Supply Div.	Date	9/7/51
To: Production Expansion Division	Date	SEP 7 1951
To: Rare & Misc. Metals	Date	1-3-52
To: Mails & Files	Date	4-5-52
To:	Date	
To:	Date	
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Production Expansion Division
Products and Records Division

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CONTROLLED DOCUMENT

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

April 4, 1952

BL

Memorandum

To: Mails and Files

From: Ernest Wm. Ellis, Chief
Rare and Misc. Metals Division

Subject: Docket No. DMA-577
Sierra Copper Company
McCarty Mine

The above docket is being considered closed on our records for the reason that applicant has not responded to requests transmitted in September, 1951, and January, 1952, for certain information which would enable the DMEA to further process the application.

Should the applicant pursue the matter further at some future date, the docket can then be reactivated. The docket file is attached.

Ernest Wm Ellis

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
APR 7 1952

500

FILE COPY
SURNAME:

Moulds
Mitt

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

JAN 5 1952

Mr. Roy G. Mead
920 Burchett Street
Glendale, California

Re: Docket No. DMA 577
McCarty Mine

Dear Mr. Mead:

A review of the Defense Minerals Exploration Administration files indicates that on September 18, 1951 a letter over the signature of C. O. Mittendorf was mailed to you relative to your application for exploration assistance on the McCarty Mine.

In order that we may determine the status of this application, we will appreciate receipt, at your earliest convenience, of the requested information and material, or your request to withdraw the application in the event you do not desire the exploration assistance under the requirements of Mineral Order 5, a copy of which is enclosed for your information.

Sincerely yours,

Signed

S.N. 1-5-52

D. E. Moulds, Acting Chief
Base Metals Division
Defense Minerals Exploration
Administration

DEMoulds/meh
1/4/52
cc to: Adm. R. File
Mails & Files
Mr. Moulds
Region III (2)
Docket
Enclosure-1

Mr. Mittendorf

p. a.

Mineral Entry No 13 Lot 37 Portion W½ Sec 2 NW¼ Sec 3
T1N, R12E

~~Mining Lease March 29, 1951 Neaman~~

Assignment Nov 1 1950
Charles B Wood Celesta M Wood - Ronnie B Smith

Mining Lease Oct. 2, 1950 Jackson D McCarty to
Charles B Wood.

Requires:— Assignment & assignment of
Mining Lease from Ronnie B Smith to
Sierra Copper Company
— Landlords subordination from
Jackson D McCarty
— Subordination by Charles B Wood
Roy G Meade M. Carroll Smith
if no % of royalty is conveyed.

Breakdown of engineering accounting and market of
costs — $1000.00

5 copies of map exhibit A Roy G Meed 3-16-51
marked to show hole 2 of first stage and
3 holes of 3rd stage

FILE COPY
SURNAME:

400

Mr. Mittendorf

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

Mr. Roy G. Mead, Consulting Engineer
920 Burchett Street
Glendale, California

SEP 18 1951

Re: Docket No. DMA 577
Sierra Copper Company
McCarty Mine

Dear Mr. Mead:

In order to draw up an Exploration Project Contract for the 1900 feet of drilling, hole #2 of Stage 1 and the four holes of Stage 3, which have been approved for the subject mine, it will be necessary to have the following material and information:

(1) Assignment of mining lease from Ronnie B. Smith to the Sierra Copper Company, the contracting company.
(2) Six copies of Landlord's Subordination Agreement from Jackson D. McCarty, Form MF-202.
(3) A breakdown of the cost item "Engineering, accounting, and overhead" into the separate items constituting the $1,000.
(4) Five copies of map dated 3/16/51 showing the proposed holes.

Upon receipt of the above items, a contract for the work will be drawn up and forwarded to the Region Office at San Francisco for your approval.

Sincerely yours,

C. O. Mittendorf (meH) BJ 9/18

C. O. Mittendorf, Director
Production Expansion Division

DEMoulds/meh
Typed: 9/17/51
cc to: Adm. Reading File
Reports and Records
Messrs. Mittendorf, Olund
Mr. Moulds
Mr. Billings
Mr. McKnight
Mr. Mote
Region III
Docket

UNITED STATES
DEPARTMENT OF THE INTERIOR
~~XXBUREAU OF MINESXX~~
REGION III
DEFENSE MINERALS ADMINISTRATION

OFFICE OF
~~XREGIONAL DIRECTORX~~
Executive Officer
DMA Field Team
Region III

1012 FLOOD BUILDING
870 MARKET STREET
SAN FRANCISCO 2, CALIFORNIA

September 10, 1951

Memorandum

To: T. P. Billings, Chief, Lead-Zinc Branch, Defense Minerals Administration, Washington 25, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Docket DMA-577, Sierra Copper Company

Reference is made to your subject letter dated August 24. Your inquiry was directed upon receipt to the U. S. Geological Survey to which agency the request for a field examination of the Sierra Copper Company property was directed.

Mr. Stromquist, Geologist, U. S. Geological Survey, has had his office send me the attached documents which we believe are what you requested. We are sorry that for some reason or other this material was not returned to you at an earlier date.

H. C. Miller
Executive Officer
DMA Field Team, Region III

Attachment

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 17 1951

FILE COPY
SURNAME: 350

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

SEP 7 195

Lyons (ETW)
McKnight
Bishop
Billinger

In reply please refer to:
Docket DMA-577

Mr. Ronnie B. Smith, President
Sierra Copper Company
21st Floor Tower Petroleum Building
Dallas, Texas

Dear Mr. Smith:

Before action on your application for a loan to explore the McCarty property, Calaveras County, California, can be completed, it will be necessary to obtain subordination agreements from the owner and the original lessee of the property. Six copies will be required from each. For your convenience 14 copies of Form MF-202 "Landlord's Subordination Agreement" are enclosed.

Very truly yours,

T. P. Billings, Chief
Lead-Zinc Branch

EJLyons:emp
G 8-30-51
Copies to: H. C. Miller Region III (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

SEP 7 1951

In reply please refer to:
Docket [illegible]-577

Mr. [illegible] G. Smith, President
Sierra Copper Company
21st Floor Lower Petroleum Building
Dallas, Texas

Dear Mr. Smith:

Before action on your application for a lease to explore the Moberly property, Calaveras County, California, can be completed, it will be necessary to obtain subordination agreements from the owner and the original lessee of the property. Six copies will be required from each. For your convenience 4 copies of Form 3-1102 "Sublease Subordination Agreement" are enclosed.

Very truly yours,

[signature]
[illegible] Billings, Chief
Lead-Zinc Branch

AJLyons:emp
d 8-30-51
Copies to: M. C. Miller Region XX (C)
Chief, Lead-Zinc Br.
L. F. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

McKnight

6/5/51

Billings

Bishop

8-31-51

Defense Minerals Administration

Review of Application for Exploration Assistance

To: Production Expansion Division

Docket No. DMA-577

Commodity Copper

Total Amount $12,400

Govt. Participation 50% ($6,200)

1. Name and Address of Applicant Ronnie B. Smith, President, Sierra Copper Company, 21st Floor, Tower Petroleum Building, Dallas, Texas

2. Location of Property McCarty mine (Calaveras Copper mine) Mineral Entry No. 13 Lot 37, Secs. 2 and 3, T. 1. N., R. 12 E., Calaveras County, California

3. Mineral or metal Copper (zinc ?) Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

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

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

a) Good See attached field team report

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? See Exhibit A attached
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

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

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

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202 Has been requested to submit

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

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? Has been checked

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

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

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? Yes modified proposal attached If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

_____

_____

_____

EXHIBIT "A"

Exploration project

The program proposed by the applicant consisted of drilling 42 holes with a total footage of 5750 feet. The drilling was to be divided into three stages. Stage one consisted of drilling 6 holes with a total footage of 950 feet, one hole (DDH No. 2) to explore the downward extension of the Calaveras fault and the remainder, with the exception of one hole southwest of the fault, to explore the gossan area northeast of the fault. Stage 2, which was dependent upon the success of stage 1, consisted of drilling 32 holes having a total footage of 3200 feet to test the gossan area northeast of the fault. Stage 3 consisted of drilling 4 holes having a total footage of 1600 feet to test the downward extension of the Calaveras fault.

The field team recommends that only DDH No. 2 of stage 1 and the four holes of stage 3 be drilled. These holes would be located on a line parallel to and about 50 feet northeast of the Calaveras fault and would be inclined to the southwest at about 80° to the horizontal. The holes would be spaced 200 feet apart. DDH No. 2 of the stage 1 would be 300 feet and the four holes of stage 3, 400 feet each. The total footage would be 1900 feet.

Total estimated cost of project

According to Roy G. Mead, consulting engineer for the applicant, and concurred with by the field team, the drilling can be contracted for $6.00 per foot. In addition there will be an estimated $1000 for engineering, accounting and other overhead costs. The total estimated cost will be:

1900 feet of drilling at $6.00 per foot.....	$ 11,400
Engineering, accounting, and overhead costs....	1,000
Total.....	12,400

Fixtures and improvements - None

Operating equipment - Contract drilling at $6.00 per foot.

Labor and supervision - Supervision is included in the $1000 given above. No separate supervision cost was submitted.

Rehabilitation and repairs - None

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? Yes If so, attach a draft.

e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant? No

g) Is a field examination necessary to complete Exhibit A? Has been examined

11. Exhibit B (question 23-d)*

a) Is it applicable? No

b) If so, are sufficient data furnished?_____ If so, attach a draft.

c) Is a field check needed?_____

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

a) Is it applicable? Yes

b) Sufficient data? Yes If so, attach a draft. See Exhibit A attached

c) Are rents and charges reasonable? Yes

d) Is a field check needed? No

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

a) Are there sufficient data? Yes

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

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Has been checked

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed?

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

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.
Recommended for approval as modified and described in Exhibit A, attached

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by: Erwin J. Lyons GS

Date 8-31-51

INT.-DUP. SEC., WASH., D.C. 99009

6/5/51

8-31-51

Defense Minerals Administration

Review of Application for Exploration Assistance

To: Production Expansion Division

Docket No. DMA-577

Commodity Copper

Total Amount $12,400

Govt. Participation 50% ($6,200)

1. Name and Address of Applicant Ronnie B. Smith, President, Sierra Copper Company, 21st Floor, Tower Petroleum Building, Dallas, Texas

2. Location of Property McCarty mine (Calaveras Copper mine) Mineral Entry No. 13 Lot 37, Secs. 2 and 3, T. 1. N., R. 12 E., Calaveras County, California

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

If not, application will be rejected.

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

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

a) Good See attached field team report

b) Poor

c) None

d) Don't know—needs field examination

e) Is there an alternative and favorable project? See Exhibit A attached
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes
(question 5, 6, 7)*

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

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

*question numbers are those of MF-103

7. Are subordination agreements necessary? Yes

a) MF-201? _____

b) MF-202 Has been requested to submit

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

a) Available manpower Yes

b) Equipment and supplies Yes
(Question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? Has been checked

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

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

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? Yes modified proposal attached If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes

_____

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

_____

_____

_____

EXHIBIT "A"

Exploration project

The program proposed by the applicant consisted of drilling 42 holes with a total footage of 5750 feet. The drilling was to be divided into three stages. Stage one consisted of drilling 6 holes with a total footage of 950 feet, one hole (DDH No. 2) to explore the downward extension of the Calaveras fault and the remainder, with the exception of one hole southwest of the fault, to explore the gossan area northeast of the fault. Stage 2, which was dependent upon the success of stage 1, consisted of drilling 32 holes having a total footage of 3200 feet to test the gossan area northeast of the fault. Stage 3 consisted of drilling 4 holes having a total footage of 1600 feet to test the downward extension of the Calaveras fault.

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Total.....	12,400

Fixtures and improvements - None

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Labor and supervision - Supervision is included in the $1000 given above. No separate supervision cost was submitted.

Rehabilitation and repairs - None

Is this part a worthwhile exploration project?_____

d) Are the cost estimates detailed? Yes

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e) Are the cost estimates reasonable? Yes

f) Should more information be requested from applicant? No

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c) Is a field check needed?_____

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b) Sufficient data? Yes If so, attach a draft. See Exhibit A attached

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d) Is a field check needed? No

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a) Are there sufficient data? Yes

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

c) Is the schedule excessive for the work proposed? No

d) Are the proposed wages and salaries reasonable? Yes

e) Is a field check needed? Has been checked

14. Exhibit E (question 23-c)*

a) Is it applicable? No

b) Sufficient data?

c) Reasonable?

d) Field check needed?

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

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.
Recommended for approval as modified and described in Exhibit A, attached

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question?

Reviewed by: Erwin J. Lyons GS

Date 8-31-51

INT.-DUP. SEC., WASH., D.C. 99009

FILE COPY
SURNAME: 350

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

Lyons (E.T.M.)
McKnight
Bishop

Re: DMA-577

Memorandum

To: Production Expansion Division

From: Chief, Lead-Zinc Branch

Subject: Docket DMA-577, application for exploration loan submitted by the Sierra Copper Company, 21st Floor Tower Petroleum Building, Dallas, Texas

The attached application was originally submitted to apply to two properties, the Donner and the McCarty. It was deemed advisable, however, to consider the two properties separately and the application for a loan on the Donner property was assigned docket No. DMA 1131, docket No. DMA-577 being retained for the McCarty property. The Donner application was transmitted to the Production Expansion Division about May 28, 1951, with the recommendation that the applicant should not be required to submit a new application applying only to the Donner property. A part of the original docket was retained for further action on the McCarty property.

It is now recommended that the attached application applying to the McCarty property be considered without a new application being requested.

not stripped in R. & R.

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Tom Lyon

Director, Supply Division

EJLyons:emp
G 8-30-51

Copies to: David Gallagher Region VI (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

a.e.

Re: DSA-577

Memorandum

To: Production Expansion Division

From: Chief, Lead-Zinc Branch

Subject: Docket DSA-577, application for exploration loan submitted by the Sierra Copper Company, First Floor Tower Petroleum Building, Dallas, Texas

The attached application was originally submitted to apply to two properties, the Conner and the McCarty. It was deemed advisable, however, to consider the two properties separately and the application for a loan on the Conner property was assigned docket No. DSA 1131, docket No. DSA-577 being retained for the McCarty property. The Conner application was transmitted to the Production Expansion Division about May 20, 1951, with the recommendation that the applicant should not be required to submit a new application applying only to the Conner property. A part of the original docket was retained for further action on the McCarty property.

It is now recommended that the attached application applying to the McCarty property be considered without a new application being requested.

R. F. Billings, Chief
Lead-Zinc Branch

Approved:

Director, Supply Division
RJLyons:cmp
G 8-30-51

Copies to: David Gallagher Region VII (2)
Chief, Lead-Zinc Br.
L. T. McKnight 4204 GSA
R. H. Mote
Reports & Records
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

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

Re: DMA-577

Memorandum

To: Production Expansion Division

From: Chief, Lead-Zinc Branch

Subject: Docket DMA-577, application for exploration loan submitted by the Sierra Copper Company, 21st Floor Tower Petroleum Building, Dallas, Texas

The attached application was originally submitted to apply to two properties, the Donner and the McCarty. It was deemed advisable, however, to consider the two properties separately and the application for a loan on the Donner property was assigned docket No. DMA 1131, docket No. DMA-577 being retained for the McCarty property. The Donner application was transmitted to the Production Expansion Division about May 28, 1951, with the recommendation that the applicant should not be required to submit a new application applying only to the Donner property. A part of the original docket was retained for further action on the McCarty property.

It is now recommended that the attached application applying to the McCarty property be considered without a new application being requested.

T. P. Billings, Chief
Lead-Zinc Branch

Approved:

Director, Supply Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
REGION III

OFFICE OF
REGIONAL DIRECTOR

1415 APPRAISERS BLDG.,
630 SANSOME STREET,
SAN FRANCISCO 11, CALIF.

June 8, 1951

Memorandum

To: Otto Herres, Chief, Lead-Zinc Branch, Supply Division, Defense Minerals Administration, Washington, D. C.

From: Executive Officer, DMA Field Team, Region III

Subject: Docket DMA-577, McCarthy Property, Sierra Copper Company, Copperopolis, Calif.

Attached is a copy of a letter, dated June 6, from Arvid A. Stromquist, Geologist, U. S. Geological Survey, concerning subject property.

This letter gives information that may be of value to you in your consideration of the subject application.

H. C. Miller
Executive Officer, DMA Field Team,
Region III

Attachment

Copy to: Ward Smith, Geological Survey

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 1 3 1951
LANDON F. STROBEL
Executive Secretary

JUN 13 1951

U. S. Geological Survey
RECEIVED
JUN 11 1951
Geologic Branch
San Francisco, Calif.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 122,
Altaville, Calif.,
June 6, 1951.

Mr. H. C. Miller
U. S. Bureau of Mines,
Appraisers Building,
San Francisco, Calif.

Dear Mr. Miller:

This is a sequel to DMA 577 regarding the proposal for exploration of the McCarty property near Copperopolis, California.

Mr. Mead, consulting engineer for the enterprise (Sierra Copper Co.) visited me yesterday here in Altaville, California. I don't have a copy of the correspondence with me in the field but some time ago Mr. Mead submitted a proposal for exploring the McCarty property by diamond drilling. The program was set up in 3 stages. Stages 1 and 2 were to explore by drilling the possibilities of recovering copper by power shovel methods, and stage 3 was to explore the so-called Calaveras fault in depth by drilling.

At that time, as now, I could go along with him only on stage 3 as I feel that is the best bet for exploration. However, DDH No. 2 of stage 1 in Mr. Mead's proposal might also be included with stage 3 as this hole also explores the Calaveras fault in depth. To test the feasibility of power shoveling methods hole No. 3 of stage 1 could be included in the program. Possibly by inclining this hole toward the Calaveras fault it would not only test the thickness of the gossan at that point but would also explore the Calaveras fault.

In short, I still think that Government participation should be limited to exploring the Calaveras fault, and in that respect, in addition to stage 3 holes nos. 2 and 3 of stage 1 might be included. By so doing Mr. Mead would get two holes for his stage No. 1 exploration.

Sincerely yours,

Arvid A. Stromquist

cc. Mr. Ward Smith

U.S.
JUN 11 1951
Geologic Branch
San Francisco, Calif.

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III - CALIFORNIA-NEVADA

DMA-577, Sierra Copper Company, McCarty and Donner Properties

Calaveras County, California

Arvid A. Stromquist, Geologist
U. S. Geological Survey

Introduction

The Defense Minerals Administration has requested a field examination of the Sierra Copper Company properties near Copperopolis "to determine if an exploration program for the tentative amount stated above ($50,000) is advisable." The docket (DMA-577 and TA-1953) includes both an original and a supplemental report prepared by Roy O. Mead, consulting engineer. These reports contain specific proposals, including requests for funds for equipment to be used in mining rather than for exploration.

The field conference with the applicant indicates that he does not consider his proposals on record as being specific. He appeared to be willing to present a modified specific proposal at a later date. I feel that the property has merit, but that the present proposal is not suitable. Therefore, a new proposal for exploration is required before the application is approved.

On April 13, 1951 I visited the McCarty and Donner properties under lease by the Sierra Copper Company, in company with R. Smith, R. O. Mead, consulting engineer for the enterprise, and C. B. Hood who is in charge of the operation. The following day I made a half-day reconnaissance of the area using Heyl's / excellent geologic map as a guide.

/ Heyl, G. R., et al, Copper in California: California Div. of Mines, Bull. 144, pl. 35 in folder, 1948.

This map, modified slightly, is reproduced to show the geology of the McCarty property area.

Locations of areas proposed for exploration

The two areas proposed for exploration, (1) the McCarty property and (2) the Donner property, are 7 miles apart. The index map, fig. 1, shows the approximate locations of these properties with respect to each other, the town of Copperopolis, the chief mines of the area, and the Mountain King mill where the rock mined will be milled.

The McCarty property is in the NE¼ sec. 3 and the W½ sec. 2, T. 1 N., R. 12 E., but the precise outline of the property is not clear. According to Mead/ the McCarty property consists of 41.31 acres contained

/ Mead, R. G., Report on "Calaveras Copper Mine" or so-called McCarty property: submitted with an application for Government aid, DMA-577, p. 1.

in two patented mining claims designated as Mineral Entry No. 13, Lot 37. The property is at the southeast end of an aligned group of mines which include the North Keystone, Keystone-Union, and Empire mines. (See pl. 35.) North Keystone and Keystone-Union mines have been the major producers of the district.

The Donner property is in the SE¼ sec. 33, T. 2 N., R. 11 E., Mount Diablo base and meridian, about 7 miles west of Copperopolis and is close to the western edge of the Sierra Nevada foothills. The prospect is in line with the northwest extension of the Quail Hill-Collier group of mines. Quail Hill and Napoleon have been the major producers, each having a production of more than 1,000,000 pounds of copper, according to Bulletin 144/.

/ Heyl, G. R., et al, op. cit., pp. 221, 222.

General geology

McCarty property

Heyl's map shows that the McCarty area is underlain by volcanic and argillaceous rocks that have been metamorphosed into green schists, greenstone, and slates (sgn and sl). Lithologically, these rock units resemble those of the Amador group of Jurassic age. Folding of the metamorphic rocks is suggested by the sinuous lenticular shapes made by the outcrop patterns of the formations. Schistosity dips steeply east and strikes N. 40° to 50° W.

Mineralization is localized along the Calaveras and McCarty faults which extend through the area approximately parallel to the regional structural trend. The Calaveras fault dips steeply to the east; locally, it may dip westward. The McCarty fault dips east at the surface but underground dips to the west./ Brown to red brown gossan crops out

/ Heyl, G. R., op. cit., p. 109

north of the Calaveras fault. As a general rule/ gossans developed

/ Heyl, G. R., op. cit., p. 24.

from copper-rich ores are brown whereas those derived from pyritic material are red brown, but the known ore bodies are generally surrounded by an envelope of disseminated pyrite so that a red brown color is not necessarily unfavorable for the presence of copper. The Calaveras fault zone is chloritized and it is within this belt of altered rock that the mineralization occurs as lenticular bodies of sulfides.

The Sierra Copper Co. began exploration of the McCarty property by attempting to rehabilitate the old Calaveras shaft. Little information on the history of this shaft is available. Below a depth of 100 feet the Calaveras shaft was found to be stoped out, consequently, it became too dangerous and expensive to continue with the rehabilitation work; the Calaveras shaft was abandoned.

According to Mead a 250-foot span along the Calaveras fault, starting about 200 feet east from the Calaveras shaft, was then explored by drilling nine 15-foot holes. Mead / states that all drill holes

/ Mead, R. G., Supplemental report on the McCarty property and report on Donner property: submitted with application for Government aid, DMA-577, p. 2.

encountered copper sulfides. Four shallow openings were made along this span and these are described in Mead's supplemental report.

A 45-foot deep prospect shaft (No. 3 prospect) inclined 81° northwestward has been sunk on one of these openings (see pl. 35). About 40 feet beneath the collar a 14-inch silicified shear zone mineralized with irregular veinlets, streaks and masses of chalcopyrite and pyrite was encountered. Bornite is also present in small amounts; no zinc minerals were recognized. Probably, this is not the main Calaveras fault as the prospect shaft is inclined 81° northeastward whereas the Calaveras fault which crops out south of the shaft probably dips more steeply northeastward, or even vertically or steeply westward at this point. A vertical or reversal in dip of the fault in depth is suggested by analogy with the nearby McCarty fault which dips eastward at the surface, but underground reverses its dip.

Donner property

In the vicinity of the Donner prospect the rocks consist of greenstone or metavolcanics that probably belong to the Logtown Ridge formation of Jurassic age. The schistosity strikes N. 45° W. and dips steeply northeast concordant with the common Sierra Nevada structural trend. Intruded into the Logtown Ridge formation is a felsite or quartz porphyry which has an irregular contact with the greenstone and locally cuts across the schistosity of the latter.

A prospect shaft about 50 feet deep dug in a 4- to 5-foot shear zone along or adjacent to the contact between greenstone and felsite represents the only exploration to date on the Donner property. Most of this work was done by the owner before leasing the property to R. Smith. The prospect shaft is inclined 65° in a N. 35° W. direction.

At the surface the shear zone is marked by brown gossan but a few feet beneath the surface it contains chalcopyrite, pyrite, and some bornite probably with covellite. No zinc minerals were recognized. Rock specimens on the dump from the oxidized zone contain malachite, azurite, and possibly cuprite.

Most of the mineralization is in the hanging wall part of the shear zone. Assays of samples taken by Mead/ all show favorable results.

/ Mead, R. G., op. cit., p. 4.

Assays of samples taken by him from the bottom of the prospect shaft showed a copper content of 17.0 percent for two feet of the hanging wall part and 2.5 percent for three feet of the footwall part of the shear zone. My impressions of samples from the bottom of the shaft is that they have more pyrite and less copper sulfides than the above assays indicate.

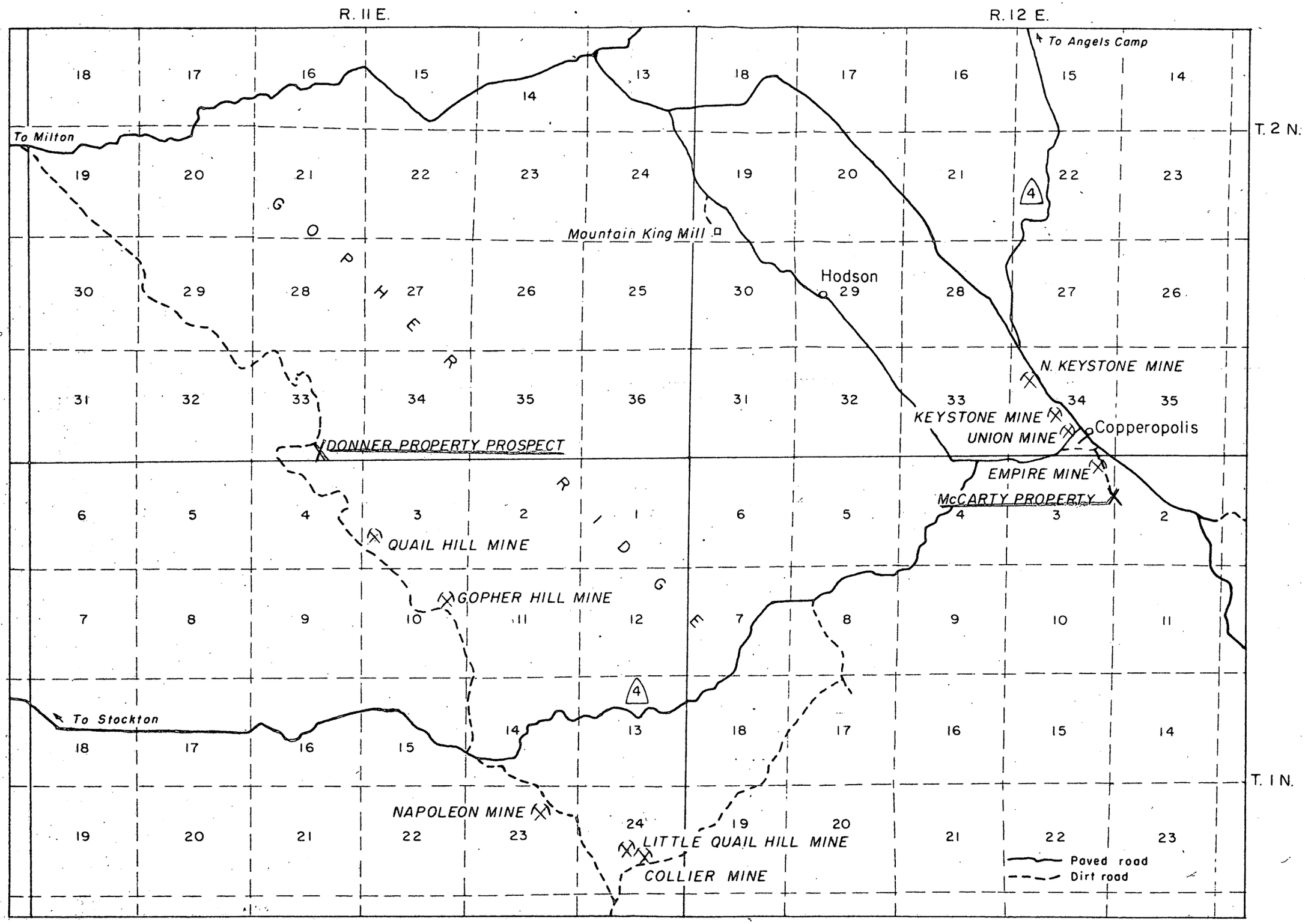
The extent and direction of the ore shoot has not been determined; further exploration should develop its habit. It is likely that the prospect is on a salient of the contact between felsite and greenstone and that this structure controls the ore shoot.

Recommendations

The properties proposed for exploration have not been developed sufficiently to indicate the existence of any important block of ore; nevertheless, they are in areas favorable for exploration. Past experience in this general area has shown that all ore bodies do not crop out at the surface, and that chloritized areas, particularly those adjacent to faults, are favorable locales for ore shoots. Heyl's map shows that not only is the McCarty property at the south end of the productive North Keystone and Keystone-Union mines but it also contains a chloritized area adjacent to a fault. Similarly, the Donner property is northeast of the Quail Hill-Collier deposits which, according to Heyl, were formed in greenstone at or adjacent to the contact of felsite or quartz porphyry intrusions into volcanics. The Donner prospect shaft is also at or close to the contact of a quartz porphyry and greenstone.

The lessee should draw up a specific exploration program stating objectives, procedures to be used, and estimated costs. The McCarty property can best be explored by diamond drilling. Diamond drill holes, inclined toward the Calaveras fault from the northeast side of it should give more geologic information than would be obtained from further exploration through No. 3 prospect shaft, especially as the chloritized rock (ore host) fingers out just southeast of this prospect (see pl. 35).

The Denner property has merit for exploration. The mineralization is presumably localized in a salient in the contact between felsite and greenstone and the trend of this contact should be ascertained before approval of any exploration request. In the absence of a specific proposal for exploration, this property has not been mapped.



INDEX MAP SHOWING LOCATIONS OF THE DONNER AND McCARTY PROSPECTS WITH RESPECT TO THE CHIEF ROADS, TOWNS, AND MINES OF THE AREA

0 1 2 3 MILES

Fig. 1

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

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III - CALIFORNIA-NEVADA

DMA-577, Sierra Copper Company, McCarty and Donner Properties

Calaveras County, California

Arvid A. Stromquist, Geologist
U. S. Geological Survey

Introduction

The Defense Minerals Administration has requested a field examination of the Sierra Copper Company properties near Copperopolis "to determine if an exploration program for the tentative amount stated above ($50,000) is advisable." The docket (DMA-577 and TA-1953) includes both an original and a supplemental report prepared by Roy G. Mead, consulting engineer. These reports contain specific proposals, including requests for funds for equipment to be used in mining rather than for exploration.

The field conference with the applicant indicates that he does not consider his proposals on record as being specific. He appeared to be willing to present a modified specific proposal at a later date. I feel that the property has merit, but that the present proposal is not suitable. Therefore, a new proposal for exploration is required before the application is approved.

On April 13, 1951 I visited the McCarty and Donner properties under lease by the Sierra Copper Company, in company with R. Smith, R. G. Mead, consulting engineer for the enterprise, and C. B. Wood who is in charge of the operation. The following day I made a half-day reconnaissance of the area using Heyl's _/ excellent geologic map as a guide.

_/ Heyl, G. R., et al, Copper in California: California Div. of Mines, Bull. 144, pl. 35 in folder, 1948.

This map, modified slightly, is reproduced to show the geology of the McCarty property area.

Locations of areas proposed for exploration

The two areas proposed for exploration, (1) the McCarty property and (2) the Donner property, are 7 miles apart. The index map, fig. 1, shows the approximate locations of these properties with respect to each other, the town of Copperopolis, the chief mines of the area, and the Mountain King mill where the rock mined will be milled.

The McCarty property is in the NE$\frac{1}{4}$ sec. 3 and the W$\frac{1}{2}$ sec. 2, T. 1 N., R. 12 E., but the precise outline of the property is not clear. According to Mead_/ the McCarty property consists of 41.31 acres contained

_/ Mead, R. G., Report on "Calaveras Copper Mine" or so-called McCarty property: submitted with an application for Government aid, DMA-577, p. 1.

in two patented mining claims designated as Mineral Entry No. 13, Lot 37. The property is at the southeast end of an aligned group of mines which include the North Keystone, Keystone-Union, and Empire mines. (See pl. 35.) North Keystone and Keystone-Union mines have been the major producers of the district.

The Donner property is in the SE$\frac{1}{4}$ sec. 33, T. 2 N., R. 11 E., Mount Diablo base and meridian, about 7 miles west of Copperopolis and is close to the western edge of the Sierra Nevada foothills. The prospect is in line with the northwest extension of the Quail Hill-Collier group of mines. Quail Hill and Napoleon have been the major producers, each having a production of more than 1,000,000 pounds of copper, according to Bulletin 144_/.

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A prospect shaft about 50 feet deep dug in a 4- to 5-foot shear zone along or adjacent to the contact between greenstone and felsite represents the only exploration to date on the Donner property. Most of this work was done by the owner before leasing the property to R. Smith. The prospect shaft is inclined 65° in a N. 35° W. direction.

At the surface the shear zone is marked by brown gossan but a few feet beneath the surface it contains chalcopyrite, pyrite, and some bornite probably with covellite. No zinc minerals were recognized. Rock specimens on the dump from the oxidized zone contain malachite, azurite, and possibly cuprite.

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The extent and direction of the ore shoot has not been determined; further exploration should develop its habit. It is likely that the prospect is on a salient of the contact between felsite and greenstone and that this structure controls the ore shoot.

Recommendations

The properties proposed for exploration have not been developed sufficiently to indicate the existence of any important block of ore;nevertheless, they are in areas favorable for exploration. Past experience in this general area has shown that all ore bodies do not crop out at the surface, and that chloritized areas, particularly those adjacent to faults, are favorable locales for ore shoots. Heyl's map shows that not only is the McCarty property at the south end of the productive North Keystone and Keystone-Union mines but it also contains a chloritized area adjacent to a fault. Similarly, the Donner property is northeast of the Quail Hill-Collier deposits which, according to Heyl, were formed in greenstone at or adjacent to the contact of felsite or quartz porphyry intrusions into volcanics. The Donner prospect shaft is also at or close to the contact of a quartz porphyry and greenstone.

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The Donner property has merit for exploration. The mineralization is presumably localized in a salient in the contact between felsite and greenstone and the trend of this contact should be ascertained before approval of any exploration request. In the absence of a specific proposal for exploration, this property has not been mapped.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

May 17, 1951

Air Mail

Subject: DMA - 577 - McCarty property
Calaveras County, California

Mr. E. T. McKnight
Mineral Deposits Branch
U. S. Geological Survey
Washington 25, D. C.

Dear Mac:

This is in regard to costs of the revised exploration program for copper of the McCarty property (DMA - 577). The revised proposal was transmitted to you yesterday together with my comments.

I have conferred with Mr. Miller in regard to the costs and he states that the specified costs are reasonable particulary that $6.00 per foot of diamond drilling is a reasonable estimate.

Sincerely yours,

Arvid

Arvid A. Stromquist

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

May 16, 1951

Air Mail

Subject: DMA - 577 (?). McCarty Property, Calaveras County, California

Mr. Roy G. Mead, Consulting Engineer
920 Burchett Street
Glendale, California

Dear Mr. Mead:

I have looked over the proposed diamond drilling program for the McCarty property and under instructions from Washington I am writing this letter direct to you.

Apparently you and I are shooting at different targets for exploration, as I am still dubious whether the property is favorable to open pit shovel mining methods. It was for these reasons that we agreed to set up the exploration program in stages.

I agree with you that stage 3 is a reasonable way to explore because, the way I interpret the Foothill copper belt, the deposits are lenticular sulfide bodies developed by replacement along zones of faulting. According to California State Division of Mines Bulletin Number 144, "Copper in California", page 104, by George R. Heyl concerning the North Keystone mine, "The ore bodies are sulfide replacement deposits of elongate lenticular form with no sharply defined walls. These lenses lie parallel to the foliation of the enclosing rocks with their major axis or greatest dimension parallel to the dip." On page 110 Heyl states, "Exploration for these should be restricted to the belts of strong chloritization and particularly to the ground adjacent to faults or intersection of faults."

According to this interpretation the most likely area for exploration would be the Calaveras fault and the adjacent chloritized areas. Heyl's map shows that in the area of your holdings a continuous altered zone 40 to 100 feet thick lies along the north side of the fault. Stage 3 of your proposal seems to me a reasonable way to explore the altered zone. On the other hand, I cannot go along with you on stages 1 and 2 except at company expense only, for Heyl's map and my own observation of the area do not indicate to me a wide mineralized area suitable for shovel operations. However, should subsequent

company work (e.g. stages 1 and 2) indicate an area suitable for open pit shovel mining methods the request for Government aid could be modified accordingly.

My opinion is that Government participation should be restricted to stage 3 or to a reasonable exploration program exploring the Calaveras fault and the adjacent chloritized zone.

Sincerely yours,

Arvid A. Stromquist

CC: H. C. Miller
E.K. McKnight

JOHNSON, BOHANNON, PRESCOTT & ABNEY
ATTORNEYS AND COUNSELORS AT LAW
M & W TOWER BUILDING
DALLAS, TEXAS

J. EDWARD JOHNSON
ROSS BOHANNON
ROSS K. PRESCOTT
FRED S. ABNEY

May 14, 1951

Mr. Edwin T. McKnight,
U. S. Geological Survey,
Department of the Interior,
General Services Building,
Washington, D. C.

Re: Sierra Copper Company Application for Exploration Project - McCarty Property

Dear Mr. McKnight:

Mr. Ronnie B. Smith has requested that I forward to you the enclosed copy of an amendment to the application of Sierra Copper Company, filed May 1, 1951, in regard to the above captioned matter. It is Mr. Smith's understanding that Mr. H. C. Miller of San Francisco is to forward you the original copies of this amendment.

Yours very truly,

Fred S. Abney

Fred S. Abney

FSA:ml

Enc.

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

May 13, 1951

Mr. H. C. Miller, Regional Director
Region III
U. S. Bureau of Mines
San Francisco, California

Dear Mr. Miller:

At the request of Mr. Ronnie B. Smith, President of the Sierra Copper Company, who on May 1, 1951 filed an application for aid for an exploration project, pursuant to Mineral Order No. 5 under the Defense Production Act of 1950, I am transmitting herewith a revised development program applicable to a portion of the original application.

The revised development program applies only to the McCarty property referred to in the aforesaid application and is an amendment to Items 21 and 23, Form MF 103, Page 11 of the aforesaid application.

I understand that after the aforesaid data has been examined by Mr. Arvid A. Stromquist, Geologist U.S.G.S., it will be handed to you for transmittal to the Defense Minerals Administration in Washington, D. C., there to be made a part of the original application made May 1, 1951 by the Sierra Copper Company.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm
Encl.

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

May 13, 1951

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Region III
U. S. Bureau of Mines
San Francisco, California

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Very truly yours,

Roy G. Mead

ROY G. MEAD

RGMmm
Encl.

May 13, 1951

COPY

Mr. Arvid A. Stromquist, Geologist
U. S. Geological Survey
102 Old Mint Bldg.
San Francisco 3, Calif.

Dear Mr. Stromquist:

I am enclosing herewith a proposed plan of diamond drilling operations for the McCarty property in accordance with our understanding in San Francisco Monday, May 7, 1951.

If you agree with the proposed drilling program, kindly deliver both copies of the enclosed data to Mr. H. C. Miller, Regional Director, Region III, U. S. Bureau of Mines.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm
Encls.

FILE COPY
SURNAME:

McKnight
Mots
Andres

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

May 10, 1951

Airmail

Mr. Arvid A. Stromquist
102 Old Mint Building
5th and Mission Streets
San Francisco 3, California

Dear Arvid:

The Sierra Copper Company has amended the recently prepared document on its application for a loan to explore the McCarty and Donner mines in Calaveras County, California, to include only the Donner property. The company is planning to revise that part of the document concerning the McCarty property in line with what you work out with their geologist (or engineer) Mead, but they are trying to get the Donner part of the application approved immediately because this work is already in progress.

The project proposed for the Donner property is to deepen the shaft to 100 feet and then drift south on the vein 100 feet. No core drilling is proposed.

In your report on the Donner property you stated that the trend of the contact between the felsite and greenstone should be determined before any exploration request was approved. Mr. Ronnie B. Smith, President of the company, who is at present in Washington, did not know whether this mapping had been done or not, but said that Mead had informed him in a telephone conversation that you had approved the project.

We have, therefore, recommended approval of the loan to explore the Donner property. If you do not agree with this action please let us know immediately and we will stop the processing of the recommendation.

Very truly yours,

Edwin T. McKnight

Edwin T. McKnight
Geologist

EJLyons:emp
G 5/10/51
Copies to: H. C. Miller, Region III (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
Directors reading file 4214 GSA
Br. reading file 4214 GSA
Files

Dma 577

BUREAU OF MINES
WASHINGTON, D. C.

MAY 11 3 08 PM '51

FILE COPY
SURNAME:

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

McKnight
Herres

May 1, 1951

Airmail

Mr. Ronnie B. Smith
Sierra Copper Company
21st Floor, Tower Petroleum Building
Dallas, Texas

Re: Docket DMA-577

Dear Mr. Smith:

We have today received the field report on your application for exploration aid at the McCarty and Donner properties. This report indicates that although the areas proposed for exploration have merit, the proposal submitted by Mr. Mead needs to be modified to point it specifically toward the exploration. The original application includes, among other things, requests for funds for equipment to be used in mining rather than for exploration. The modified exploration proposal should state specific objectives, procedures to be used, and estimated costs. If the application could be made on the regular exploration Form MF-103, processing the application would probably be expedited.

The suggestion is made in the field report that the McCarty property can best be explored by diamond drilling from the northeast. In a transmittal letter from Mr. Arvid Stromquist, our examining geologist he states that he would talk with you (or Mr. Mead?) by phone, giving the essence of his conclusions and that he would be glad to go over the modified application with you or your geologist. I presume that you will have heard from him by now.

Very truly yours,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

ETMcKnight:emp
G 4/30/51
Copies to: H. C. Miller, Region III (2)
Chief, Lead-Zinc Br.
E. T. McKnight
L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

Dma 577

856

a.g.c.

May 1, 1951

Airmail

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Sierra Copper Company
21st Floor, Tower Petroleum Building
Dallas, Texas

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Very truly yours,

Otto Herres

T. McKnight, Chief
Lead-Zinc Branch

T McKnight:emp
G 4/30/51
Copies to: H. C. Miller, Region III (2)
Chief, Lead-Zinc Br.
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L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
102 Old Mint Building
San Francisco 3, California

April 27, 1951

Subject: DMA-577 Sierra Copper Co.
McCarty mine & Donner
Property, Copperopolis,
Calif.

Mr. H. C. Miller
U. S. Bureau of Mines
Room 1415 Appraisers Building
630 Sansome Street
San Francisco, California

Dear Mr. Miller:

Enclosed is my report on the McCarty and Donner properties of the Sierra Copper Company, DMA-577, together with 1 plate and 1 figure.

As pointed out in the report, although the areas proposed for exploration have merit, the proposal submitted should be modified before approval. The applicant should submit a new proposal stating specific objectives, procedures, and estimated costs.

To expedite action, I shall phone the applicant giving him the essence of my conclusions and inform him that should he wish to modify his request, I shall be glad to go over it with him or his geologist.

Sincerely yours,

Arvid A. Stromquist

Enclosure

E. T. McKnight Ext. 3268

FILE COPY
SURNAME:

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

Defense Minerals Administration
14-1110037 Expenses of Defense Production, Executive Office of the President, (Allot. to Int.) 1951 10.1

Apr 26-1951 McKnight Herres

Mr. Harold C. Miller
Bureau of Mines
1415 U. S. Appraiser's Building
San Francisco 11, California

When may we expect field report on DMA-577 Sierra Copper Company - Ronnie B. Smith, applicant.

OTTO HERRES, Chief
Lead-Zinc Branch

ETMcKnight:emp
G 4/26/51

Copies to: Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

C

856

April 6, 1951

Mr. Ray G. Mead
Consulting Engineer
920 Burchett Street
Glendale, California

Dear Mr. Mead:

With thanks I acknowledge your letter of March 30 transmitting a supplemental report on the McCarthy property located at Copperopolis and also a brief report on the Donner property, both of which are held under lease by Mr. Ronnie Smith.

We have not yet heard from Washington regarding the McCarthy property, so that I have not been able to advise you when we are to make an examination of the mine. As soon as we get a directive from the Defense Minerals Administration, we will get in touch with you.

With best regards, I am

Sincerely yours,

H. O. Miller

H. O. Miller
Regional Director, Region III

HOMiller:am

Files
Chrono

FILE COPY
SURNAME:

McKnight
Berry
Merrill
Moon
Ron

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

April 2, 1951

Mr. Ronnie B. Smith
Sierra Copper Company
21st Floor, Tower Petroleum Bldg.
Dallas, Texas

Dear Mr. Smith:

In accordance with your conversation with members of our staff, we are calling the attention of Mr. Miller, Executive Officer of our San Francisco field team, 1415 U.S. Appraiser's Building, to the report prepared by your engineer, Mr. Mead, on your copper-zinc property near Copperopolis, California. We have pointed out to Mr. Miller that you will make application for Federal aid in exploring this property as soon as the details of the exploration program are available. In the meantime we are asking our field team to make the necessary investigations to decide whether your proposed project is a suitable one for Government participation.

We will forward the forms and exploratory literature on the exploration program to you for your consideration as soon as they become available.

Very truly yours,

Tom Lyon

Tom Lyon, Director
Supply Director

ETMcKnight:emp
G 4-2-51

Copies to: 2 copies H. C. Miller
Region III
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

April 2, 1951

Mr. Monnie R. Smith
Sierra Copper Company
First Floor, Lower Petroleum Bldg.
Dallas, Texas

Dear Mr. Smith:

In accordance with your conversation with members of our staff, we are calling the attention of Mr. Miller, executive officer of our San Francisco field team, 1415 U.S. Appraiser's Building, to the report prepared by your engineer, Mr. Wood, on your copper-zinc property near Copperopolis, California. We have pointed out to Mr. Miller that you will make application for Federal aid in exploring this property as soon as the details of the exploration program are available. In the meantime we are asking our field team to make the necessary investigations to determine whether your property project is a suitable one for government participation.

We will forward the forms and explorat[illegible] literature on the exploration program to you for your consideration as soon as they become available.

Very truly yours,

Tom Lyon

Tom Lyon, Director
Supply Director

[illegible]knight:wsp
4-2-51

Copies to: 2 copies R. L. Miller
Region III
Chief, Lead-Zinc Br.
[illegible] F. McKnight 4204 GSB
[illegible] S. Moon
R. H. Mote
[illegible] P. Strobel
[illegible] O. Mittenderf
Files

E. T. McKnight Ext. 3268

Defense Minerals Administration

14-1110037 Expenses of Defense Production, Executive Office of the President, (Allot. to Int.) 1951 10.1

Mr. Harold C. Miller
Bureau of Mines
1415 U. S. Appraiser's Building
San Francisco 11, California

When may we expect field report on DMA-577 Sierra Copper Company - Otto Herres

Ronnie B. Smith, applicant.

OTTO HERRES, Chief
Lead-Zinc Branch

ETMcKnight:emp
0 4/26/51

Copies to: Chief, Lead-Zinc Br.
E. T. McKnight 4301, GSA
J. E. Moon
R. H. Mote
L. F. Strobel
C. D. Mittendorf
Files

Sierra Copper
DMA 577

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

March 30, 1951

Mr. H. C. Miller,
Regional Director U.S. Bureau of Mines,
620 Sansome St.
San Francisco, California

Dear Mr. Miller:

At the request of Mr. Ronnie Smith, I am transmitting herewith a supplemental report on the McCarty property located at Copperopolis, also a brief report on the Donner property, both of which are held under lease by Mr. Ronnie Smith.

The aforesaid report on the McCarty property is a supplement to the report I left with you on January 25, 1951, and covers the operations on the property for the period December 3, 1950 and February 25, 1951.

Since February 25, 1951, a prospect shaft located at opening No. 3 (described in paragraph 4, page 2 of the supplemental report) has been sunk to a depth of forty feet. The shaft was sunk on an angle of 81 degrees from the horizontal, in the hanging wall, approximately 10 feet northeast of the surface outcrop of the Calaveras fault which, at that location, dips to the northwest at an angle of 69 degrees from the horizontal, therefore, the fault and the mineralized zone would not be encountered in the shaft until it had reached a depth of approximately 45 feet.

On March 28, 1951, the shaft had reached a depth of 38 feet, at which point black slate was encountered with Pyrite in the fractures. At a depth of 42 feet Chalcopyrite and Pyrite was found impregnated in the black slate and at which depth the formation had the appearance of overlying a mineralized body of copper and iron sulphides.

The surface formation in the vicinity of the prospect shaft is shown on the map attached to the supplemental report. Since that map was prepared, a contour map has been prepared upon which is shown the location of the prospect shaft. A copy of the contour map is enclosed herewith.

The shaft is equipped with head frame and a small air driven hoist. Drilling is being done with air drills; air is furnished from a portable air compressor.

Very truly yours,

Roy G. Mead

Roy G. Mead

RGM:DM
CC: Edwin T. McKnight
U.S.G.S. Washington, D.C.

FILE COPY
SURNAME:

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

H. C. Miller

March 29, 1951

Lyons
McKnight
Mote

Memorandum

To: Executive Officer of Field Team, Region III
Through: Coordinating Committee and
Director, Supply Division

From: Lead-Zinc Branch, D.M.A.

Re: Docket DMA-577
and TA-1953

Subject: Application of the
Sierra Copper Company
21st Floor, Tower Petroleum Bldg.
Dallas, Texas

Commodity: Copper, zinc

The Sierra Copper Company has filed application for tax amortization on facilities amounting to $52,000.00, to be used at the McCarty mine, Calaveras County, Copperopolis, California. One copy of the application is attached.

Mr. Ronnie B. Smith, President, in a personal visit, has signified that the company is prepared to undertake immediately, with Government participation on an equal basis, an exploration program at the McCarty mine and on the Donner property in the same area. The tentative total cost of the program is $50,000.00.

According to Mr. Smith, about $18,000.00 has been spent to date by the company on exploration work on the two properties. A report by Roy G. Mead, company engineer, has been written and a copy of this is believed by Mr. Smith to be in the hands of Mr. Miller.

The Lead-Zinc Branch recommends that an examination be made of the property to determine if an exploration program for the tentative amount stated above, is advisable.

Mr. Smith agrees that the tax amortization request need not be considered until the exploration program has been carried out, but the form is forwarded for any information it may contain. Mr. Roy G. Mead can be reached for any necessary information at 920 Burchette Street, Glendale, California, telephone Chapman 52290.

Approved:
DMA Coordinating Committee
Tom Lyons

Lowell B. Moon Chairman

L. B. Moon
Olaf N. Rove
Olaf N. Rove

OTTO HERRES, Chief
Lead-Zinc Branch

EJLyons:emp G-3/29/51
Copies to: 2 copies to
H. C. Miller, Region III
Chief, Lead-Zinc Br.
E.T. McKnight 4204 GSA
L. B. Moon
R. H. Mote
L. F. Strobel
C. O. Mittendorf
Files

AMENDMENT TO APPLICATION FILED MAY 1, 1950

ITEM NO. 21 AND 23, PAGE 11, RE MCCARTY PROPERTY

Re: Application for aid for an exploration project
by Sierra Copper Company
Pursuant to Mineral Order 5
Under Defense Production Act of 1950

As a result of the exploration work completed to date on the McCarty property the following development plan is proposed with a view of disclosing low grade copper sulfides ore bodies which could be mined by open pit methods using power shovels or drag line equipment.

It is proposed to explore portions of the probable ore bodies by diamond drilling a series of holes on the area embraced in the McCarty property, as shown on the accompanying map marked Exhibit A.

The proposed exploration program is to be divided into three stages of diamond drilling, the extent of the diamond drilling for each stage being dependent upon the information obtained from diamond drilling under the preceding stage.

FIRST STAGE

This stage of operation assumes the drilling of one row of diamond drill holes to be located at right angles to the Calaveras fault, fifteen feet west of prospect shaft No. 3 which has been sunk to a depth of 50 feet.

The No. 1 diamond drill hole is to be located 40 feet south of the surface trace of the Calaveras fault and will be drilled vertically to a depth of approximately 150 feet.

The No. 2 diamond drill hole is to be located 50 feet north of the Calaveras fault and will be drilled to the southwest toward the fault at an angle of 80° from the horizontal. This hole will probably intercept the fault at an approximate depth of 300 feet provided the fault is vertical.

Holes No. 3, 4, 5 and 6 are to be spaced 50 feet apart commencing with Hole No. 2. Each hole is to be drilled vertically to an approximate depth of 150 feet which depth should penetrate the gossan outcrop and extend into the underlying sulfide zone to a depth of approximately 100 feet. The aforesaid holes should determine the thickness and extent of the gossan. Proposed diamond drill holes under Stage No. 1 are shown in red on the accompanying map marked Exhibit A.

The combined footage of the six holes would amount to approximately 950 feet of hole which at a cost of $6.00 per foot would amount to $5,700.00.

If the aforesaid drilling program under Stage No. 1 is successful and copper values showing commercial ore are disclosed, then the drilling of Stage No. 2 should be undertaken.

SECOND STAGE

This stage of operation assumes the drilling of four rows of diamond drill holes of eight holes to the row spaced 25 feet apart and drilled to an approximate depth of 100 feet. The location of the holes is shown in blue on the accompanying map. These holes should determine the thickness of the gossan outcrop or overburden and the copper content of the ore body below the oxidized zone. By the drilling of these holes an area for power shovel operations could then be determined.

Under this operation 3200 feet of hole would be drilled, the cost of which at $6.00 per foot would amount to $19,200.00.

THIRD STAGE

This stage of operation assumes the drilling of a row of four diamond drill holes located 50 feet northeast of the Calaveras fault spaced 200 feet apart commencing with Hole No. 2 (Stage No. 1 shown in red on Exhibit A). Each hole in this operation is to be inclined 80° to the southwest from the horizontal and drilled to an approximate depth of 400 feet. These holes should penetrate the Calaveras fault and determine the extent of the ore bodies near the Calaveras fault at a vertical depth of approximately 300 feet below the surface. These ore bodies could only be worked by selective mining operations.

Under this operation 1600 feet of hole would be drilled, which at $6.00 per foot would amount to $9,600.00. The proposed location of the diamond drill holes under this stage of operation is shown in green on Exhibit A.

This stage of development should be pursued whether or not the operations under Stages No. 1 and 2 should prove that shovel mining operations would not be profitable.

The cost of the development operations under the aforesaid stages is summarized as follows:

First stage of drilling	$ 5,700	
Engineering, overhead and accounting	1,000	$ 6,700
Second stage of drilling	$19,200	
Engineering, overhead and accounting	2,000	21,200
Third stage of drilling	$ 9,600	
Engineering, overhead and accounting	1,000	10,600
		$38,500

AMENDMENT TO APPLICATION FILED MAY 1, 1950

ITEM NO. 21 AND 23, PAGE 11, RE MCCARTY PROPERTY

Re: Application for aid for an exploration project
by Sierra Copper Company
Pursuant to Mineral Order 5
Under Defense Production Act of 1950

As a result of the exploration work completed to date on the McCarty property the following development plan is proposed with a view of disclosing low grade copper sulfides ore bodies which could be mined by open pit methods using power shovels or drag line equipment.

It is proposed to explore portions of the probable ore bodies by diamond drilling a series of holes on the area embraced in the McCarty property, as shown on the accompanying map marked Exhibit A.

The proposed exploration program is to be divided into three stages of diamond drilling, the extent of the diamond drilling for each stage being dependent upon the information obtained from diamond drilling under the preceding stage.

FIRST STAGE

This stage of operation assumes the drilling of one row of diamond drill holes to be located at right angles to the Calaveras fault, fifteen feet west of prospect shaft No. 3 which has been sunk to a depth of 50 feet.

The No. 1 diamond drill hole is to be located 40 feet south of the surface trace of the Calaveras fault and will be drilled vertically to a depth of approximately 150 feet. provided it is in gossan

The No. 2 diamond drill hole is to be located 50 feet north of the Calaveras fault and will be drilled to the southwest toward the fault at an angle of 80° from the horizontal. This hole will probably intercept the fault at an approximate depth of 300 feet provided the fault is vertical. Will not show the thickness of gossan if any

Holes No. 3, 4, 5 and 6 are to be spaced 50 feet apart commencing with Hole No. 2. Each hole is to be drilled vertically to an approximate depth of 150 feet which depth should penetrate the gossan outcrop and extend into the underlying sulfide zone to a depth of approximately 100 feet. The aforesaid holes should determine the thickness and extent of the gossan. Proposed diamond drill holes under Stage No. 1 are shown in red on the accompanying map marked Exhibit A. Holes should be drilled only if in gossan

The combined footage of the six holes would amount to approximately 950 feet of hole which at a cost of $6.00 per foot would amount to $5,700.00.

Can it be contracted for less?

ROY G. MEAD
CONSULTING ENGINEER

If the aforesaid drilling program under Stage No. 1 is successful and copper values showing commercial ore are disclosed, then the drilling of Stage No. 2 should be undertaken.

SECOND STAGE

This stage of operation assumes the drilling of four rows of diamond drill holes of eight holes to the row spaced 25 feet apart and drilled to an approximate depth of 100 feet. The location of the holes is shown in blue on the accompanying map. These holes should determine the thickness of the gossan outcrop or overburden and the copper content of the ore body below the oxidized zone. By the drilling of these holes an area for power shovel operations could then be determined.

To be done only if holes 1, 2, 3, 4 5, + 6 show favorable

What is amt of overburden that can be handled?

Under this operation 3200 feet of hole would be drilled, the cost of which at $6.00 per foot would amount to $19,200.00.

THIRD STAGE

This stage of operation assumes the drilling of a row of four diamond drill holes located 50 feet northeast of the Calaveras fault spaced 200 feet apart commencing with Hole No. 2 (Stage No. 1 shown in red on Exhibit A). Each hole in this operation is to be inclined 80° to the southwest from the horizontal and drilled to an approximate depth of 400 feet. These holes should penetrate the Calaveras fault and determine the extent of the ore bodies near the Calaveras fault at a vertical depth of approximately 300 feet below the surface. These ore bodies could only be worked by selective mining operations.

Angle to be changed if hole #2 indicates ore below the Calaveras fault

Under this operation 1600 feet of hole would be drilled, which at $6.00 per foot would amount to $9,600.00. The proposed location of the diamond drill holes under this stage of operation is shown in green on Exhibit A.

This stage of development should be pursued whether or not the operations under Stages No. 1 and 2 should prove that shovel mining operations would not be profitable.

The cost of the development operations under the aforesaid stages is summarized as follows:

First stage of drilling	$ 5,700	
Engineering, overhead and accounting	1,000	$ 6,700
Second stage of drilling	$19,200	
Engineering, overhead and accounting	2,000	21,200
Third stage of drilling	$ 9,600	
Engineering, overhead and accounting	1,000	10,600
		$38,500

SIERRA COPPER COMPANY

21st Floor Tower Petroleum Building

Dallas, Texas

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

PURSUANT TO MINERAL ORDER 5

UNDER DEFENSE PRODUCTION ACT OF 1950

Form MF-100
(March 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 _____

Name and address of applicant

Date _____

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) Necessity Certificate pursuant to the provisions of Sec. 124–A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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?
   (*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:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   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.
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.
   (*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)
Ronnie B. Smith, Tower Petroleum Bldg., Dallas, Tex.	President & Director	None	450,000	90%		None	
Roy G. Mead, Glendale, Calif.	Vice-Pres. & Director	None	50,000	5%		None	
R. C. Bergen, Los Angeles, Calif.	Secy-Treas.	None	--	--		----	
C. B. Wood, Copperopolis, Calif.	Stock-holder	None	--	5%		None	
	Total	----	x x x x x	100%		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	$ 13,500	$ To be	$ 1.50	None	None
Preferred stock	$100,000	$ issued*	$100.00	None	None

~~*Indicate period covered.~~ *To be issued contemporaneously with approval of this application. To date, approximately $35,000 has been expended by individuals in addition to personal services.

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.)	- - - -	- - -	NONE	- - - - - -	- - - -
2. Quantity of product processed (specify unit of measure and type of process)			"		
3. Quantity and grade of product sold or shipped (specify units of measure)			"		

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. After completion of exploration, estimated monthly production -- 4500 tons from McCarty, 4500 tons from Donner.

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 REPORTS OF ROY G. MEAD ATTACHED.

16—68792-1

SEE REPORTS OF ROY C MEAD ATTACHED.

(*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)		SEE MEAD REPORTS.			
Indicated (probable)		SEE MEAD REPORTS.			

(*c*) If placer: NOT APPLICABLE.

(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.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

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.

SEE LAST PAGE.

(Name of company) By (Signature of authorized official)

(Date) (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

Form MF-100
(March 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. dma-~~1951~~ 577 X

Date received 5/9/51

Sierra Copper Company
21st Floor Tower Petroleum Bldg.
Dallas, Texas

Name and address of applicant

Date May 1, 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) Necessity Certificate pursuant to the provisions of Sec. 124-A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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?
   (*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:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   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.
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.
   (*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.

16—63792-1

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		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	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.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

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.

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.

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GENERAL TECHNICAL DATA

1. Materials produced:

   (a) Chief mine, mill or smelter products: Copper and Zinc sulfides and carbonates and Chalcopyrite.

   (b) By-products: None.

2. Name of Mines: McCarty Mine (formerly known as Calaveras Copper Mine) and Donner Mine.

   Type of Mines: Underground.

   Name of Mill: Mountain King Mill.

   Type of Mill: Modern ball mill containing three (3) complete units, with a total capacity of 600 tons of ore per day. Mill is under lease to applicant for a period of two years beginning April 23, 1951.

   Smelter: None.

   Refinery: None.

   Pit: None.

   Quarry: None.

   Drilling operation: It is proposed to core drill both properties.

   Extent of workings:

   (a) Linear feet of shafts:

   McCarty: 55 feet - newly timbered.

   Donner: 60 feet - newly timbered.

   (b) Linear feet of drifts and crosscuts:

   McCarty: 10 feet of crosscuts.

   Donner: None.

   (c) Linear feet of tunnels or adits: None.

   (d) Linear feet of other mine openings:

   McCarty: 110 ft. vertical shaft, newly timbered.

   Donner: None.

(e) Flood conditions and pumping problems:

McCarty: The McCarty Mine is flooded, but the water is kept down by the use of one Ingersoll-Rand No. 35 sump pump having a capacity of 90 gallons per minute with a 100-foot head when operated by compressed air at 100 pounds pressure.

Donner: No water problem as of present depth.

3. Location, etc.

(a) Distance and direction from nearest town and shipping point:

McCarty: 20 miles Northeast of Farmington, California (shipping point of high grade or milled concentrate), one mile Southeast of Copperopolis (nearest town).

Donner: 20 miles North Northeast of Farmington, Calif. (shipping point of high grade or milled concentrate), 9½ miles Northwest of Copperopolis (nearest town).

(b) Mining district:

McCarty: Calaveras.

Donner: Calaveras.

(c) Township, Section, Range:

McCarty: Mineral Entry No. 13, Lot 37, Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres, more or less.

Donner: Southwest 1/4 of Section 33, Township 2 North, Range 11 East, M.D.B.&M.

(d) County, State:

McCarty and Donner: County of Calaveras, State of California.

4. (a) Operation:

McCarty: Prospect shaft was sunk to a depth of 55 feet with a crosscut of approximately 10 feet at the bottom. Operations on the McCarty were suspended April 25, 1951 pending action on this application.

Donner: The Donner property is being operated as an exploration project, employing six men in the process of sinking vertical shaft.

All operations to date have been carried on by Ronnie B. Smith individually. Mr. Smith is the chief stockholder in applicant Sierra Copper Company and proposes to transfer all operations to applicant, together with an assignment of the mining leases.

(b) The McCarty property is being operated under a lease and bond for fee simple title. The Donner property is being operated under a lease. Both leases stand in the name of Ronnie B. Smith individually, chief stockholder of applicant, but will be assigned to applicant upon approval of this application.

5. Number of years in production:

The present exploration project has been underway approximately five months. As to prior production, see attached engineering reports by Roy G. Mead, consulting engineer, of Glendale, California. It is estimated that actual production will begin 100 days after approval of the exploration project.

6. Experience of operators:

(a) The applicant is a newly-formed corporation.

(b) The persons who will manage the project and their experience are as follows:

Mr. Ronnie B. Smith will be the president of the company and will have charge of the overall supervision of the work. Mr. Smith is a chemical engineer with wide and varied experience in the oil industry, both in the producing and refining phases thereof, and has taken the leading part in the organization and development of several successful business enterprises.

Mr. Roy G. Mead will be vice-president and general manager of the applicant company, and will be in active charge of the mining and milling operations, and will be responsible for the technical aspect of the enterprise. Mr. Mead is a licensed petroleum engineer and geologist with many years of experience in the State of California. A brief outline of Mr. Mead's background and experience is to be found in the publication "Who's Who in Engineering", Sixth Edition, page 1342, which we quote as follows:

"Mead, Roy G., Cons.Engr. and Geol., 614 So. Hope St., Los Angeles, Calif.; res. 920 Burchett St., Glendale, Calif. Cons. Engr. and Geol.; b. Garfield, Colo., July 22, 1881; s. Frank W. and Matilda Gibbons Mead; edn. Pub. Sch., Aspen, Colo., H.S., Ariz.; Univ. of Ariz., B.S.; Sigma Gamma Epsilon; m. Cora Colvin, Apr. 6, 1908, Los Angeles, Calif.; ch: Roy

Gibbons, Jr. and Norma Pearl; 1906-7 Supt. Kelvin Reduction Co.; 1907-08, Cons. work, Los Angeles, Calif.; 1909-10, Manager Amer. Mining & Development Co.; 1910-12, Asst. Engr., City Engrs. Office, Los Angeles, Calif.; 1912-16, Min. Engr., U. S. General Land Office, Washington, D. C.; 1916-18, Supt., Troy-Arizona Copper Co.; 1918-19, Capt. Engrs., U.S.A.; Captain Engrs., Reserve Corps, 1919-33; 1919-21, Cons. work, Los Angeles, Calif.; 1921-23, Asst. Geol., Associated Oil Co.; 1923-47, Cons. Engr. and Geol., Los Angeles, Calif., General practice; mem. A.I.M.E.; Amer. Assoc. of Petro. Geologists. Regd. Civil Engr., State of Calif.; A.A.S.; University Club; Past Master Euclid Lodge No. 519, F. & A. M.; Los Angeles Consistory."

Mr. C. B. Wood of Copperopolis, California, will be the assistant general manager, immediately under Mr. Mead. Mr. Wood is a resident of Copperopolis, California, and has had wide practical experience in mining and in mill operations and is thoroughly familiar with the Mountain King Mill and the McCarty and Donner Mines.

When actual production is begun, Mr. Frank Lane of Copperopolis, California, will be foreman of the Mountain King Mill, and in immediate charge of the milling operations. Mr. Lane has had thirty years' of experience in the copper and zinc mills of this area of California, including one year when he was foreman of the Mountain King Mill during its operations carried on during the last emergency.

Mr. Howard Castle will be mine foreman, directly in charge of all mining operations. Mr. Castle is a miner of twenty years' experience, most of which was spent in the area immediately around Copperopolis. He worked for two years in the North Keystone Mine, operated during the last emergency, and it is understood that in excess of 10,000,000 pounds of copper was recovered or mined from the North Keystone Mine during that period and milled in the Mountain King Mill, which is proposed for operation by this applicant at the present time.

While the operation of the Mountain King Mill will be under the direct supervision of Mr. Lane, above mentioned, The American Cynamide Company, which has agreed to furnish the chemical reagents for use in connection with the mill, has volunteered to furnish a qualified chemical expert, at applicant's expense, to supervise and assist applicant in the use of chemical reagents in the mill's operations in order that the most efficient rate of recovery may be obtained.

7. History:

See attached reports by Roy G. Mead.

13. Access Roads:

McCarty: There are hard surface roads from McCarty to Mountain King Mill, a distance of six miles by surfaced road, with no grades. Concentrates to be hauled to Farmington, California, a distance of 20 miles over hard surface roads.

Donner: The Donner property is approximately 11 miles by road from the Mountain King Mill, reached through Copperopolis via Highway 4 and Quail Hill Mine Road. Approximately one mile of road will be necessary to reach the Donner property from the Quail Hill Mine Road, over terrain which is not difficult.

Copperopolis and Angels Camp are supply and residence points. Angels Camp is approximately 11 miles from McCarty property over good road, and 17 miles from the Donner property. McCarty is one mile from Copperopolis over good road, and Donner is 7 miles from Copperopolis over good road except for one mile to be constructed.

14. Water Supply:

In addition to water in the mine with respect to the McCarty, there is an all-year-round fresh water stream running across the property.

As to the Donner, there is an all-year-round fresh water stream approximately 1½ miles from this lease, from which it may be necessary to pipe water sometime in the future. In addition, there is water on an old shaft in the northern extremeties of the Donner.

15. Power:

At present, there is a gasoline-driven compressor being used on the Donner property. When operations are resumed on the McCarty property, it is proposed to tie in to the Pacific Gas & Electric line, which is a distance of about 3/4 of a mile from the boundaries of the lease. The rate per hour is undetermined, as well as the cost of the line and transformers.

16. Labor:

Miners - 3; Muckers - 2; Hoist men - 2; Foreman - 1; Engineer - 1.

The above men have recently been moved from the McCarty property to the Donner property. In addition, one electrician and one millwright have been employed since April 23, 1951, putting the Mountain King Mill in proper condition.

17. Equipment and Facilities:

For present equipment on the property, including buildings, see attached reports by Roy G. Mead.

Major pieces of equipment now owned or controlled and in serviceable condition:

1 - hoist
1 - small tugger hoist
1 - Ingersoll-Rand No. 35 sump pump
Miscellaneous hand tools

18. Particular conditions and circumstances:

See Roy G. Mead reports.

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.

SIERRA COPPER COMPANY
(Name of company)

By Roy B. Smith
(Signature of authorized official)

May 1, 1951
(Date)

President
(Title)

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

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

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

DO NOT FILL IN THIS BLOCK

Docket No. dma-~~1131~~ 577 X

Date received 5/9/51

Participation

Sierra Copper Company
21st Floor Tower Petroleum Bldg.
Dallas, Texas

Name and address of applicant

Date May 1, 1951

FILL IN THIS BLOCK

Date of application May 1, 1951

Estimated cost $79,183.00

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine Calaveras Mining District, Calaveras County, California.

Date of filing MF-100 May 1, 1951

DMA Docket Number, if available dma-1131 X

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?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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)?

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

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

*11. State the present and former names of the property, if any.

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

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

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

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

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*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?

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

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

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

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

By _____
(Name of company) (Signature of authorized official)

SEE LAST PAGE.

_____ _____
(Date) (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 APPLICANT

1. See MF-100.

2. See MF-100.

3. See MF-100.

4. See MF-100.

5. See MF-100.

6. Not owner.

7. Leases attached.

8. Applicant corporation has not actually begun business as yet, although it is authorized to do so and duly qualified in both California and Texas. All operations to date have been carried on through Ronnie B. Smith Mining Account and under the direct supervision of Roy G. Mead, and approximately $35,000 has been expended on the project to date.

9. Applicant is prepared to invest approximately $40,000 in the project. This amount is sufficient to pay applicant's part of the cost of the project in accordance with the regulations on Government participation.

THE PROPERTY

10. See attached reports of Roy G. Mead.

11. See MF-100.

12. See MF-100.

13. See MF-100.

14. See MF-100.

15. It is proposed to mill and concentrate the ore from both the McCarty and the Donner properties at the Mountain King Mill, which is located in the Copperopolis Mining District. The mill is approximately 11 miles by road from the Donner property, with one mile of such road yet to be constructed. The McCarty property is approximately 6 miles, by surfaced road with no grade, from the mill.

    The Mountain King Mill is presently under lease to Mr. Ronnie B. Smith, which lease will be assigned to applicant upon approval of application. It consists of three ball mills, flotation cells and filters, completely powered with electric motors, and has a capacity of approximately

600 tons of ore per day. A large reservoir of water, adjacent to the mill, is also included in the lease. The concentrate will be hauled by truck to Farmington, California, a distance of approximately 20 miles, from which it will be shipped by rail to the smelter at Salt Lake City, Utah.

16. History: See attached reports of Roy G. Mead.

17. Production: Mine not in production.

18. Ore or mineral reserves: See Roy G. Mead reports.

19. Conditions or circumstances not brought out by foregoing: See Roy G. Mead reports.

THE EXPLORATION

20. Exploration will be conducted for Copper and Copper deposits in the form of sulfides, carbonates, and Chalcopyrite.

21. It is proposed to deepen each shaft on each of the properties to 100 feet and to crosscut or drift from the bottom approximately another 100 feet in each mine. In addition, it is recommended that a sufficient number of core holes be drilled to a depth of 150 feet to determine the extent of underlying ore bodies at this depth. Mr. Mead, our engineer, estimates that approximately 100 days will be required after approval of application to perform the above work.

22. Geological basis of the project: See Roy G. Mead reports.

THE REQUIREMENTS AND COSTS

23. Itemized statement of estimated requirements and costs:

McCarty Operations

		Total for 100 days of Operation
(a)	3 miners at $12.80 per day, 2 muckers $11.40 per day, 2 hoist men $11.40 per day	$ 8,400.00
(b)	1 foreman at $400.00 per month, 1 engineer at $500.00 per month	3,000.00
(c)	Cost of repairs - None	
(d)	Hoist house $1200.00, head frame $2500.00, blacksmith shop $1000.00	4,700.00

(e)	Hoist electric motor driven $4500.00, mine skip and cable $700.00, air compressor electric motor driven $4000.00, air drills etc. $750.00, water pump $800.00	$ 9,950.00
(f)	Trucks $300.00 per month	1,000.00
(g)	Core drilling equipment $5.50 per foot of hole, including labor, etc.	21,600.00
(h)	Small tools, shovels, picks, powder, etc.	1,500.00
(i)	Electric power $300.00 per month	1,000.00
		$51,150.00

Donner Operations

(a)	3 miners at $12.80 per day, 2 muckers at $11.40 per day, 2 hoist men $11.40 per day	$ 8,400.00
(b)	1 foreman at $400.00 per month, engineer in charge $500.00 per month	3,000.00
(c)	Cost of repairs - None	
(d)	Change room and heating equipment $1500.00, hoist house $1500.00, blacksmith shop $1200	4,200.00
(e)	Gasoline motor hoist $2500.00, gasoline driven air compressor $3000.00, mine skip and cable $700.00, air drills $750.00, water pump for water supply $250.00, mine pump $400.00	7,600.00
(f)	Pick-up truck $2500.00	2,500.00
(g)	Rental value of equipment, etc. - None	
(h)	Small tools, shovels, picks, powder, etc.	1,500.00
(i)	Gasoline for power $250.00 per month	833.00
		$28,033.00

24. Time schedule for the project is estimated for completion within 100 days after approval. It is anticipated that approximately $79,183.00 will be spent.

CERTIFICATION

The undersigned company, and the official executing this

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

SIERRA COPPER COMPANY (Name of Company)	By Ronnie B. Smith (Ronnie B. Smith)
May 1, 1951 (Date)	President (Title)

MINING LEASE AND OPTION TO BUY

CALAVERAS COPPER MINE

-oOo-

THIS AGREEMENT, made and entered into this 2nd day of ~~September~~ October, 1950, by and between JACKSON D. McCARTY CO., a California Corporation, having its principal office in Copperopolis, California, hereinafter called "Lessor," and CHARLES B. WOOD, General Delivery, Copperopolis, California, hereinafter called "Lessee,"

W I T N E S S E T H:

That for and in consideration of the sum of TEN ($10.00) DOLLARS, paid by Lessee to Lessor, receipt of which is hereby acknowledged, and in consideration of the mutual covenants herein contained, it is agreed by and between the parties hereto as follows, to-wit:

1. The term of this agreement shall commence on the 1st day of November, 1950, and continue for ten (10) years thereafter unless sooner terminated in one of the ways hereinafter provided.

2. Lessor does hereby grant to Lessee for the term hereof the exclusive right to carry on underground mining operations on all of the properties described in Exhibit "A" attached hereto and made a part hereof and on the surface of such of said properties as Lessee may select, with the right to extract and remove ores therefrom upon the terms and conditions hereinafter set forth.

3. Lessor does also hereby grant unto the Lessee the exclusive right and privilege of purchasing, during the term hereof, the properties described in Exhibit "A" attached hereto, upon the terms and conditions hereinafter set forth.

4. The total purchase price of said underground mining rights and the right to use the surface of these lands as hereinafter set forth, shall be the sum of One Hundred Fifty Thousand Dollars ($150,000.00), without interest, all of which said purchase price shall be payable as hereinafter set forth.

5. Lessee agrees to payLesser as rental and royalties and as payments upon the purchase price of said lands, percentage royalty payments as follows:

(a) Lessee hereunder agrees that beginning January 1, 1951, he shall, during every month during the term of this Agreement, diligently apply himself in the working and operating of said property and shall employ not less than one hundred and twenty (120) eight hour one man working shifts per month for each and every month thereafter during the term hereof.

(b) On any and all ores extracted from the properties described in Exhibit "A" attached hereto, the Lessee shall pay the Lessor a royalty of five (5) per cent of the net mint or smelter returns received from the sale of bullion or concentrates recovered from said ores until the balance of said purchase price has been paid in full. Said percentage royalties shall be paid within ten (10) days after the receipt of the settlement for such ores or concentrates.

(c) Lessee shall have the right to use any portion of the surface of the demised premises listed in Exhibit "A" necessary in its mining operations, including the operation of open pits, construction of surface plant, storage of dump and waste piles, ore piles, storage of mill tailings, storage of water, rights of way for power lines, water supply and roads; reserving to the Lessor, however, all grazing rights on the land not so used by Lessee.

6. Lessee agrees that during all the time he is entitled to the possession of any of the premises covered hereby he will:

(a) Enter upon the premises and work the same in a proper, skillful and minerlike fashion and in manner necessary to good and economical mining so as to take out the greatest amount of ore possible, with due regard tothe safety, preservation and development of said mines as workable mines.

(b) Well and sufficiently timber all working in the demised premises where proper in accordance with good mining and to maintain such timbering.

(c) Permit the agents or representatives of the Lessor to have access to all workings upon the premises for the purpose of sampling and testing the value of any and all ores that may be disclosed in any part of the workings upon said premises or which are lying upon the dumps or which are being mined and milled and

for the purpose of inspection and survey, and to inspect the milling plant and the operations thereof and all metallurgical data and information, including way bills, shipping receipts and smelter or reduction returns.

(d) Promptly pay for all labor, material and supplies used and employed in connection with its operations, either mining or milling.

(e) Keep said premises, and the whole thereof, free and clear of any and all liens and encumbrances.

(f) Notify the Lessor of all shipments of ores or concentrates, giving the estimated tonnage of value thereof, and the name of the intended purchaser and to provide that copies of all smelter returns shall be delivered to the Lessor.

(g) Pay all taxes assessed against said underground mining rights and against all surface lands occupied by Lessee, and all bullion taxes levied against the product or output of said mines during the life of this lease.

(h) In the event the Lessee sinks any prospect holes, shafts, cuts or other excavations and then abandons the same, or where the same are not being used by the Lessee, the Lessee shall fence such holes, shafts, cuts or other excavations, so as to protect against loss or injury to livestock grazing on said lands. Lessee shall also fence and maintain fences around any lands where slimes are deposited or where poisonous materials are placed or permitted to remain or settle on said lands so as to protect against loss or injury to livestock grazing on the lands of Lessor.

(i) Lessor shallhave the right to post andmaintain on any of said lands, notices of non-liability, so as to protect Lessor and said lands from any claim of laborers or materialmen performing labor upon or supplying materials to any improvement thereon, or as against any claims for injury to employees of Lessee, arising out of any work being performed upon said property.

7. It is understood and agreed that any and all royalties and/or payments on account of the purchase price payable to the Lessor hereunder shall be made by the Lessee paying the same to the Bank of America, Angels Branch, Angels Camp, California, which bank is hereby appointed the agent of the Lessor for the purpose of receiving such royalties and/or payments, any and all payments made to it shall constitute a good and sufficient payment to the Lessor and there shall be no obligation on the Lessee to see to the division or application of said payments.

8. Lessor hereby warrants and agrees to defend the title to the lands described in Exhibit "A" hereto and agrees that the Lessee, at his option, may pay and discharge any taxes, mortgages or other liens existing, levied or assessed against said premises, and in the event he exercises such option, he will be subrogated to the rights of any holder or holders thereof and may reimburse himself from any royalties accruing hereunder for any payments made by him in discharging any such mortgage, tax or lien, save and except any which under the terms hereof is payable by him, it being understood and agreed that any amount so taken by Lessee to reimburse himself as aforesaid, shall be treated and considered as a payment on the purchase price to be applied on the last installment or installments thereof falling due hereunder.

9. Lessor agrees that at any time after Twenty Thousand Dollars ($20,000.00) shall have been paid by the Lessee hereunder, it will upon demand furnish to the Lessee, a policy of title insurance in the sum of One hundred Fifty Thousand Dollars ($150,000.00), issued by a company satisfactory to Lessee, insuring the title of Lessor or Lessee hereunder to all of the patented properties described in Exhibit "A" hereto to be free and clear of any and all liens, encumbrances or defects, save and except those heretofore or hereafter approved by Lessee. Lessor also agrees that Lessee may, at his election, after Twenty Thousand Dollars ($20,000.00) has been paid on the purchase price, instead of demanding a

policy of title insurance from Lessor, as aforesaid, order such a policy of title insurance from such company as he may select, in which event Lessor agrees to pay the title company its charges therefor. Lessor further agrees that at the time the first payment referred to in subdivision (b) of paragraph numbered 5 hereof is made, it will deposit with the Bank of America, Angels Branch, Angels Camp, California, a deed or deeds to the real properties described in Exhibit "A" attached hereto, duly executed and acknowledged in favor of Lessee with instructions to deliver such deed to Lessee when the payments provided for in said paragraph numbered 5 hereof shall have been fully made in accordance with the terms hereof.

10. It is understood and agreed that this is not a firm commitment on the part of the Lessee to occupy the said premises or to carry on mining operations thereof for the term herein provided or to purchase the properties described in Exhibit "A" hereto, and the Lessee may, at his option, terminate this agreement and surrender this lease and option at any time (either before or after he has commenced making payments provided to be paid in paragraph numbered 5 hereof) by giving the Lessor ten (10) days' written notice of his intention so to do, in which event the Lessee shall stand released from all obligations hereunder except pecuniary obligations which may have accrued prior to such termination. In the event that the Lessee does abandon this lease, as herein set forth, or in the event the said Lessee should forfeit his right to continue under this lease, as herein set forth, the Lessee agrees that he will immediately execute and deliver to Lessor a quitclaim deed of said premises, so as to clear the record of any cloud caused by the recording of this lease, and in the event the Lessee should fail or refuse to so deliver such quitclaim deed, he will be responsible to the Lessor for allcosts, damages and attorney's fees incurred in any proceedings taken by the Lessor to clear the title from any cloud caused by this lease or the recording thereof.

11. It is agreed that any notice required hereunder may be served personally upon the person for whom it is intended or may be by mailing the same to the party to whom it is intended, by United States Registered mail, special delivery, addressed to them respectively as follows:

> The Lessor at Copperopolis, Calaveras County, California, or such other place as it may in writing designate.
>
> The Lessee at General Delivery, Copperopolis, California, or such other place as he may in writing designate. Provided, however, that in the event of Lessee assigning his rights under this contract, he will notify the Lessor of the place and person or persons who shall be served with notice.

Five (5) days after the date of mailing, as shown by the receipt of the mailing, shall be deemed the date of receipt of notice.

12. Time is expressly made of the essence of this agreement and should Lessee fail to make any percentage royalty payment herein specified, or fail to keep or perform any of the covenants herein contained by him to be kept and performed, and fail to remedy such default within the time hereinafter provided, this agreement shall, at the option of the Lessor, terminate and Lessor may in such event re-enter upon said premises, repossess the same as in its former estate, and remove all persons therefrom, using necessary force so to do. In any such event, all sums of money therefofore paid as royalty or as installments of the purchase price shall be retained by the Lessor as rental and as liquidated damages for the nonfulfillment of this agreement. It is understood and agreed, however, that in the event the Lessee delay in making any payment required to be made hereunder or in performing any work or act required to be performed hereunder is caused by strikes, shortage of labor, shortage of materials, lockouts, riots, storms, acts of God, war, governmental regulations or restrictions or other casualty or cause beyond the control of the Lessee, the Lessee is hereby granted an extension of time for making such payment or performing such act or work equivalent to the time he

was so delayed. In the event that the Lessor determines that the Lessee has failed to make any payment due hereunder or has committed any act or has omitted doing any act entitling the Lessor to cancel this agreement and forfeit all rights of Lessee hereunder, written notice of such alleged nonpayment or of such alleged act or acts of omission or commission shall be given Lessee who shall have thirty (30) days from the receipt of such notice to cure the default alleged.

13. In the event of the termination or cancellation of this lease and option, the Lessee shall have the right to remove within sixty (60) days after such termination or cancellation, all ores broken and all concentrate products thereof, and may remove any and all equipment, apparatus, machinery and personal property of every kind or character brought or placed upon the properties by the Lessee during the term hereof, whether the same shall have been affixed to the realty or not. If not so removed within such sixty (60) days then and in that event, all of such property shall be and become the property of the Lessors.

14. This agreement shall be binding upon and shall inure to the benefit of the successors and assigns of the respective parties hereto.

15. It is mutually understood and agreed that the obligation to perform hereunder is condition upon a title search being made to the property and it appearing therefrom that title thereto is vested in the Jackson D. McCarty Company. Such title search shall be made forthwith and if such title search shows that the title to said property is not vested in the Jackson D. McCarty Company, that then and in that event, this Agreement shall be null and void. Such title search shall be commenced and completed before January 1, 1951.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first hereinabove written.

JACKSON D. MC CARTY CO.,

BY P. L. McCarty Wise President.

BY Agnes McCarty Orion Secretary.

Lessors.

Lessee.

EXHIBIT "A"

That certain mining claim known as the "CALAVERAS COPPER MINE" located in the Copperopolis School District in the County of Calaveras, State of California, being more particularly described as Mineral Entry #13, Lot 37 in Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres more or less.

STATE OF CALIFORNIA)
SS
COUNTY OF SAN JOAQUIN)

On this 2 day of ~~September~~ October, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared G. B. McCarty Vice and _____, known to me to be the President and Secretary, respectively, of Jackson D. McCarty Co., a corporation, that executed the within instrument and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County and State aforesaid, the day and year in this certificate first above written.

Notary Public in and for the County of San Joaquin, State of California

My Commission Expires December 17, 1950

STATE OF CALIFORNIA)
SS
COUNTY OF SAN JOAQUIN)

On this _____ day of September, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Charles B. Wood, personally known to me to the person described in and whose name is subscribed to the foregoing instrument and he duly acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand affixed my official seal at my office in the County and State aforesaid the day and year in this certificate first above written.

Notary Public in and for the County of San Joaquin, State of California

My Commission Expires _____

ASSIGNMENT

THIS ASSIGNMENT, made and entered into this 1st day of November, 1950, by and between CHARLES B. WOOD and CELESTA M. WOOD, his wife, (hereinafter collectively referred to as "Assignors") and RONNIE B. SMITH (hereinafter referred to as "Assignee"),

W I T N E S S E T H:

WHEREAS, Assignors are the owners and holders of the rights and interests created in their favor by virtue of that certain mining lease and option to buy dated October 2, 1950, by and between Jackson D. McCarty Co., a California corporation, as Lessor, and Charles B. Wood, as Lessee, recorded in the County of Calaveras, State of California on November 6, 1950 in Book 64, Page 1 of 4 (which mining lease and option to buy is hereinafter referred to as said "Lease-Option Agreement"), and

WHEREAS, Assignors desire to assign to Assignee and Assignee desires to acquire the Lessee's interest under said Lease-Option Agreement and the leasehold estate created thereby,

NOW, THEREFORE, in consideration of the sum of ten dollars ($10.00) and other good and valuable consideration, receipt and adequacy of which is hereby acknowledged, Assignors do hereby sell, convey, assign, transfer and set over unto Assignee, his successors and

assigns, said Lease-Option Agreement, the leasehold estate created thereby and all other rights and interests vested in Assignors, or either of them, by the terms and provisions thereof. The land demised and affected by said Lease-Option Agreement and which is the subject of this assignment, is situated in the County of Calaveras, State of California, and is more particularly described as follows:

> That certain mining claim known as the "CALAVERAS COPPER MINE" located in the Copperopolis School District in the County of Calaveras, State of California, being more particularly described as Mineral Entry #13, Lot 37 in Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres more or less.

This assignment is subject to the following terms and provisions:

1. Assignee shall have the right at any time and from time to time to quitclaim or surrender all or any portion of the rights and interests covered by said Lease-Option Agreement. Provided, however, that if Assignee at any time desires to quitclaim or surrender said rights or interests, he shall first notify Assignors in writing and Assignors may elect within a period of five days after the giving of said notice to accept a reassignment of said Lease-Option Agreement and all rights and interest thereunder. In the event that Assignors shall fail to notify Assignee in writing within said five day period that Assignors elect to accept such reassignment, Assignee may quitclaim or surrender said Lease-Option Agreement and all rights and interests thereunder direct to the Lessor. In the event that Assignors shall elect

to accept a reassignment of said Lease-Option Agreement, Assignors shall, from and after the date of such election, assume and perform each and all of the terms, covenants and conditions of said Lease-Option Agreement and shall indemnify and hold Assignee harmless from any and all further obligations and liabilities pursuant to or connected with said Lease-Option Agreement or any rights, interests or obligations thereunder.

2. Assignors warrant and represent that said Lease-Option Agreement is a valid subsisting agreement in full force and effect according to its terms, and that the validity of said Lease-Option Agreement is not subject to attack for any reason or by the Lessor or anyone claiming by or through the Lessor, and that there are no defenses to the enforcement of said Lease-Option Agreement which might impair or impede the enjoyment by Assignee of his rights and interests thereunder. Assignors further warrant and represent that said Lease-Option Agreement and the land and other interests covered thereby are free and clear of any royalties, reservations, liens or encumbrances made or suffered by Assignors. Assignors hereby agree to indemnify and hold Assignee harmless of and from any loss, cost or expense incurred by reason of the breach of any of the foregoing warranties.

3. Any notice required or permitted to be given hereunder may be given by registered mail addressed

to Assignors or Assignee, as the case may be, at the following address or at such other address as the respective parties may from time to time designate in writing:

To Assignors at: Box 43, Copperopolis, California;

To Assignee at: c/o Petroleum Reserve Corporation, Tower Petroleum Building, Dallas, Texas.

Any notice so given shall be deemed to be effective for all purposes at the expiration of forty-eight hours after deposit thereof in any United States Post Office within the United States with first class postage and registry fee therefor fully paid.

4. The terms "Assignors" and "Assignee" wherever used herein shall include, and all the terms and provisions hereof shall bind and inure to the benefit of, the legal representatives, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this assignment the day and year first above written.

Charles B. Wood

Charles B. Wood

Celeste M. Wood

Celesta M. Wood
"Assignors"

Ronnie B. Smith

Ronnie B. Smith
"Assignee"

STATE OF CALIFORNIA)
) SS:
County of _____)

On this ____ day of _____, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared CHARLES B. WOOD and CELESTA M. WOOD, personally known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and they duly acknowledged to me that they executed the same.

WITNESS my hand and official seal.

_____
Notary Public in and for said County and State.

STATE OF _____)
) SS:
County of _____)

On this ___ day of _____, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared RONNIE B. SMITH, personally known to me to be the person described in and whose name is subscribed to the foregoing instrument, and that he duly acknowledged to me that he executed the same.

WITNESS my hand and official seal.

_____
Notary Public in and for said
County and State.

Note

In connection with the foregoing McCarty Lease, the present holder, Mr. Ronnie B. Smith, has agreed that prior to assignment to Sierra Copper Company, he will assign and convey and vest in Charles B. Wood, Roy G. Mead and M. Carroll Smith, each, a one and one-half per cent (1½%) royalty interest, payable out of the gross proceeds of ores and/or minerals mined and milled from the lands concerned.

MINING LEASE

THIS MINING LEASE made on this 29 day of March, 1951, by and between HERMAN L. DONNER, of Milton, California, as lessor, and RONNIE B. SMITH, of 2106 Tower Petroleum Building, Dallas, Texas, as lessee,

WITNESSETH:

That lessor in consideration of the sum of Twenty Five Hundred Dollars ($2500) paid upon the execution hereof, the receipt whereof is hereby acknowledged, and the payments provided for herein and the faithful performance of the terms, conditions, covenants and agreements herein agreed to be kept and performed by lessee, does hereby lease and let unto said lessee for the term hereinafter specified, and for the sole purpose of prospecting, developing, mining and working the rock and ores therein for the gold, copper and other precious metals therein contained, as hereinafter provided, all that certain real property situated in Secs. 33 and 34, T. 2 N., R. 11 E., M. D. B. & M., in Calaveras County, California, and particularly described as follows:

Beginning at the SW cor. of the SE 1/4 of said Sec. 33, thence running northerly along the westerly boundary line of the E½ of said Sec. 33 to a point thereon formed by the intersection thereof with the northerly projection of the easterly line (being the 2nd course of the description therein) of that certain parcel of land described in and conveyed by the deed from George Callahan, et al., to Herman Lee Donner, dated July 24, 1942, and recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County Records; thence S. 46°54' E. to a point in the southerly boundary line of the SW 1/4 of SW 1/4 of said Sec. 34, being the point thereon formed by the intersection thereof with the southerly projection of the easterly line of said above mentioned parcel of land described in and conveyed by said above mentioned deed recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County records; thence westerly along the southerly boundary line of said Secs. 33 and 34 to the point of commencement, and containing 120 acres, more or less, inclusive of the parcel of land containing 40.230 acres, more or less, described in the above mentioned deed recorded in Book 24 of Official Records at page 214, et seq., Calaveras County Records.

Together with all leads, lodes and veins of quartz and other rock in place that lie or apex therein and all

the dips, spurs and angles thereof, including the right to follow the same extralaterally on their downward course into and under the adjoining premises as mentioned and provided in the deed to Herman Lee Donner recorded in Book 36 of Official Records at pages 377 & 378, Calaveras County Records.

Also Together with all rights of ingress and egress owned by lessor over adjoining lands.

TO HAVE AND TO HOLD the said premises unto said lessee for the term of fifteen (15) years from the date hereof, so long as said lessee shall fully and faithfully perform each and all of the terms, conditions, covenants and agreements hereinafter contained, it being agreed, however, that in the event said lessee shall have fully and faithfully performed each and all of the terms, conditions, covenants and agreements herein contained during the original term hereof he shall have and is hereby given the right and option of renewing this mining lease and agreement for an additional period of fifteen (15) years under the same terms, conditions, covenants and agreements as herein set forth excepting that there shall be no option for any renewal or extension of the said term thereof.

Said parties hereto do hereby mutually covenant, promise and agree as follows, to-wit:

1. Lessee shall have the exclusive right during the term of this lease of entering into and upon the lands hereby leased for the purposes above mentioned with the right of installing machinery and mining equipment and erecting buildings and improvements thereon as may be deemed expedient by lessee for exercising the rights hereunder given.

2. Lessee shall have the right to mill or otherwise reduce the ores from said premises or to ship the same to some responsible smelting company made known to lessor for the purpose of obtaining the copper, gold and other precious metals and values therefrom, the proceeds as soon as determined to be divided and paid to the respective parties hereto in the manner as follows:

(a) Ten per cent (10%) of the proceeds from copper and all precious metals recovered from all unmilled ores shipped from mine to smelter for treatment shall be paid to lessor and ninety per cent (90%) thereof to lessee;

(b) Eight per cent (8%) of the proceeds from copper and all precious metals recovered from the concentrates of milled ores shipped from mine to smelter for treatment shall be paid to lessor and ninety two per cent (92%) thereof to lessee; and

(c) In addition to the foregoing royalty payments provided in sub-paragraphs (a) and (b) above, lessee agrees to pay lessor fifty per cent (50%) of said proceeds from copper and all precious metals recovered from all ores and minerals shipped from said property and premises until such time as lessor has been paid the total sum of Twenty Five Hundred Dollars ($2500), whereupon all subsequent royalty payments shall be as above provided in sub-paragraphs (a) and (b) hereof.

In the payment and division of the proceeds as above mentioned it is agreed that the same shall be based upon smelter recovery with reductions only for the costs of railroad transportation and treatment of the ores at smelter and paid to lessor within fifteen (15) days after said proceeds are received from the smelter company with a duplicate receipt of the smelter company statement or report therewith.

3. Lessee agrees to pay to lessor, as a condition for keeping this agreement in force and effect, the sum of Three Hundred Dollars ($300) per month commencing six (6) months after the date of this lease and continuing monthly thereafter during the life of this lease, it being agreed, however, that if and when any royalties are paid as hereinabove provided, then lessee shall be entitled to credit said royalties against the monthly payment due under this paragraph for the month only in which said royalties are paid, but not to any of the prior or subsequent monthly payments made or payable under this paragraph.

4. Lessee agrees that all work of mining and developing said property under this lease shall be done in a good and workmanlike manner so as to develop said property as a mine for permanent future mining operations and that all of such work shall be without cost, charge or expense to lessor or to said property.

5. Lessee agrees to commence the active work of mining and developing said property within thirty (30) days from the date of this lease and to thereafter continuously mine and develop said property during the life of this lease by doing and performing monthly not less than 75 shifts of mining work, except when interrupted by act of God, action of the elements, strikes, riots, picketing or lockouts, and in such event reasonable diligence will be used to remove the cause of interruption and resume work at the earliest possible moment.

6. Lessee agrees to keep all workmen fully insured under and in compliance with the Workmen's Compensation Insurance and Safety Act of California during operations hereunder and to comply also with all other laws, rules and regulations, both State and Federal, governing mining operations and to conduct all work hereunder in accordance with good mining standards and methods and to promptly pay all bills for labor performed and for equipment, materials, supplies, electric energy, water and/or utility furnished on said lands during the term hereof and to keep said lands free and clear of all labor, mechanics' and other liens and to that end will keep posted on said lands where any work is being performed, or equipment, materials, supplies or utilities furnished, such notice or notices of non-responsibility on behalf of lessor as said lessor may desire and furnish to lessee, it being agreed, however, that lessor also reserves the right during the life of this lease to post and keep posted a notice or notices of non-responsibility of lessor and of said premises for any work or labor performed or for materials furnished to be used in connection with mining operations hereunder in or upon said premises.

7. It is agreed that at all times that lessee shall carry on mining operations during the life of this agreement said lessee shall keep full, true and correct books of account, statements,

vouchers, smelter returns and receipts at an office kept in Calaveras County, California, pertaining to mining operations conducted hereunder, and particularly showing the amount of ores reduced and the gross proceeds of copper, gold and other precious metals derived therefrom, and said lessor or his duly authorized agent shall at all reasonable times have free access to all parts and portions of said mining property and premises, real and personal, and to any mill or other reduction works where said ores are treated, crushed or reduced for the purpose of examination and inspection and shall be entitled to take samples of ores and to examine all books of account, statements, vouchers, smelter returns and receipts agreed to be kept as hereinabove provided.

8. It is agreed that lessee shall have sixty (60) days from and after the termination of this agreement without purchase within which to remove such mining machinery, tools, appliances and equipment as may hereafter be placed in and upon said mining property and premises by lessee, and in the event that said mining machinery, tools, appliances and equipment shall not be removed within said period of sixty (60) days then and in that event the same shall be deemed affixed to the realty and become a part thereof and belong to lessor, it being expressly agreed, however, that lessee shall not be entitled to exercise any of the rights of removal under this paragraph until all sums due and owing to lessor under any of the terms and provisions hereof shall have first been fully paid.

9. It is agreed that lessee, during the life of this agreement, shall pay all taxes, prior to delinquency, that shall be levied or become due and payable upon any improvements or personal property placed upon said mining property and premises by lessee and also upon said mining property and premises hereby leased, inclusive of the current taxes for 1951-52, which are now a lien upon said property but not yet assessed or levied.

10. It is agreed that the terms and conditions of this lease, insofar as the lessee shall be required to operate, mine and develop said premises is optional with said lessee, who shall have the right at any time to discontinue and cease said work hereunder whereupon said lessor shall be entitled to resume possession of said premises and real property, free and clear of any and all claims hereunder.

11. Lessee agrees that in the event he desires to terminate or abandon this lease as herein provided that he will execute and deliver to lessor a duly executed quitclaim deed fully releasing the property from the effects of this lease.

12. It is agreed that all of the surface and grazing rights of said property and premises for agricultural and stock raising purposes and uses are reserved and excluded from the operation of this lease but excepting, however, so much of the said surface thereof as is reasonably necessary and required for the erection and construction of surface plants for mining operations thereon, including the erection of all necessary buildings, mills, and other improvements for extracting and reducing the ores from said premises during the course of mining operations hereunder and for roads, power lines, telephone lines, pipe lines, ditches, water storage tanks or ponds, ore and waste dumps, tailings piles and other necessary appurtenances for mining operations hereunder.

13. It is agreed that during the life of this agreement lessee shall not damage any of the livestock grazing upon said property and premises hereby leased or any of the grazing and agricultural rights reserved and excepted from the operation of this lease as aforesaid and shall keep, at all times, all of the main workings and shafts and excavations, water storage tanks or ponds, ore and waste dumps, tailings piles and other mining appurtenances installed in and upon said premises for mining operations here-

under fenced off, or otherwise protected against livestock becoming injured thereby, and will conduct mining operations hereunder at all times with reasonable regard for and protection of the said grazing and agricultural rights of lessor which are being reserved and excluded from the operation of this lease and are now actually under lease to third parties.

14. It is agreed that all ores and rock obtained from said property and premises and the products or concentrates therefrom shall be kept separate and apart from those obtained from other properties by lessee in the shipment and treatment thereof for the purpose of obtaining the copper and all precious metals therefrom.

15. It is agreed that time is of the essence of this lease and of each and all of the payments to be made and of each and all of the terms, provisions and conditions hereof and in the event that lessee shall at any time fail to perform or carry out any of the terms, conditions and agreements herein imposed upon lessee or make any of the payments provided herein within thirty (30) days after notice in writing from first party to perform as herein provided and required, mailed to lessee at 2106 Tower Petroleum Building, Dallas, Texas, then this lease shall immediately cease, end and terminate at the option of lessor, and all further rights of said lessee in and to said premises hereunder shall at once and immediately become terminated and all payments theretofore made hereunder shall be retained by lessor as the property of lessor and said lessor shall have the right to immediately enter into and upon said premises and remove all persons therefrom and take immediate and exclusive possession thereof and any and all mining and other machinery and equipment of every kind or nature placed in and upon said property or used thereon during operations hereunder shall upon forfeiture, surrender, termination or abandonment of this mining lease, be removed within sixty (60) days

thereafter, as hereinabove provided, and if not so removed the same shall then be and become a fixture and part and parcel of the real property and belong to said lessor.

16. Lessor agrees to use his best efforts to assist lessee in acquiring rights of ingress and egress over adjoining properties which are not owned by him but lessor shall have no obligation to incur any cost or expense in connection therewith and if and when lessee shall acquire and/or construct, at his expense, an all-weather road to and from said property and premises then this paragraph shall be of no further force or effect except that lessee shall have continuing rights, during the life of this lease, to use such road at his risk and expense for the purposes herein provided, it being agreed, however, that any such road shall be and become appurtenant to and a part of the real property and premises of lessor.

17. It is agreed that lessee may assign or transfer this lease, but no assignment or transfer shall be valid or effective until lessor receives a notice in writing of the name and address of such assignee or transferee and, subject to the provisions of this paragraph, this lease shall inure to the benefit of and be binding upon and enforceable by the respective legal representatives, successors and assigns of the parties hereto.

DATED AND EXECUTED on the day and year first above written.

Herman L. Donner
Lessor

Ronnie B. Smith
Lessee

STATE OF CALIFORNIA)
) ss.
COUNTY OF CALAVERAS)

On this 4th day of ~~March~~ April, 1951, before me, the undersigned Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared HERMAN L. DONNER, known to me to be the person described in and whose name is subscribed to the within instrument, and he acknowledged to me that he executed the same.

WITNESS MY HAND AND OFFICIAL SEAL on the date in this certificate first above written.

Virgil M. Airola
Notary Public in and for the
County and State aforesaid. (SEAL)

~~STATE OF~~ CITY Washington)
~~COUNTY OF~~ DISTRICT Columbia) ss.

On this 29th day of March, 1951, before me, the undersigned Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared RONNIE B. SMITH, known to me to be the person described in and whose name is subscribed to the within instrument, and he acknowledged to me that he executed the same.

WITNESS MY HAND AND OFFICIAL SEAL on the date in this certificate first above written.

Mary Whiston
Notary Public in and for the
County and State aforesaid.

(SEAL) My Commission Expires Aug. 31, 1953.

Note

In connection with the foregoing Donner lease, the present holder, Mr. Ronnie B. Smith, has agreed that prior to assignment to Sierra Copper Company, he will assign and convey and vest in Charles B. Wood, Roy G. Mead and M. Carroll Smith, each, a one per cent (1%) royalty interest, payable out of the gross proceeds of ores and/or minerals mined and milled from the lands concerned.

ROY G. MEAD
CONSULTING ENGINEER AND GEOLOGIST
LOS ANGELES

REPORT ON

"CALAVERAS COPPER MINE" OR SO-CALLED MCCARTY PROPERTY

The McCarty property consisting of two patented mining claims, embracing an area of 41.31 acres designated as Mineral Entry No. 13, Lot 37, situated in portions of the W½ of Section 2 and the NW¼ of Section 3, T. 1 N., R. 12 E., is located about one mile southeast of the town of Copperopolis, Calaveras County, California. Copperopolis is reached from Stockton over California State Highway No. 4, a distance of approximately 40 miles, or from Modesto to Farmington, a distance of 18 miles, thence easterly on Highway No. 4.

The topography of the area is characterized by a low southeasterly trending ridge with shallow ravines on the northerly and southerly flanks. The surface elevation ranges from 950 feet on the northwest to 900 feet on the southeast. The area under consideration is shown on the accompanying map, marked Plate I, a photostat of a portion of the following quadrangles - "Copperopolis", "Valley Springs", "San Andreas" and "Bachelor Valley".

A detailed study of the history, production and geology of the Copperopolis area was made by George R. Heyl, a geologist with the United States Geological Survey during the period 1942 to 1945. Mr. Heyl's report was published during the year 1948 in Bulletin No.144, entitled "Copper in California", by the Division of Mines, State of California. The following data relative to the history and geology is quoted from the aforesaid Bulletin No. 144.

> "Within and adjacent to the village of Copperopolis (pl. 1), in western Calaveras County, is a group of mines that have been among the significant contributors to the copper production of California since 1861. These include the North Keystone mine, which recently has been the second-largest copper producer in the state, and the Keystone-Union, a major producer in earlier years, representing a consolidation of the original Union and Keystone properties. Southeast of these is the Empire mine, a smaller development whose production record is not available, and two prospects known as the McCarty and the Calaveras mines. All of these are developed in a strongly mineralized belt designated the Reed lode, which passes through the town of Copperopolis and trends northwest." (Paragraph 1, Page 94).

"The Copperoplis mines have been among the significant producers of copper in California since 1861 with a total production of about 72 million pounds of copper. The mines include the North Keystone mine, second largest copper producer in the state during World War II, and the Keystone-Union mine, a major producer in earlier years." (Page 93).

"Copperopolis was founded in September 1861, and less than 2 years afterward the town had grown to a thriving community of nearly 2,000 people, supported primarily by copper mining and related pursuits. The Union mine was a profitable enterprise from the very beginning of mining operations, and by the fall of 1866 had been developed to a depth of 500 feet. It was then the largest copper mine in the state, and had yielded more than half the total California production for the years 1861-66. The adjoining Keystone mine, by 1867, was developed to a depth of 552 feet, but its recorded production for the 6 previous years was only about a tenth of that of the Union mine. The Empire mine likewise underwent considerable development during this period, but on most of the other claims in the district the amount of underground exploration was small." (Paragraph 1, Page 95).

"In these early days the ore was hauled by wagon to Stockton, from there was shipped by river-boat to San Francisco, whence it was exported to Atlantic Coast ports or to Swansea, Wales. Shipping costs were high, causing all ores of less than 10 percent to be valueless. Attempts to utilize lower-grade ores were made by the erection of a smelter at the Union mine, and a concentrating plant at the Keystone mine, but in neither case were these operations profitable. The average tenor of ore shipped from the Union mine did not exceed 15 percent copper, and that from the Keystone averaged about 1 percent higher. By roasting over wood fires, the tenor of some lower-grade material was increased to that of commercial grade." (Paragraph 2, Page 95).

"By 1887 the Union and Keystone mines were held under one ownership by a group of Boston men. These properties had been idle since 1867, but during 1887 and 1888 they were unwatered. This was followed by a second period of activity, in which the Union shaft was sunk to 600 feet, a 100-ton Orford furnace was erected, and some high-grade matte was produced. The properties were shut down in 1892, and remained idle until 1901 when unwatering was again started.

The Keystone-Union mine, operated as a unit, was active in the years 1902-09, 1911-20, 1923-27, and 1929-30. During the earliest of these intervals the ore was treated by leaching and by direct smelting. Since 1911 the treatment has been either direct smelting or concentration and smelting. In August 1930, in response to a marked decrease in the price of copper, the mine was shut down; it has not reopened since that date. During 1944-46 tailings from earlier operations were reworked for their copper content." (Paragraph 5, Page 95).

"The North Keystone mine was again unwatered in 1942, and production of ore began in the fall of that year. It continued to operate until the summer of 1945, by which time it had been developed to the 1075 level. During these years it was the second-largest producer of copper in California." (Paragraph 2, Page 98).

"The most important mines and prospects at Copperopolis are, from north to south, the North Keystone mine, the Keystone-Union mine, the Empire mine, and the McCarty and Calaveras properties. Of these, the Keystone-Union and the North Keystone have been the most active mines and the major producers in the district." (Paragraph 1, Page 102).

"In recent years the North Keystone has been the only one accessible for extensive underground examination, and consequently most of the conclusions relating to the geology of the ore bodies have been based on observations made in this mine. However, to supplement the study of the ore deposits as much as possible, assay sheets and maps of other mines in the district, and several accessible shallow openings, as the Empire tunnel and the McCarty shaft, have been studied in detail." (Paragraph 1, Pages 102 and 103).

"Southeast of the Keystone-Union mine is the Empire claim, on which is the inactive Empire mine with no reported production since 1867. It consists of a vertical shaft, said to be more than 300 feet deep, and several levels of unknown extent. Near the shaft and toward the south end of the claim are many smaller openings--shafts, pits, and adits--the most important of which is the Empire tunnel. This was the only opening on the claim accessible for extensive examination." (Paragraph 2, Page 108).

"Southeast of the Keystone-Union mine the zone of intense chloritization continues without interruption, and near the Empire shaft reaches its greatest width, approximately 300 feet." (Paragraph 3, Page 108).

"About 150 feet southwest of the Empire shaft collar is an elongate serpentine body whose eastern boundary is a prominent fault line marked by talcose gouge. This is the Calaveras fault, a high-angle, east-dipping fault that can be traced along its strike for more than 2,000 feet. It is analogous in many respects to the Footwall fault of the central and northern part of the district, for here the zone of chloritization, in a general way, has followed it, and the copper mineralization is most strongly developed along this fault or in its hanging wall." (Paragraph 4, Page 108).

"The Empire tunnel is an adit about 420 feet long driven through the mineralized zone near the south end of the Empire claim. It has been mapped in detail (pl. 40), and sampled for ore." (Paragraph 5, Page 108).

"The McCarty prospect is on the Calaveras claim, immediately south of the Empire claim. It consists of two shallow shafts, the southern one 35 feet deep, the northern one partially caved and of undertermined depth. Extending northwest from the southern shaft are two short levels connected by an irregular open stope, near the north end of which is a winze that extends below water level." (Paragraph 2, Page 109).

"The accessible workings are within the oxidized zone, the base of which, at the McCarty prospect, is approximately at 50 feet depth, the position of the water table. The mineralization follows a 2- to 7-foot zone of crushing and shearing along the southwest side of a high-angle fault; this, the McCarty fault, strikes parallel to the related Calaveras fault which is 20 to 25 feet to the east. At the surface the McCarty fault dips east. In the underground workings, however, the fault swings through vertical and has a steep westward dip. It is possible that this reversal of dip has served as a locus of mineralization here." (Paragraph 3, Page 109).

"The ore consists of a mixture of malachite and cuprite in limonite, with small amounts of azurite and, in the lower portion of the workings, chalcopyrite. Encrustations of chalcanthite are not uncommon. This oxidized material is derived from a mixture of chalcopyrite and pyrite, small residual masses of which are present below 20 feet depth. No gangue minerals were observed, other than small veinlets of white quartz." (Paragraph 4, Page 109).

"The wall rocks are green spotted chlorite schist derived from volcanic rocks of intermediate composition. Within the zone of copper mineralization are thin streaks of intensely chloritized rock, similar in character to the chloritized schist present at the North Keystone and Keystone-Union mines. The chloritization is restricted to a width of 3 to 4 feet adjacent to the McCarty fault." (Paragraph 5, Page 109).

"Several of the ore bodies in the mines do not crop out, and the likelihood is strong that additional blind shoots are present in the district. Exploration for these should be restricted to the belts of strong chloritization, and particularly to ground adjacent to faults or close to the intersection of faults. Where surface exposures are poor and underground examination impractical, geophysical methods, such as dip-needle or magnetometer surveys, will probably be of considerable aid in the delineation of significant faults. Special attention should be devoted to areas in which pyritization is strong, for the known ore bodies are generally surrounded by an envelope of disseminated pyrite. The ground immediately north of the North Keystone mine, and that at the south end of the Keystone-Union mine, in light of present knowledge, are two areas that should warrant the most thorough prospecting." (Paragraph 2, Page 110).

The writer has examined the McCarty property and studied the outcropping rocks and the material taken from the three shafts on the property on several occasions. The gossan or oxidized iron outcrop is approximately 300 feet in width and is more prominent and wider than the gossan outcrop on the Union or Keystone properties. Samples of copper and iron sulphides exposed on the dump at the shafts indicate that copper sulphide ores should be encountered at or just below the water level which is approximately sixty feet below the surface at the McCarty No. 3 shafts.

There are two shafts located near the northwest corner of the property, both inaccessible. It is reported that the two shafts were connected by a drift just above the water level, or approximately 60 feet below the surface and that a winze from the drift extends below the water level, and also an open stope above the drift, from which several hundred tons of oxidized ore was extracted.

The No. 3 shaft is located approximately 250 feet easterly from the aforesaid shafts, also inaccessible. It was sunk on the Calaveras fault which dips at an angle of 83 degrees from the horizontal. This shaft is reported to be seventy-five feet deep.

It is proposed to timber the No. 3 shaft and sink it to a depth of 100 feet below the surface, then crosscut the mineralized zone to the northeast and southwest. This work should disclose copper sulfide ores below the water level, which could be extracted up to the overlying leached and oxidized zone and also furnish the data for future development. This assumption is based on the history of operations of the Empire, Union and Keystone properties, located along the same mineralized zone where commercial sulfide copper ores were encountered at and below the water level. The inside measurements of the shaft when timbered will be a 4'6" x 4'6" skip compartment and a manway 4'6" x 2'10". The inclination will be 80 degrees from the horizontal to the northeast.

A 75 horsepower electric motor driven hoist, a 3 drill electric motor driven air compressor and approximately one-fourth of a mile of electric power line will be the power requirements. A headframe skip pump, ore cars, rails and water tank, all necessary pipe and mining tools, will also be required.

With the aforesaid equipment and the crosscuts and drifts from the 100 foot level completed, it is expected that approximately 50 tons of copper sulfide ore can be extracted daily until such time as a second level has been made ready for stoping when the tonnage should be increased to 100 tons per day.

It is proposed to mill and concentrate the ore obtained from the No. 3 shaft at the Mountain King Mill, which is located in the district approximately three and one-half miles due west of the No. 3 shaft, which is reached by a surfaced road with no grades, a distance of six miles. The location of the mill and road is shown in red on Plate I.

The Mountain King Mill, consisting of 3 ball mills, flotation cells and filters completely powered with electric motors, has a maximum capacity of approximately 600 tons of ore per day. The mill was successfully operated during World War II to concentrate copper sulfide ore from the North Keystone property. The reported extraction was 95% of the copper contained in the ore. The concentrates were hauled by truck to Farmington, a distance of twenty miles from which point they were shipped by rail to the smelter at Salt Lake City, Utah. The ramp at Farmington belongs to the Mountain King Mill and is in good condition.

Negotiations are being consumated to lease the Mountain King Mill to concentrate copper sulfide ores from the McCarty property. The minimum monthly rental will be $1,000.00 per month for a maximum tonnage of 50 tons per day.

The McCarty property is owned by the McCarty Corporation and is now held by Ronnie Smith under a lease dated October 2, 1950 with five percent of the net smelter return payable to the McCarty Corporation and one percent payable to Cyril McCarty until the five percent royalty amounts to $150,000.00, the total purchase price.

It is estimated that the cost of sinking and timbering the No. 3 shaft, driving the crosscuts and the upraises preparatory to stoping operations will amount to approximately $25,000.00.

The estimated cost of the necessary machinery and its installation together with other equipment at the mine and the rearrangement of the facilities for dumping the ore at the mill will amount to approximately $25,000.00.

Mine and mill supplies, lease acquisition and working capital for preliminary exploration work prior to blocking out ore and the installation of machinery will amount to approximately $25,000.

The estimated mining, hauling and milling costs, exclusive of development costs, based on 50 tons per day, are estimated at $5.80 per ton divided as follows: Mining $3.00 per ton, trucking $0.50 per ton and milling $2.30 per ton.

It is believed that copper sulfide ore will be encountered in the workings from the McCarty shaft which will carry copper values, at least, or as high as the ore obtained from the North Keystone and Union mines. This opinion is based on the surface outcrop and the ore exposed in the old workings on the McCarty property.

On the basis of mining and milling 50 tons of ore per day carrying 5% copper, the daily profits would amount to $539.00. The net value per ton is based on the following assumption:

Mill recovery 95% - Copper recovered per ton of ore milled 95 pounds		
Value of 95 pounds of copper at 24½ cents per lb.		$23.27
Freight on concentrates and smelting charges	$ 1.80 per ton	
Royalty - 9%	1.93 " "	
Mining and Milling costs	5.80 " "	
Overhead and general expense	1.25 " "	10.78
Net Profit per ton		$12.49

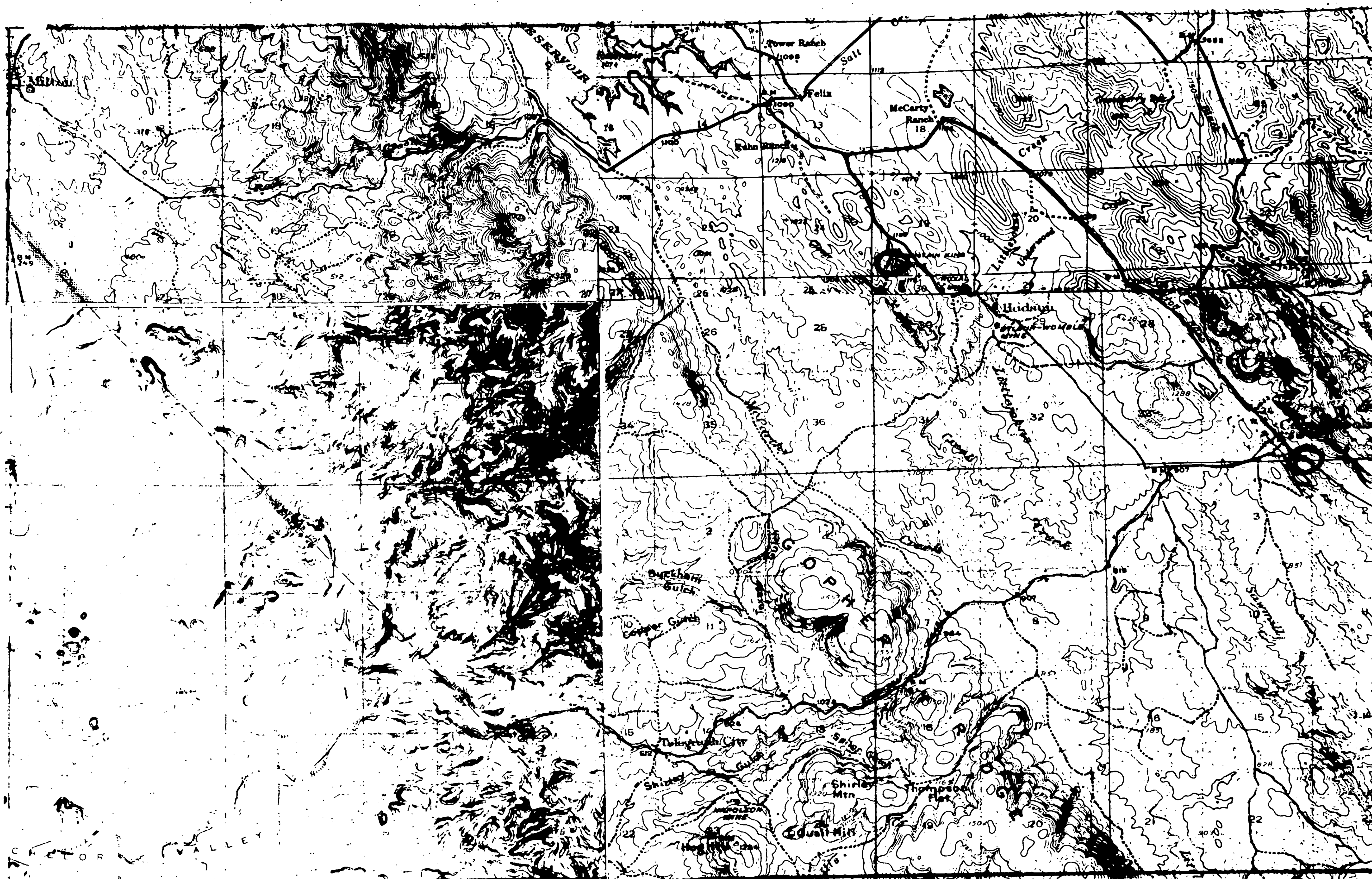
Respectfully submitted,

Roy G. Mead

Roy G. Mead

December 3, 1950

920 Burchett Street
Glendale 2, California



Power Ranch
Salt
Felix
McCarty Ranch
Kuhn Ranch
Creek
Hodson
Little Johnny
Copper Gulch
Buckham Gulch
Telegraph City
Shirley Mtn
Quail Hill
Thompson Flat
Napoleon Mine
C H E L O R
V A L L E Y

DIVISION OF MINES
CLAR P. JENKINS, CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BULLETIN 144
PLATE 20

GEOLOGIC MAP AND SECTION OF THE EMPIRE TUNNEL

COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA

BY
G. B. HEYL AND M. W. COX

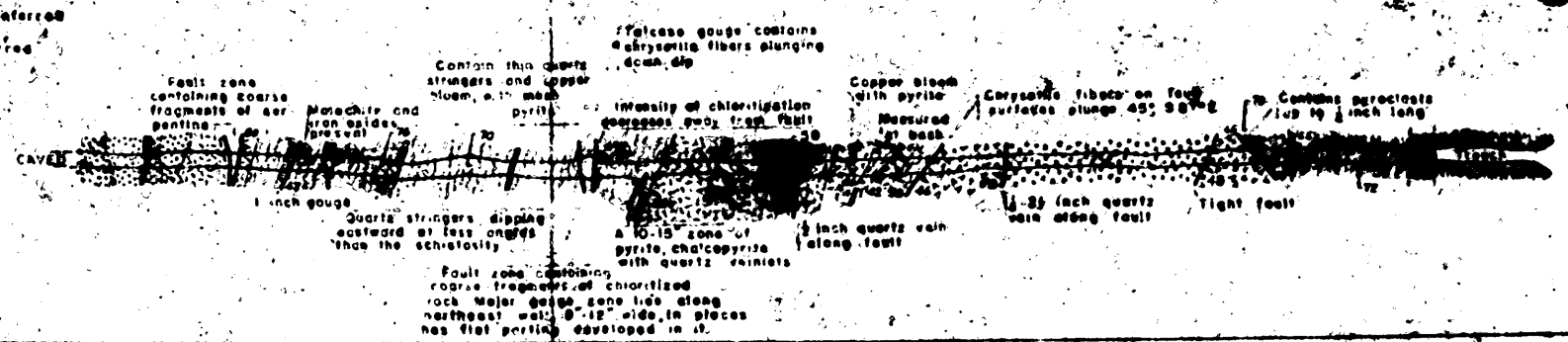
NOVEMBER 1943

EXPLANATION

- Zone of quartz veins
- Pyritized rock
- Chloritized rock
- Granodiorite
- Hornblende diorite
- Hornfels
- Schistose (sheared) saussuritized gabbro
- Saussuritized gabbro
- Serpentine
- Felsite
- Slaty pyroclastics
- Slate
- Green schist
- Contact, showing dip, dashed where inferred
- Fault, showing dip, dashed where inferred
- Attitude of cleavage or schistosity

SCALE

0 10 30 60 90 120 150 Feet



ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

February 25, 1951

Mr. Ronnie Smith
Tower Petroleum Bldg.
Dallas, Texas

Dear Mr. Smith:

The following report is to be considered as a supplement to my report of December 3, 1950 on the McCarty property as it covers development work done on the property after that date.

In my previous report on the property it was proposed to re-timber and sink the McCarty shaft No. 3 to a depth of 100 feet and then crosscut to the east to intercept the Calaveras fault and explore and develop the sulfide ore bodies which in the district, occur on the east side of the Calaveras fault.

From all the obtainable data regarding the McCarty No. 3 shaft it was believed that it was sunk about the year 1870, to a depth of 80 feet on a fault or mineralized zone lying approximately 60 feet to the west of the Calaveras fault on what is now called the McCarty fault.

There was no indications on the surface that any ore had been encountered or stoped from the No. 3 shaft. However, after cleaning out the fill to a depth of 60 feet we encountered an open shaft with old timbers and ladders and an 8 inch Cornish pump discharge pipeline. At a depth of 100 feet a station partly caved was encountered with a crosscut running 40 feet to the northeast and a crosscut running 20 feet to the southwest. Both crosscuts were in slate impregnated with iron sulfides and small seams of chalcopyrite. Below the 100 foot station the ground to the northwest and southeast of the shaft had been stoped to a distance of more than 25 feet on either side of the shaft. The opening was full of water, but soundings indicated that the stope around the shaft was open below the 100 foot level to a depth of more than 50 feet.

Because of the dangerous condition of the opening it was decided that the shaft could not be opened and re-timbered below the 100 foot level without the expenditure of a large sum of money, and then only under rigid safety regulations imposed by the State Mine Inspector. Therefore, it was decided to abandon the shaft. It was learned afterward that several thousand tons of copper sulfide ore had been taken from around the shaft, below the 100 foot level, which was hauled by wagon to San Francisco and there loaded on a sailing vessel bound for Swansea, Wales, which sunk en route.

After the abandonment of the No. 3 shaft exploration work was started along the Calaveras fault 200 feet northeasterly from the No. 3 shaft. At the point where the exploration work was started, the oxidized zone had been eroded to the sulfide zone. Two old shafts were found about 450 feet northeasterly from the No. 3 shaft along the Calaveras fault from which high grade chalcopyrite ore had been extracted. Nine drill holes, each 15 feet deep, were drilled along the outcrop of the fault for a distance of 250 feet commencing with 200 feet from shaft No. 3. All of the drill holes encountered copper sulfides (chalcopyrite). Four openings were then made along the fault, the locations of which are shown on the accompanying map marked Exhibit A.

Opening No. 1, located on the northwest side of the creek, is a trench 4 feet by 6 feet by 4 feet deep and exposes a mineralized zone 6 feet in width with stringers of chalcopyrite from one-half to two inches in width in shale parallel to the strike of the fault.

Opening No. 2 is located along the fault 50 feet northeast of the No. 1 opening, and is a shaft 4 feet by 9 feet by 10 feet deep. A mineralized zone 9 feet in width is exposed showing chalcopyrite seams from 1/2 inch to 4 inches in width, of which 30 inches on the north side is good milling ore showing streaks and seams of chalcopyrite 2 to 4 inches in width.

Opening No. 3 is a shaft 60 feet northeast of the No. 2 shaft along the strike of the fault. This opening is a shaft 6 feet by 6 feet by 11 feet deep. The mineralized zone exposed in Shaft No. 2 has not been encountered in this shaft as the shaft is located about 10 feet north of the fault and will not be encountered until the shaft has reached a depth of about 15 feet. However, spots and stringers of chalcopyrite impregnated in the slate is exposed in the bottom of the shaft.

Opening No. 4 is located approximately 30 feet southwest of the No. 3 opening and 20 feet to the south in the footwall of the fault. This opening is a shaft 4 feet by 6 feet by 8 feet deep. A mineralized zone 4 feet by 3 inches in width is exposed which shows chalcopyrite and bornite, the primary minerals, and the secondary minerals, covellite and chalcocite. This shaft is in slate on the footwall side of the fault. The occurrence of secondary copper minerals indicates that within a few more feet in depth primary sulfide ores will be encountered. At this location it is evident that there is a deposit of copper ore on the south side of the fault. There is also an outcrop of gossan (hematite) and iron-stained slates, over 50 feet in width, to the southeast of the fault, indicating that a lens or deposit of copper sulfides may be encountered in the footwall on the south side of the fault. Shaft No. 4 is being sunk ten feet deeper on the theory that copper sulfide ores will be encountered within that depth.

Basing an opinion on the development work just completed along the fault it is believed that a prospect shaft should be sunk to a depth of 50 feet where the No. 3 opening is located, and the mineralized zone explored by crosscutting to the northeast and southwest from the prospect shaft at that depth, also that the gossan outcrop to the north and south

of the Calaveras fault be prospected by core holes drilled through the gossan into the underlying sulfide zone. A row of core holes drilled northeast and southwest of the fault spaced at 25 foot intervals would, in my opinion, determine the width of the mineralized zone and whether or not the entire ore deposit contained copper values of sufficient grade to justify shovel mining operations or selective underground mining.

I estimate that the prospect shaft and crosscutting will cost approximately $20,000.00 and that the core drilling can be contracted at a cost of approximately $6.00 per foot. A row of holes on a line extending from 50 feet south of the fault to 150 feet north of the fault spaced at 25 foot intervals would require eight holes with an average depth of 75 feet and would cost approximately $3,600.00. Six rows of holes should be drilled at an approximate cost of $21,600.00.

If the core drilling and the prospect shaft determine that the ore body can be mined by power shovel, the shovel mining work can be contracted, therefore no mining equipment would be required. If the deposit cannot be mined by shovel then selective underground mining operations will necessarily have to be employed, in which case a permanent working shaft with suitable hoisting equipment, air compressors and air drills will be required.

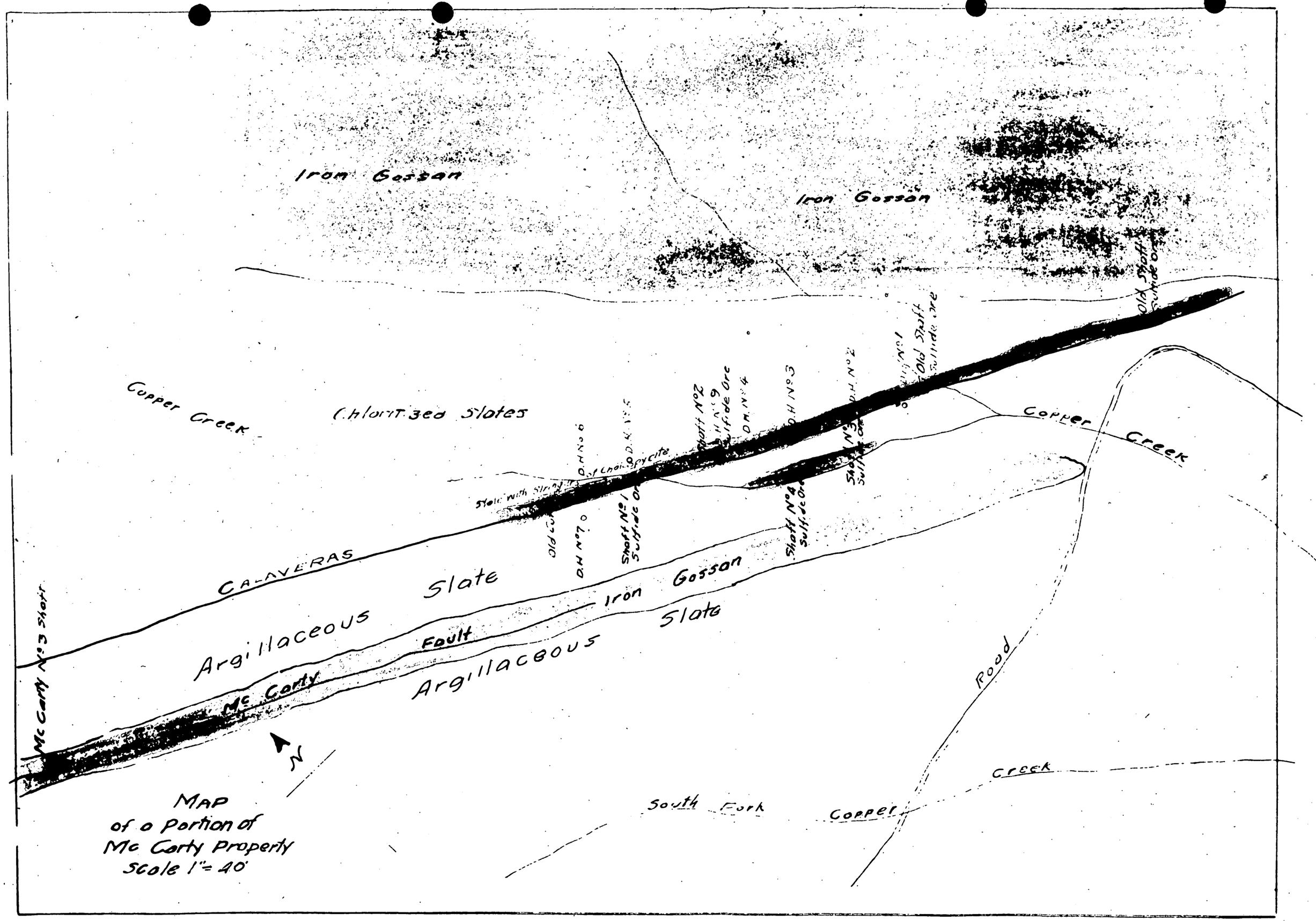
The cost of the hoisting equipment, air compressor drills, etc. is estimated at $25,000.00. The cost of sinking and timbering a permanent shaft to a depth of 100 feet is estimated at $5,000.00. Crosscutting and drifting to block out ore, 1,000 feet at $20.00 per foot, amounts to $20,000.00. The estimated cost for machinery and underground development work amounts to $50,000.00.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm



MAP
of a Portion of
Mc Carty Property
Scale 1" = 40'

5

ED. EISENHAUER, JR.
320-322 So. San Pedro St.
Los Angeles 13, Calif.

ASSAY CERTIFICATE

PHONE VANDIKE 9328

Los Angeles, Calif. Feb 26/51 19

I hereby Certify that the samples described below, received from

Ronnie Smith(c/o Roy G.Mead) assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	OZS. PER TON	VALUE PER TON	OZS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
McCarty # 1	(Shaft No. 2, 9' across bottom of shaft)					1.1		
McCarty#2	(Sample of material from Shaft No. 2)					1.0		
McCarty # 3	(Drilling from drill hole #9, Shaft No. 2, 8' to 16' in depth)					.7		
McCarty # 4	(30" of vein material, slate with seams of Chalcopyrite)					1.6		
McCarty # 5-Sh.# 4	(4'3" oxidized zone exposed in bottom of Shaft No. 4)					1.2		

GOLD @$_____PER OZ.

SILVER @ $_____PER OZ.

LEAD @ _____C.

COPPER @ _____C.

CHARGES 6.25

Ed Eisenhauer Jr.
ASSAYER

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

February 25, 1951

Mr. Ronnie Smith
Tower Petroleum Bldg.
Dallas, Texas

RE: DONNER PROPERTY

Dear Mr. Smith:

The Donner property is located in the SW¼ of Section 33, T. 2 N., R. 11 E., M.D.B. & M., Calaveras County, California, approximately seven miles due west of Copperopolis and four and one-half miles southwest of the Mountain King Mill. The property can be reached from Copperopolis via Highway No. 4 to the junction with the Quail Hill Mine road to the Quail Hill Mine from which point approximately one mile of road will be required. The distance from the property to the Mountain King Mill is approximately eleven miles.

The Donner property embraces a mineralized vein 6 feet wide striking S. 50° E. The footwall is mainly an altered slate of Jurassic age belonging to the Meta-sediments of the foothill belt. The hanging wall is a Meta-Andesite of Jurassic age belonging to the Amador series. The vein material is quartz, iron pyrite and chalcopyrite, with occasional kidneys of manganese oxide. The surface exposure of the vein is an iron gossan.

The property has been partially developed by a shaft sixty feet deep dipping 80° to the west. A sample of ore containing chalcopyrite and pyrite taken across the vein for a width of three feet at a depth of forty feet assayed 9.97% copper, 70 cents gold and 36 cents silver per ton. A sample of the dump containing all the material from the shaft at that depth assayed 6.22% copper, $1.40 gold and $1.88 silver per ton. A sample of the dump containing material taken from the shaft at a depth of sixty feet assayed 4.75% copper.

At a depth of sixty feet the vein was five feet in width, two feet of which was high grade chalcopyrite ore on the hanging wall with three feet of low grade sulfide ore on the footwall. The assay certificate of the high grade ore, marked sample No. 1, and the three feet of vein material on the footwall is attached hereto.

It is proposed to enlarge and timber the shaft and then sink an additional forty feet, then drift one hundred feet north and south on the vein. This work should develop approximately 7,000 tons of milling ore which, according to present indication, should average at least 5% copper or $24.50 per ton.

The cost of trucking to the Mountain King Mill should not exceed $1.50 per ton, mining cost should not exceed $2.50 per ton and milling cost $2.00 per ton, a total of $6.00 per ton. The royalty on 5% ore will amount to $2.45 per ton. Freight and treatment on concentrates will amount to approximately $2.00 per ton of ore. The total operating costs, including royalty, would amount to $10.45, which would leave a net profit of $14.05 per ton.

The cost of the proposed development will amount to approximately $19,000 divided as follows:

Enlarging and timbering present shaft	$1,500
Sinking and timbering 40 feet of shaft	2,000
200 feet of drifting	4,000
Hoist	4,000
Air compressor	2,500
Air drills	1,500
Cable and skip	500
Pipe	500
One mile of road	2,500
	$19,000

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm

7A

ED. EISENHAUER, JR.
320-322 So. San Pedro St.
Los Angeles 13, Calif.

ASSAY CERTIFICATE

PHONE VANDIKE 9328

Los Angeles, Calif. Feb 26/51 19

I hereby Certify that the samples described below, received from

~~Ronnie Smith(c/o Roy Moy G.Mead)~~ assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	OZS. PER TON	VALUE PER TON	OZS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
Donner # 1	(2 ft. of Chalcopyrite and iron pyrite on hanging wall)				of vein)	17.6		
do # 2	(3 ft. of mineralized vein underlying 2 ft chalcopyrite) (Sample No. 1)					2.5		

GOLD @$ ____ PER OZ.

SILVER @ $ ____ PER OZ.

LEAD @ ____ c.

COPPER @ ____ c.

CHARGES 2.50

Ed. Eisenhauer Jr.
ASSAYER

SIERRA COPPER COMPANY

21st Floor Tower Petroleum Building

Dallas, Texas

APPLICATION FOR AID FOR AN EXPLORATION PROJECT

PURSUANT TO MINERAL ORDER 5

UNDER DEFENSE PRODUCTION ACT OF 1950

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Assignment to Ronnie B. Smith of Mining Lease and Option to Buy Calaveras Copper Mine (McCarty Property)	23 - 28
Mining Lease - Donner Property	29 - 37
Roy G. Mead Engineering and Geological Report on Calaveras Copper Mine (McCarty Property).	38 - 46
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Form MF-100
(March 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 _____

Sierra Copper Company
21st Floor Tower Petroleum Bldg.
Dallas, Texas

Name and address of applicant

Date May 1, 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) Necessity Certificate pursuant to the provisions of Sec. 124–A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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?
   (*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:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   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.
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.
   (*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.

16—63792-1

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		Life Insurance Carried for Benefit of Applicant	
				Common (e)	Preferred (f)	Amount (g)	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.)					
2. Quantity of product processed (specify unit of measure and type of process)					
3. Quantity and grade of product sold or shipped (specify units of measure)					

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.

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.

GENERAL TECHNICAL DATA

1. Materials produced:

   (a) Chief mine, mill or smelter products: Copper and Zinc sulfides and carbonates and Chalcopyrite.

   (b) By-products: None.

2. Name of Mines: McCarty Mine (formerly known as Calaveras Copper Mine) and Donner Mine.

   Type of Mines: Underground.

   Name of Mill: Mountain King Mill.

   Type of Mill: Modern ball mill containing three (3) complete units, with a total capacity of 600 tons of ore per day. Mill is under lease to applicant for a period of two years beginning April 23, 1951.

   Smelter: None.

   Refinery: None.

   Pit: None.

   Quarry: None.

   Drilling operation: It is proposed to core drill both properties.

   Extent of workings:

   (a) Linear feet of shafts:

   McCarty: 55 feet - newly timbered.

   Donner: 60 feet - newly timbered.

   (b) Linear feet of drifts and crosscuts:

   McCarty: 10 feet of crosscuts.

   Donner: None.

   (c) Linear feet of tunnels or adits: None.

   (d) Linear feet of other mine openings:

   McCarty: 110 ft. vertical shaft, newly timbered.

   Donner: None.

(e) Flood conditions and pumping problems:

McCarty: The McCarty Mine is flooded, but the water is kept down by the use of one Ingersoll-Rand No. 35 sump pump having a capacity of 90 gallons per minute with a 100-foot head when operated by compressed air at 100 pounds pressure.

Donner: No water problem as of present depth.

3. Location, etc.

(a) Distance and direction from nearest town and shipping point:

McCarty: 20 miles Northeast of Farmington, California (shipping point of high grade or milled concentrate), one mile Southeast of Copperopolis (nearest town).

Donner: 20 miles North Northeast of Farmington, Calif. (shipping point of high grade or milled concentrate), 9½ miles Northwest of Copperopolis (nearest town).

(b) Mining district:

McCarty: Calaveras.

Donner: Calaveras.

(c) Township, Section, Range:

McCarty: Mineral Entry No. 13, Lot 37, Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres, more or less.

Donner: Southwest 1/4 of Section 33, Township 2 North, Range 11 East, M.D.B.&M.

(d) County, State:

McCarty and Donner: County of Calaveras, State of California.

4. (a) Operation:

McCarty: Prospect shaft was sunk to a depth of 55 feet with a crosscut of approximately 10 feet at the bottom. Operations on the McCarty were suspended April 25, 1951 pending action on this application.

Donner: The Donner property is being operated as an exploration project, employing six men in the process of sinking vertical shaft.

All operations to date have been carried on by Ronnie B. Smith individually. Mr. Smith is the chief stockholder in applicant Sierra Copper Company and proposes to transfer all operations to applicant, together with an assignment of the mining leases.

(b) The McCarty property is being operated under a lease and bond for fee simple title. The Donner property is being operated under a lease. Both leases stand in the name of Ronnie B. Smith individually, chief stockholder of applicant, but will be assigned to applicant upon approval of this application.

5. Number of years in production:

The present exploration project has been underway approximately five months. As to prior production, see attached engineering reports by Roy G. Mead, consulting engineer, of Glendale, California. It is estimated that actual production will begin 100 days after approval of the exploration project.

6. Experience of operators:

(a) The applicant is a newly-formed corporation.

(b) The persons who will manage the project and their experience are as follows:

Mr. Ronnie B. Smith will be the president of the company and will have charge of the overall supervision of the work. Mr. Smith is a chemical engineer with wide and varied experience in the oil industry, both in the producing and refining phases thereof, and has taken the leading part in the organization and development of several successful business enterprises.

Mr. Roy G. Mead will be vice-president and general manager of the applicant company, and will be in active charge of the mining and milling operations, and will be responsible for the technical aspect of the enterprise. Mr. Mead is a licensed petroleum engineer and geologist with many years of experience in the State of California. A brief outline of Mr. Mead's background and experience is to be found in the publication "Who's Who in Engineering", Sixth Edition, page 1342, which we quote as follows:

"Mead, Roy G., Cons.Engr. and Geol., 614 So. Hope St., Los Angeles, Calif.; res. 920 Burchett St., Glendale, Calif. Cons. Engr. and Geol.; b. Garfield, Colo., July 22, 1881; s. Frank W. and Matilda Gibbons Mead; edn. Pub. Sch., Aspen, Colo., H.S., Ariz.; Univ. of Ariz., B.S.; Sigma Gamma Epsilon; m. Cora Colvin, Apr. 6, 1908, Los Angeles, Calif.; ch: Roy

Gibbons, Jr. and Norma Pearl; 1906-7 Supt. Kelvin Reduction Co.; 1907-08, Cons. work, Los Angeles, Calif.; 1909-10, Manager Amer. Mining & Development Co.; 1910-12, Asst. Engr., City Engrs. Office, Los Angeles, Calif.; 1912-16, Min. Engr., U. S. General Land Office, Washington, D. C.; 1916-18, Supt., Troy-Arizona Copper Co.; 1918-19, Capt. Engrs., U.S.A.; Captain Engrs., Reserve Corps, 1919-33; 1919-21, Cons. work, Los Angeles, Calif.; 1921-23, Asst. Geol., Associated Oil Co.; 1923-47, Cons. Engr. and Geol., Los Angeles, Calif., General practice; mem. A.I.M.E.; Amer. Assoc. of Petro. Geologists. Regd. Civil Engr., State of Calif.; A.A.S.; University Club; Past Master Euclid Lodge No. 519, F. & A. M.; Los Angeles Consistory."

Mr. C. B. Wood of Copperopolis, California, will be the assistant general manager, immediately under Mr. Mead. Mr. Wood is a resident of Copperopolis, California, and has had wide practical experience in mining and in mill operations and is thoroughly familiar with the Mountain King Mill and the McCarty and Donner Mines.

When actual production is begun, Mr. Frank Lane of Copperopolis, California, will be foreman of the Mountain King Mill, and in immediate charge of the milling operations. Mr. Lane has had thirty years' of experience in the copper and zinc mills of this area of California, including one year when he was foreman of the Mountain King Mill during its operations carried on during the last emergency.

Mr. Howard Castle will be mine foreman, directly in charge of all mining operations. Mr. Castle is a miner of twenty years' experience, most of which was spent in the area immediately around Copperopolis. He worked for two years in the North Keystone Mine, operated during the last emergency, and it is understood that in excess of 10,000,000 pounds of copper was recovered or mined from the North Keystone Mine during that period and milled in the Mountain King Mill, which is proposed for operation by this applicant at the present time.

While the operation of the Mountain King Mill will be under the direct supervision of Mr. Lane, above mentioned, The American Cynamide Company, which has agreed to furnish the chemical reagents for use in connection with the mill, has volunteered to furnish a qualified chemical expert, at applicant's expense, to supervise and assist applicant in the use of chemical reagents in the mill's operations in order that the most efficient rate of recovery may be obtained.

7. History:

See attached reports by Roy G. Mead.

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)
Ronnie B. Smith, Tower Petroleum Bldg., Dallas, Tex.	President & Director	None	450,000	90%		None	
Roy G. Mead, Glendale, Calif.	Vice-Pres. & Director	None	50,000	5%		None	
R. C. Bergen, Los Angeles, Calif.	Secy-Treas. & D	None	--	--		----	
C. B. Wood, Copperopolis, Calif.	Stock-holder	None	--	5%		None	
	Total	----	x x x x x	100%		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	$ 13,500	$ To be	$ 1.50	None	None
Preferred stock	$100,000	$ issued*	$100.00	None	None

~~*Indicate period covered.~~ *To be issued contemporaneously with approval of this application. To date, approximately $35,000 has been expended by individuals in addition to personal services.

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.)	- - - -	- - -	NONE	- - - - - -	- - - -
2. Quantity of product processed (specify unit of measure and type of process)			"		
3. Quantity and grade of product sold or shipped (specify units of measure)			"		

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. After completion of exploration, estimated monthly production -- 4500 tons from McCarty, 4500 tons from Donner.

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 REPORTS OF ROY G. MEAD ATTACHED.

16—68792-1

Form MF-100
(March 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 _____

Name and address of applicant

Date _____

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) Necessity Certificate pursuant to the provisions of Sec. 124-A (Amortization Deduction) of Internal Revenue Code, 1950, (5) priorities or allocation of mining equipment, and maintenance, repair and operating supplies, and (6) 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?
   (*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:
   (*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.
   (*b*) Mining district.
   (*c*) Township, Section, Range.
   (*d*) County, State.
4. (*a*) State whether or not property is now in operation, and if in operation, by whom operated.
   (*b*) Are you operating this property as:
   - ☐ Owner.
   - ☐ Lessee.
   - ☐ Contractor.
5. Number of years in production _____

   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.
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.
   (*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.

SEE REPORTS OF ROY G. MEAD ATTACHED.

(*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)		SEE MEAD REPORTS.			
Indicated (probable)		SEE MEAD REPORTS.			

(*c*) If placer: NOT APPLICABLE.

(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.

14. Water Supply:

State source and quantity of water available for operations and whether sufficient for all seasons of year.

15. Power:

State amount of power used, rate per hour, and source thereof.

16. Labor:

State number and classes (miners, muckers, millmen, etc.) of men employed during a recent representative payroll period.

17. Equipment and Facilities:

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.

SEE LAST PAGE.

(Name of company) By (Signature of authorized official)

(Date) (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

13. Access Roads:

McCarty: There are hard surface roads from McCarty to Mountain King Mill, a distance of six miles by surfaced road, with no grades. Concentrates to be hauled to Farmington, California, a distance of 20 miles over hard surface roads.

Donner: The Donner property is approximately 11 miles by road from the Mountain King Mill, reached through Copperopolis via Highway 4 and Quail Hill Mine Road. Approximately one mile of road will be necessary to reach the Donner property from the Quail Hill Mine Road, over terrain which is not difficult.

Copperopolis and Angels Camp are supply and residence points. Angels Camp is approximately 11 miles from McCarty property over good road, and 17 miles from the Donner property. McCarty is one mile from Copperopolis over good road, and Donner is 7 miles from Copperopolis over good road except for one mile to be constructed.

14. Water Supply:

In addition to water in the mine with respect to the McCarty, there is an all-year-round fresh water stream running across the property.

As to the Donner, there is an all-year-round fresh water stream approximately 1½ miles from this lease, from which it may be necessary to pipe water sometime in the future. In addition, there is water on an old shaft in the northern extremeties of the Donner.

15. Power:

At present, there is a gasoline-driven compressor being used on the Donner property. When operations are resumed on the McCarty property, it is proposed to tie in to the Pacific Gas & Electric line, which is a distance of about 3/4 of a mile from the boundaries of the lease. The rate per hour is undetermined, as well as the cost of the line and transformers.

16. Labor:

Miners - 3; Muckers - 2; Hoist men - 2; Foreman - 1; Engineer - 1.

The above men have recently been moved from the McCarty property to the Donner property. In addition, one electrician and one millwright have been employed since April 23, 1951, putting the Mountain King Mill in proper condition.

17. Equipment and Facilities:

For present equipment on the property, including buildings, see attached reports by Roy G. Mead.

Major pieces of equipment now owned or controlled and in serviceable condition:

1 - hoist
1 - small tugger hoist
1 - Ingersoll-Rand No. 35 sump pump
Miscellaneous hand tools

18. Particular conditions and circumstances:

See Roy G. Mead reports.

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.

SIERRA COPPER COMPANY
(Name of company)

By [signature]
(Signature of authorized official)

May 1, 1951
(Date)

President
(Title)

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. _____

Date received _____

Participation _____

Sierra Copper Company
21st Floor Tower Petroleum Bldg.
Dallas, Texas

Name and address of applicant

Date May 1, 1951

FILL IN THIS BLOCK

Date of application May 1, 1951

Estimated cost $79,183.00

Mineral or metal Copper

Percentage of Government participation 50%

Location of mine: Calaveras Mining District, Calaveras County, California.

Date of filing MF-100 May 1, 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?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

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)?

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

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

*11. State the present and former names of the property, if any.

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

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

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

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

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*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?

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

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

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

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

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

---------- By ----------
(Name of company) **SEE LAST PAGE.** (Signature of authorized official)

---------- ----------
(Date) (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 APPLICANT

1. See MF-100.

2. See MF-100.

3. See MF-100.

4. See MF-100.

5. See MF-100.

6. Not owner.

7. Leases attached.

8. Applicant corporation has not actually begun business as yet, although it is authorized to do so and duly qualified in both California and Texas. All operations to date have been carried on through Ronnie B. Smith Mining Account and under the direct supervision of Roy G. Mead, and approximately $35,000 has been expended on the project to date.

9. Applicant is prepared to invest approximately $40,000 in the project. This amount is sufficient to pay applicant's part of the cost of the project in accordance with the regulations on Government participation.

THE PROPERTY

10. See attached reports of Roy G. Mead.

11. See MF-100.

12. See MF-100.

13. See MF-100.

14. See MF-100.

15. It is proposed to mill and concentrate the ore from both the McCarty and the Donner properties at the Mountain King Mill, which is located in the Copperopolis Mining District. The mill is approximately 11 miles by road from the Donner property, with one mile of such road yet to be constructed. The McCarty property is approximately 6 miles, by surfaced road with no grade, from the mill.

    The Mountain King Mill is presently under lease to Mr. Ronnie B. Smith, which lease will be assigned to applicant upon approval of application. It consists of three ball mills, flotation cells and filters, completely powered with electric motors, and has a capacity of approximately

600 tons of ore per day. A large reservoir of water, adjacent to the mill, is also included in the lease. The concentrate will be hauled by truck to Farmington, California, a distance of approximately 20 miles, from which it will be shipped by rail to the smelter at Salt Lake City, Utah.

16. History: See attached reports of Roy G. Mead.

17. Production: Mine not in production.

18. Ore or mineral reserves: See Roy G. Mead reports.

19. Conditions or circumstances not brought out by foregoing: See Roy G. Mead reports.

THE EXPLORATION

20. Exploration will be conducted for Copper and Copper deposits in the form of sulfides, carbonates, and Chalcopyrite.

21. It is proposed to deepen each shaft on each of the properties to 100 feet and to crosscut or drift from the bottom approximately another 100 feet in each mine. In addition, it is recommended that a sufficient number of core holes be drilled to a depth of 150 feet to determine the extent of underlying ore bodies at this depth. Mr. Mead, our engineer, estimates that approximately 100 days will be required after approval of application to perform the above work.

22. Geological basis of the project: See Roy G. Mead reports.

THE REQUIREMENTS AND COSTS

23. Itemized statement of estimated requirements and costs:

McCarty Operations

		Total for 100 days of Operation
(a)	3 miners at $12.80 per day, 2 muckers $11.40 per day, 2 hoist men $11.40 per day	$ 8,400.00
(b)	1 foreman at $400.00 per month, 1 engineer at $500.00 per month	3,000.00
(c)	Cost of repairs - None	
(d)	Hoist house $1200.00, head frame $2500.00, blacksmith shop $1000.00	4,700.00

(e)	Hoist electric motor driven $4500.00, mine skip and cable $700.00, air compressor electric motor driven $4000.00, air drills etc. $750.00, water pump $800.00	$ 9,950.00
(f)	Trucks $300.00 per month	1,000.00
(g)	Core drilling equipment $5.50 per foot of hole, including labor, etc.	21,600.00
(h)	Small tools, shovels, picks, powder, etc.	1,500.00
(i)	Electric power $300.00 per month	1,000.00
		$51,150.00

Donner Operations

(a)	3 miners at $12.80 per day, 2 muckers at $11.40 per day, 2 hoist men $11.40 per day	$ 8,400.00
(b)	1 foreman at $400.00 per month, engineer in charge $500.00 per month	3,000.00
(c)	Cost of repairs - None	
(d)	Change room and heating equipment $1500.00, hoist house $1500.00, blacksmith shop $1200	4,200.00
(e)	Gasoline motor hoist $2500.00, gasoline driven air compressor $3000.00, mine skip and cable $700.00, air drills $750.00, water pump for water supply $250.00, mine pump $400.00	7,600.00
(f)	~~Pick-up~~ Ford trucks $2500.00	2,500.00
(g)	Rental value of equipment, etc. - None	
(h)	Small tools, shovels, picks, powder, etc.	1,500.00
(i)	Gasoline for power $250.00 per month	833.00
		$28,033.00

24. Time schedule for the project is estimated for completion within 100 days after approval. It is anticipated that approximately $79,183.00 will be spent.

CERTIFICATION

The undersigned company, and the official executing this

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

SIERRA COPPER COMPANY (Name of Company)	By Ronnie B. Smith (Ronnie B. Smith)
May 1, 1951 (Date)	President (Title)

MINING LEASE AND OPTION TO BUY

CALAVERAS COPPER MINE

-oOo-

THIS AGREEMENT, made and entered into this 2nd day of ~~September~~ October, 1950, by and between JACKSON D. McCARTY CO., a California Corporation, having its principal office in Copperopolis, California, hereinafter called "Lessor," and CHARLES B. WOOD, General Delivery, Copperopolis, California, hereinafter called "Lessee,"

W I T N E S S E T H:

That for and in consideration of the sum of TEN ($10.00) DOLLARS, paid by Lessee to Lessor, receipt of which is hereby acknowledged, and in consideration of the mutual covenants herein contained, it is agreed by and between the parties hereto as follows, to-wit:

1. The term of this agreement shall commence on the 1st day of November, 1950, and continue for ten (10) years thereafter unless sooner terminated in one of the ways hereinafter provided.

2. Lessor does hereby grant to Lessee for the term hereof the exclusive right to carry on underground mining operations on all of the properties described in Exhibit "A" attached hereto and made a part hereof and on the surface of such of said properties as Lessee may select, with the right to extract and remove ores therefrom upon the terms and conditions hereinafter set forth.

3. Lessor does also hereby grant unto the Lessee the exclusive right and privilege of purchasing, during the term hereof, the properties described in Exhibit "A" attached hereto, upon the terms and conditions hereinafter set forth.

4. The total purchase price of said underground mining rights and the right to use the surface of these lands as hereinafter set forth, shall be the sum of One Hundred Fifty Thousand Dollars ($150,000.00), without interest, all of which said purchase price shall be payable as hereinafter set forth.

5. Lessee agrees to payLessor as rental and royalties and as payments upon the purchase price of said lands, percentage royalty payments as follows:

(a) Lessee hereunder agrees that beginning January 1, 1951, he shall, during every month during the term of this Agreement, diligently apply himself in the working and operating of said property and shall employ not less than one hundred and twenty (120) eight hour one man working shifts per month for each and every month thereafter during the term hereof.

(b) On any and all ores extracted from the properties described in Exhibit "A" attached hereto, the Lessee shall pay the Lessor a royalty of five (5) per cent of the net mint or smelter returns received from the sale of bullion or concentrates recovered from said ores until the balance of said purchase price has been paid in full. Said percentage royalties shall be paid within ten (10) days after the receipt of the settlement for such ores or concentrates.

(c) Lessee shall have the right to use any portion of the surface of the demised premises listed in Exhibit "A" necessary in its mining operations, including the operation of open pits, construction of surface plant, storage of dump and waste piles, ore piles, storage of mill tailings, storage of water, rights of way for power lines, water supply and roads; reserving to the Lessor, however, all grazing rights on the land not so used by Lessee.

6. Lessee agrees that during all the time he is entitled to the possession of any of the premises covered hereby he will:

(a) Enter upon the premises and work the same in a proper, skillful and minerlike fashion and in manner necessary to good and economical mining so as to take out the greatest amount of ore possible, with due regard tothe safety, preservation and development of said mines as workable mines.

(b) Well and sufficiently timber all working in the demised premises where proper in accordance with good mining and to maintain such timbering.

(c) Permit the agents or representatives of the Lessor to have access to all workings upon the premises for the purpose of sampling and testing the value of any and all ores that may be disclosed in any part of the workings upon said premises or which are lying upon the dumps or which are being mined and milled and

for the purpose of inspection and survey, and to inspect the milling plant and the operations thereof and all metallurgical data and information, including way bills, shipping receipts and smelter or reduction returns.

(d) Promptly pay for all labor, material and supplies used and employed in connection with its operations, either mining or milling.

(e) Keep said premises, and the whole thereof, free and clear of any and all liens and encumbrances.

(f) Notify the Lessor of all shipments of ores or concentrates, giving the estimated tonnage of value thereof, and the name of the intended purchaser and to provide that copies of all smelter returns shall be delivered to the Lessor.

(g) Pay all taxes assessed against said underground mining rights and against all surface lands occupied by Lessee, and all bullion taxes levied against the product or output of said mines during the life of this lease.

(h) In the event the Lessee sinks any prospect holes, shafts, cuts or other excavations and then abandons the same, or where the same are not being used by the Lessee, the Lessee shall fence such holes, shafts, cuts or other excavations, so as to protect against loss or injury to livestock grazing on said lands. Lessee shall also fence and maintain fences around any lands where slimes are deposited or where poisonous materials are placed or permitted to remain or settle on said lands so as to protect against loss or injury to livestock grazing on the lands of Lessor.

(i) Lessor shallhave the right to post andmaintain on any of said lands, notices of non-liability, so as to protect Lessor and said lands from any claim of laborers or materialmen performing labor upon or supplying materials to any improvement thereon, or as against any claims for injury to employees of Lessee, ariding out of any work being performed upon said property.

7. It is understood and agreed that any and all royalties and/or payments on account of the purchase price payable to the Lessor hereunder shall be made by the Lessee paying the same to the Bank of America, Angels Branch, Angels Camp, California, which bank is hereby appointed the agent of the Lessor for the purpose of receiving such royalties and/or payments, any and all payments made to it shall constitute a good and sufficient payment to the Lessor and there shall be no obligation on the Lessee to see to the division or application of said payments.

8. Lessor hereby warrants and agrees to defend the title to the lands described in Exhibit "A" hereto and agrees that the Lessee, at his option, may pay and discharge any taxes, mortgages or other liens existing, levied or assessed against said premises, and in the event he exercises such option, he will be subrogated to the rights of any holder or holders thereof and may reimburse himself from any royalties accruing hereunder for any payments made by him in discharging any such mortgage, tax or lien, save and except any which under the terms hereof is payable by him, it being understood and agreed that any amount so taken by Lessee to reimburse himself as aforesaid, shall be treated and considered as a payment on the purchase price to be applied on the last installment or installments thereof falling due hereunder.

9. Lessor agrees that at any time after Twenty Thousand Dollars ($20,000.00) shall have been paid by the Lessee hereunder, it will upon demand furnish to the Lessee, a policy of title insurance in the sum of One Hundred Fifty Thousand Dollars ($150,000.00), issued by a company satisfactory to Lessee, insuring the title of Lessor or Lessee hereunder to all of the patented properties described in Exhibit "A" hereto to be free and clear of any and all liens, encumbrances or defects, save and except those heretofore or hereafter approved by Lessee. Lessor also agrees that Lessee may, at his election, after Twenty Thousand Dollars ($20,000.00) has been paid on the purchase price, instead of demanding a

policy of title insurance from Lessor, as aforesaid, order such a policy of title insurance from such company as he may select, in which event Lessor agrees to pay the title company its charges therefor. Lessor further agrees that at the time the first payment referred to in subdivision (b) of paragraph numbered 5 hereof is made, it will deposit with the Bank of America, Angels Branch, Angels Camp, California, a deed or deeds to the real properties described in Exhibit "A" attached hereto, duly executed and acknowledged in favor of Lessee with instructions to deliver such deed to Lessee when the payments provided for in said paragraph numbered 5 hereof shall have been fully made in accordance with the terms hereof.

10. It is understood and agreed that this is not a firm commitment on the part of the Lessee to occupy the said premises or to carry on mining operations thereof for the term herein provided or to purchase the properties described in Exhibit "A" hereto, and the Lessee may, at his option, terminate this agreement and surrender this lease and option at any time (either before or after he has commenced making payments provided to be paid in paragraph numbered 5 hereof) by giving the Lessor ten (10) days' written notice of his intention so to do, in which event the Lessee shall stand released from all obligations hereunder except pecuniary obligations which may have accrued prior to such termination. In the event that the Lessee does abandon this lease, as herein set forth, or in the event the said Lessee should forfeit his right to continue under this lease, as herein set forth, the Lessee agrees that he will immediately execute and deliver to Lessor a quitclaim deed of said premises, so as to clear the record of any cloud caused by the recording of this lease, and in the event the Lessee should fail or refuse to so deliver such quitclaim deed, he will be responsible to the Lessor for allcosts, damages and attorney's fees incurred in any proceedings taken by the Lessor to clear the title from any cloud caused by this lease or the recording thereof.

11. It is agreed that any notice required hereunder may be served personally upon the person for whom it is intended or may be by mailing the same to the party to whom it is intended, by United States Registered mail, special delivery, addressed to them respectively as follows:

> The Lessor at Copperopolis, Calaveras County, California, or such other place as it may in writing designate.
>
> The Lessee at General Delivery, Copperopolis, California, or such other place as he may in writing designate. Provided, however, that in the event of Lessee assigning his rights under this contract, he will notify the Lessor of the place and person or persons who shall be served with notice.

Five (5) days after the date of mailing, as shown by the receipt of the mailing, shall be deemed the date of receipt of notice.

12. Time is expressly made of the essence of this agreement and should Lessee fail to make any percentage royalty payment herein specified, or fail to keep or perform any of the covenants herein contained by him to be kept and performed, and fail to remedy such default within the time hereinafter provided, this agreement shall, at the option of the Lessor, terminate and Lessor may in such event re-enter upon said premises, repossess the same as in its former estate, and remove all persons therefrom, using necessary force so to do. In any such event, all sums of money theretofore paid as royalty or as installments of the purchase price shall be retained by the Lessor as rental and as liquidated damages for the nonfulfillment of this agreement. It is understood and agreed, however, that in the event the Lessee delay in making any payment required to be made hereunder or in performing any work or act required to be performed hereunder is caused by strikes, shortage of labor, shortage of materials, lockouts, riots, storms, acts of God, war, governmental regulations or restrictions or other casualty or cause beyond the control of the Lessee, the Lessee is hereby granted an extension of time for making such payment or performing such act or work equivalent to the time he

was so delayed. In the event that the Lessor determines that the Lessee has failed to make any payment due hereunder or has committed any act or has omitted doing any act entitling the Lessor to cancel this agreement and forfeit all rights of Lessee hereunder, written notice of such alleged nonpayment or of such alleged act or acts of omission or commission shall be given Lessee who shall have thirty (30) days from the receipt of such notice to cure the default alleged.

13. In the event of the termination or cancellation of this lease and option, the Lessee shall have the right to remove within sixty (60) days after such termination or cancellation, all ores broken and all concentrate products thereof, and may remove any and all equipment, apparatus, machinery and personal property of every kind or character brought or placed upon the properties by the Lessee during the term hereof, whether the same shall have been affixed to the realty or not. If not so removed within such sixty (60) days then and in that event, all of such property shall be and become the property of the Lessors.

14. This agreement shall be binding upon and shall inure to the benefit of the successors and assigns of the respective parties hereto.

15. It is mutually understood and agreed that the obligation to perform hereunder is condition upon a title search being made to the property and it appearing therefrom that title thereto is vested in the Jackson D. McCarty Company. Such title search shall be made forthwith and if such title search shows that the title to said property is not vested in the Jackson D. McCarty Company, that then and in that event, this Agreement shall be null and void. Such title search shall be commenced and completed before January 1, 1951.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first hereinabove written.

JACKSON D. MC CARTY CO.,

BY P. L. McCarty Jr. President.

BY Agnes McCarty Erion Secretary.

Lessors.

Lessee.

EXHIBIT "A"

That certain mining claim known as the "CALAVERAS COPPER MINE" located in the Copperopolis School District in the County of Calaveras, State of California, being more particularly described as Mineral Entry #13, Lot 37 in Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres more or less.

STATE OF CALIFORNIA)
SS
COUNTY OF SAN JOAQUIN)

On this 2 day of ~~September~~ October, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared G. L. McCarty and _____, known to me to be the President and Secretary, respectively, of Jackson D. McCarty Co., a corporation, that executed the within instrument and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the County and State aforesaid, the day and year in this certificate first above written.

Notary Public in and for the County of San Joaquin, State of California

My Commission Expires December 17, 1950

STATE OF CALIFORNIA)
SS
COUNTY OF SAN JOAQUIN)

On this _____ day of September, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared Charles B. Wood, personally known to me to the person described in and whose name is subscribed to the foregoing instrument and he duly acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand affixed my official seal at my office in the County and State aforesaid the day and year in this certificate first above written.

Notary Public in and for the County of San Joaquin, State of California

My Commission Expires _____

ASSIGNMENT

THIS ASSIGNMENT, made and entered into this 1st day of November, 1950, by and between CHARLES B. WOOD and CELESTA M. WOOD, his wife, (hereinafter collectively referred to as "Assignors") and RONNIE B. SMITH (hereinafter referred to as "Assignee"),

W I T N E S S E T H:

WHEREAS, Assignors are the owners and holders of the rights and interests created in their favor by virtue of that certain mining lease and option to buy dated October 2, 1950, by and between Jackson D. McCarty Co., a California corporation, as Lessor, and Charles B. Wood, as Lessee, recorded in the County of Calaveras, State of California on November 6, 1950 in Book 64, Page 1 of 4 (which mining lease and option to buy is hereinafter referred to as said "Lease-Option Agreement"), and

WHEREAS, Assignors desire to assign to Assignee and Assignee desires to acquire the Lessee's interest under said Lease-Option Agreement and the leasehold estate created thereby,

NOW, THEREFORE, in consideration of the sum of ten dollars ($10.00) and other good and valuable consideration, receipt and adequacy of which is hereby acknowledged, Assignors do hereby sell, convey, assign, transfer and set over unto Assignee, his successors and

assigns, said Lease-Option Agreement, the leasehold estate created thereby and all other rights and interests vested in Assignors, or either of them, by the terms and provisions thereof. The land demised and affected by said Lease-Option Agreement and which is the subject of this assignment, is situated in the County of Calaveras, State of California, and is more particularly described as follows:

> That certain mining claim known as the "CALAVERAS COPPER MINE" located in the Copperopolis School District in the County of Calaveras, State of California, being more particularly described as Mineral Entry #13, Lot 37 in Sections 2 and 3, Township 1 North, Range 12 East, containing 41.31 acres more or less.

This assignment is subject to the following terms and provisions:

1. Assignee shall have the right at any time and from time to time to quitclaim or surrender all or any portion of the rights and interests covered by said Lease-Option Agreement. Provided, however, that if Assignee at any time desires to quitclaim or surrender said rights or interests, he shall first notify Assignors in writing and Assignors may elect within a period of five days after the giving of said notice to accept a reassignment of said Lease-Option Agreement and all rights and interest thereunder. In the event that Assignors shall fail to notify Assignee in writing within said five day period that Assignors elect to accept such reassignment, Assignee may quitclaim or surrender said Lease-Option Agreement and all rights and interests thereunder direct to the Lessor. In the event that Assignors shall elect

to accept a reassignment of said Lease-Option Agreement, Assignors shall, from and after the date of such election, assume and perform each and all of the terms, covenants and conditions of said Lease-Option Agreement and shall indemnify and hold Assignee harmless from any and all further obligations and liabilities pursuant to or connected with said Lease-Option Agreement or any rights, interests or obligations thereunder.

2. Assignors warrant and represent that said Lease-Option Agreement is a valid subsisting agreement in full force and effect according to its terms, and that the validity of said Lease-Option Agreement is not subject to attack for any reason or by the Lessor or anyone claiming by or through the Lessor, and that there are no defenses to the enforcement of said Lease-Option Agreement which might impair or impede the enjoyment by Assignee of his rights and interests thereunder. Assignors further warrant and represent that said Lease-Option Agreement and the land and other interests covered thereby are free and clear of any royalties, reservations, liens or encumbrances made or suffered by Assignors. Assignors hereby agree to indemnify and hold Assignee harmless of and from any loss, cost or expense incurred by reason of the breach of any of the foregoing warranties.

3. Any notice required or permitted to be given hereunder may be given by registered mail addressed

to Assignors or Assignee, as the case may be, at the following address or at such other address as the respective parties may from time to time designate in writing:

To Assignors at: Box 43, Copperopolis, California;

To Assignee at: c/o Petroleum Reserve Corporation, Tower Petroleum Building, Dallas, Texas.

Any notice so given shall be deemed to be effective for all purposes at the expiration of forty-eight hours after deposit thereof in any United States Post Office within the United States with first class postage and registry fee therefor fully paid.

4. The terms "Assignors" and "Assignee" wherever used herein shall include, and all the terms and provisions hereof shall bind and inure to the benefit of, the legal representatives, successors and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this assignment the day and year first above written.

Charles B. Wood

Charles B. Wood

Celeste M. Wood

Celesta M. Wood
"Assignors"

Ronnie B. Smith

Ronnie B. Smith
"Assignee"

STATE OF CALIFORNIA)
) SS:
County of _____)

On this ____ day of _____, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared CHARLES B. WOOD and CELESTA M. WOOD, personally known to me to be the persons described in and whose names are subscribed to the foregoing instrument, and they duly acknowledged to me that they executed the same.

WITNESS my hand and official seal.

_____
Notary Public in and for said County and State.

STATE OF _____)
) SS:
County of _____)

On this ___ day of _____, 1950, before me, the undersigned, a Notary Public in and for said County and State, personally appeared RONNIE B. SMITH, personally known to me to be the person described in and whose name is subscribed to the foregoing instrument, and that he duly acknowledged to me that he executed the same.

WITNESS my hand and official seal.

_____
Notary Public in and for said
County and State.

Note

In connection with the foregoing McCarty Lease, the present holder, Mr. Ronnie B. Smith, has agreed that prior to assignment to Sierra Copper Company, he will assign and convey and vest in Charles B. Wood, Roy G. Mead and M. Carroll Smith, each, a one and one-half per cent (1½%) royalty interest, payable out of the gross proceeds of ores and/or minerals mined and milled from the lands concerned.

MINING LEASE

THIS MINING LEASE made on this 29 day of March, 1951, by and between HERMAN L. DONNER, of Milton, California, as lessor, and RONNIE B. SMITH, of 2106 Tower Petroleum Building, Dallas, Texas, as lessee,

WITNESSETH:

That lessor in consideration of the sum of Twenty Five Hundred Dollars ($2500) paid upon the execution hereof, the receipt whereof is hereby acknowledged, and the payments provided for herein and the faithful performance of the terms, conditions, covenants and agreements herein agreed to be kept and performed by lessee, does hereby lease and let unto said lessee for the term hereinafter specified, and for the sole purpose of prospecting, developing, mining and working the rock and ores therein for the gold, copper and other precious metals therein contained, as hereinafter provided, all that certain real property situated in Secs. 33 and 34, T. 2 N., R. 11 E., M. D. B. & M., in Calaveras County, California, and particularly described as follows:

> Beginning at the SW cor. of the SE 1/4 of said Sec. 33, thence running northerly along the westerly boundary line of the E½ of said Sec. 33 to a point thereon formed by the intersection thereof with the northerly projection of the easterly line (being the 2nd course of the description therein) of that certain parcel of land described in and conveyed by the deed from George Callahan, et al., to Herman Lee Donner, dated July 24, 1942, and recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County Records; thence S. 46°54' E. to a point in the southerly boundary line of the SW 1/4 of SW 1/4 of said Sec. 34, being the point thereon formed by the intersection thereof with the southerly projection of the easterly line of said above mentioned parcel of land described in and conveyed by said above mentioned deed recorded on August 7, 1942, in Book 24 of Official Records at page 214, et seq., Calaveras County records; thence westerly along the southerly boundary line of said Secs. 33 and 34 to the point of commencement, and containing 120 acres, more or less, inclusive of the parcel of land containing 40.230 acres, more or less, described in the above mentioned deed recorded in Book 24 of Official Records at page 214, et seq., Calaveras County Records.
>
> Together with all leads, lodes and veins of quartz and other rock in place that lie or apex therein and all

the dips, spurs and angles thereof, including the right to follow the same extralaterally on their downward course into and under the adjoining premises as mentioned and provided in the deed to Herman Lee Donner recorded in Book 36 of Official Records at pages 377 & 378, Calaveras County Records.

Also Together with all rights of ingress and egress owned by lessor over adjoining lands.

TO HAVE AND TO HOLD the said premises unto said lessee for the term of fifteen (15) years from the date hereof, so long as said lessee shall fully and faithfully perform each and all of the terms, conditions, covenants and agreements hereinafter contained, it being agreed, however, that in the event said lessee shall have fully and faithfully performed each and all of the terms, conditions, covenants and agreements herein contained during the original term hereof he shall have and is hereby given the right and option of renewing this mining lease and agreement for an additional period of fifteen (15) years under the same terms, conditions, covenants and agreements as herein set forth excepting that there shall be no option for any renewal or extension of the said term thereof.

Said parties hereto do hereby mutually covenant, promise and agree as follows, to-wit:

1. Lessee shall have the exclusive right during the term of this lease of entering into and upon the lands hereby leased for the purposes above mentioned with the right of installing machinery and mining equipment and erecting buildings and improvements thereon as may be deemed expedient by lessee for exercising the rights hereunder given.

2. Lessee shall have the right to mill or otherwise reduce the ores from said premises or to ship the same to some responsible smelting company made known to lessor for the purpose of obtaining the copper, gold and other precious metals and values therefrom, the proceeds as soon as determined to be divided and paid to the respective parties hereto in the manner as follows:

(a) Ten per cent (10%) of the proceeds from copper and all precious metals recovered from all unmilled ores shipped from mine to smelter for treatment shall be paid to lessor and ninety per cent (90%) thereof to lessee;

(b) Eight per cent (8%) of the proceeds from copper and all precious metals recovered from the concentrates of milled ores shipped from mine to smelter for treatment shall be paid to lessor and ninety two per cent (92%) thereof to lessee; and

(c) In addition to the foregoing royalty payments provided in sub-paragraphs (a) and (b) above, lessee agrees to pay lessor fifty per cent (50%) of said proceeds from copper and all precious metals recovered from all ores and minerals shipped from said property and premises until such time as lessor has been paid the total sum of Twenty Five Hundred Dollars ($2500), whereupon all subsequent royalty payments shall be as above provided in sub-paragraphs (a) and (b) hereof.

In the payment and division of the proceeds as above mentioned it is agreed that the same shall be based upon smelter recovery with reductions only for the costs of railroad transportation and treatment of the ores at smelter and paid to lessor within fifteen (15) days after said proceeds are received from the smelter company with a duplicate receipt of the smelter company statement or report therewith.

3. Lessee agrees to pay to lessor, as a condition for keeping this agreement in force and effect, the sum of Three Hundred Dollars ($300) per month commencing six (6) months after the date of this lease and continuing monthly thereafter during the life of this lease, it being agreed, however, that if and when any royalties are paid as hereinabove provided, then lessee shall be entitled to credit said royalties against the monthly payment due under this paragraph for the month only in which said royalties are paid, but not to any of the prior or subsequent monthly payments made or payable under this paragraph.

4. Lessee agrees that all work of mining and developing said property under this lease shall be done in a good and workmanlike manner so as to develop said property as a mine for permanent future mining operations and that all of such work shall be without cost, charge or expense to lessor or to said property.

5. Lessee agrees to commence the active work of mining and developing said property within thirty (30) days from the date of this lease and to thereafter continuously mine and develop said property during the life of this lease by doing and performing monthly not less than 75 shifts of mining work, except when interrupted by act of God, action of the elements, strikes, riots, picketing or lockouts, and in such event reasonable diligence will be used to remove the cause of interruption and resume work at the earliest possible moment.

6. Lessee agrees to keep all workmen fully insured under and in compliance with the Workmen's Compensation Insurance and Safety Act of California during operations hereunder and to comply also with all other laws, rules and regulations, both State and Federal, governing mining operations and to conduct all work hereunder in accordance with good mining standards and methods and to promptly pay all bills for labor performed and for equipment, materials, supplies, electric energy, water and/or utility furnished on said lands during the term hereof and to keep said lands free and clear of all labor, mechanics' and other liens and to that end will keep posted on said lands where any work is being performed, or equipment, materials, supplies or utilities furnished, such notice or notices of non-responsibility on behalf of lessor as said lessor may desire and furnish to lessee, it being agreed, however, that lessor also reserves the right during the life of this lease to post and keep posted a notice or notices of non-responsibility of lessor and of said premises for any work or labor performed or for materials furnished to be used in connection with mining operations hereunder in or upon said premises.

7. It is agreed that at all times that lessee shall carry on mining operations during the life of this agreement said lessee shall keep full, true and correct books of account, statements,

vouchers, smelter returns and receipts at an office kept in Calaveras County, California, pertaining to mining operations conducted hereunder, and particularly showing the amount of ores reduced and the gross proceeds of copper, gold and other precious metals derived therefrom, and said lessor or his duly authorized agent shall at all reasonable times have free access to all parts and portions of said mining property and premises, real and personal, and to any mill or other reduction works where said ores are treated, crushed or reduced for the purpose of examination and inspection and shall be entitled to take samples of ores and to examine all books of account, statements, vouchers, smelter returns and receipts agreed to be kept as hereinabove provided.

8. It is agreed that lessee shall have sixty (60) days from and after the termination of this agreement without purchase within which to remove such mining machinery, tools, appliances and equipment as may hereafter be placed in and upon said mining property and premises by lessee, and in the event that said mining machinery, tools, appliances and equipment shall not be removed within said period of sixty (60) days then and in that event the same shall be deemed affixed to the realty and become a part thereof and belong to lessor, it being expressly agreed, however, that lessee shall not be entitled to exercise any of the rights of removal under this paragraph until all sums due and owing to lessor under any of the terms and provisions hereof shall have first been fully paid.

9. It is agreed that lessee, during the life of this agreement, shall pay all taxes, prior to delinquency, that shall be levied or become due and payable upon any improvements or personal property placed upon said mining property and premises by lessee and also upon said mining property and premises hereby leased, inclusive of the current taxes for 1951-52, which are now a lien upon said property but not yet assessed or levied.

10. It is agreed that the terms and conditions of this lease, insofar as the lessee shall be required to operate, mine and develop said premises is optional with said lessee, who shall have the right at any time to discontinue and cease said work hereunder whereupon said lessor shall be entitled to resume possession of said premises and real property, free and clear of any and all claims hereunder.

11. Lessee agrees that in the event he desires to terminate or abandon this lease as herein provided that he will execute and deliver to lessor a duly executed quitclaim deed fully releasing the property from the effects of this lease.

12. It is agreed that all of the surface and grazing rights of said property and premises for agricultural and stock raising purposes and uses are reserved and excluded from the operation of this lease but excepting, however, so much of the said surface thereof as is reasonably necessary and required for the erection and construction of surface plants for mining operations thereon, including the erection of all necessary buildings, mills, and other improvements for extracting and reducing the ores from said premises during the course of mining operations hereunder and for roads, power lines, telephone lines, pipe lines, ditches, water storage tanks or ponds, ore and waste dumps, tailings piles and other necessary appurtenances for mining operations hereunder.

13. It is agreed that during the life of this agreement lessee shall not damage any of the livestock grazing upon said property and premises hereby leased or any of the grazing and agricultural rights reserved and excepted from the operation of this lease as aforesaid and shall keep, at all times, all of the main workings and shafts and excavations, water storage tanks or ponds, ore and waste dumps, tailings piles and other mining appurtenances installed in and upon said premises for mining operations here-

under fenced off, or otherwise protected against livestock becoming injured thereby, and will conduct mining operations hereunder at all times with reasonable regard for and protection of the said grazing and agricultural rights of lessor which are being reserved and excluded from the operation of this lease and are now actually under lease to third parties.

14. It is agreed that all ores and rock obtained from said property and premises and the products or concentrates therefrom shall be kept separate and apart from those obtained from other properties by lessee in the shipment and treatment thereof for the purpose of obtaining the copper and all precious metals therefrom.

15. It is agreed that time is of the essence of this lease and of each and all of the payments to be made and of each and all of the terms, provisions and conditions hereof and in the event that lessee shall at any time fail to perform or carry out any of the terms, conditions and agreements herein imposed upon lessee or make any of the payments provided herein within thirty (30) days after notice in writing from first party to perform as herein provided and required, mailed to lessee at 2106 Tower Petroleum Building, Dallas, Texas, then this lease shall immediately cease, end and terminate at the option of lessor, and all further rights of said lessee in and to said premises hereunder shall at once and immediately become terminated and all payments theretofore made hereunder shall be retained by lessor as the property of lessor and said lessor shall have the right to immediately enter into and upon said premises and remove all persons therefrom and take immediate and exclusive possession thereof and any and all mining and other machinery and equipment of every kind or nature placed in and upon said property or used thereon during operations hereunder shall upon forfeiture, surrender, termination or abandonment of this mining lease, be removed within sixty (60) days

thereafter, as hereinabove provided, and if not so removed the same shall then be and become a fixture and part and parcel of the real property and belong to said lessor.

16. Lessor agrees to use his best efforts to assist lessee in acquiring rights of ingress and egress over adjoining properties which are not owned by him but lessor shall have no obligation to incur any cost or expense in connection therewith and if and when lessee shall acquire and/or construct, at his expense, an all-weather road to and from said property and premises then this paragraph shall be of no further force or effect except that lessee shall have continuing rights, during the life of this lease, to use such road at his risk and expense for the purposes herein provided, it being agreed, however, that any such road shall be and become appurtenant to and a part of the real property and premises of lessor.

17. It is agreed that lessee may assign or transfer this lease, but no assignment or transfer shall be valid or effective until lessor receives a notice in writing of the name and address of such assignee or transferee and, subject to the provisions of this paragraph, this lease shall inure to the benefit of and be binding upon and enforceable by the respective legal representatives, successors and assigns of the parties hereto.

DATED AND EXECUTED on the day and year first above written.

Herman L. Donner
Lessor

Ronnie B. Smith
Lessee

STATE OF CALIFORNIA)
) ss.
COUNTY OF CALAVERAS)

On this 4th day of ~~March~~ April, 1951, before me, the undersigned Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared HERMAN L. DONNER, known to me to be the person described in and whose name is subscribed to the within instrument, and he acknowledged to me that he executed the same.

WITNESS MY HAND AND OFFICIAL SEAL on the date in this certificate first above written.

Virgil M. Airola
Notary Public in and for the
County and State aforesaid. (SEAL)

~~STATE OF~~ CITY Washington)
) ss.
~~COUNTY OF~~ DISTRICT Columbia)

On this 29th day of March, 1951, before me, the undersigned Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared RONNIE B. SMITH, known to me to be the person described in and whose name is subscribed to the within instrument, and he acknowledged to me that he executed the same.

WITNESS MY HAND AND OFFICIAL SEAL on the date in this certificate first above written.

Mary Whiston
Notary Public in and for the
County and State aforesaid.

(SEAL)

My Commission Expires Aug. 31, 1953.

Note

In connection with the foregoing Donner lease, the present holder, Mr. Ronnie B. Smith, has agreed that prior to assignment to Sierra Copper Company, he will assign and convey and vest in Charles B. Wood, Roy G. Mead and M. Carroll Smith, each, a one per cent (1%) royalty interest, payable out of the gross proceeds of ores and/or minerals mined and milled from the lands concerned.

ROY G. MEAD
CONSULTING ENGINEER AND GEOLOGIST
LOS ANGELES

REPORT ON

"CALAVERAS COPPER MINE" OR SO-CALLED MCCARTY PROPERTY

The McCarty property consisting of two patented mining claims, embracing an area of 41.31 acres designated as Mineral Entry No. 13, Lot 37, situated in portions of the W½ of Section 2 and the NW¼ of Section 3, T. 1 N., R. 12 E., is located about one mile southeast of the town of Copperopolis, Calaveras County, California. Copperopolis is reached from Stockton over California State Highway No. 4, a distance of approximately 40 miles, or from Modesto to Farmington, a distance of 18 miles, thence easterly on Highway No. 4.

The topography of the area is characterized by a low southeasterly trending ridge with shallow ravines on the northerly and southerly flanks. The surface elevation ranges from 950 feet on the northwest to 900 feet on the southeast. The area under consideration is shown on the accompanying map, marked Plate I, a photostat of a portion of the following quadrangles - "Copperopolis", "Valley Springs", "San Andreas" and "Bachelor Valley".

A detailed study of the history, production and geology of the Copperopolis area was made by George R. Heyl, a geologist with the United States Geological Survey during the period 1942 to 1945. Mr. Heyl's report was published during the year 1948 in Bulletin No.144, entitled "Copper in California", by the Division of Mines, State of California. The following data relative to the history and geology is quoted from the aforesaid Bulletin No. 144.

> "Within and adjacent to the village of Copperopolis (pl. 1), in western Calaveras County, is a group of mines that have been among the significant contributors to the copper production of California since 1861. These include the North Keystone mine, which recently has been the second-largest copper producer in the state, and the Keystone-Union, a major producer in earlier years, representing a consolidation of the original Union and Keystone properties. Southeast of these is the Empire mine, a smaller development whose production record is not available, and two prospects known as the McCarty and the Calaveras mines. All of these are developed in a strongly mineralized belt designated the Reed lode, which passes through the town of Copperopolis and trends northwest." (Paragraph 1, Page 94).

"The Copperoplis mines have been among the significant producers of copper in California since 1861 with a total production of about 72 million pounds of copper. The mines include the North Keystone mine, second largest copper producer in the state during World War II, and the Keystone-Union mine, a major producer in earlier years." (Page 93).

"Copperopolis was founded in September 1861, and less than 2 years afterward the town had grown to a thriving community of nearly 2,000 people, supported primarily by copper mining and related pursuits. The Union mine was a profitable enterprise from the very beginning of mining operations, and by the fall of 1866 had been developed to a depth of 500 feet. It was then the largest copper mine in the state, and had yielded more than half the total California production for the years 1861-66. The adjoining Keystone mine, by 1867, was developed to a depth of 552 feet, but its recorded production for the 6 previous years was only about a tenth of that of the Union mine. The Empire mine likewise underwent considerable development during this period, but on most of the other claims in the district the amount of underground exploration was small." (Paragraph 1, Page 95).

"In these early days the ore was hauled by wagon to Stockton, from there was shipped by river-boat to San Francisco, whence it was exported to Atlantic Coast ports or to Swansea, Wales. Shipping costs were high, causing all ores of less than 10 percent to be valueless. Attempts to utilize lower-grade ores were made by the erection of a smelter at the Union mine, and a concentrating plant at the Keystone mine, but in neither case were these operations profitable. The average tenor of ore shipped from the Union mine did not exceed 15 percent copper, and that from the Keystone averaged about 1 percent higher. By roasting over wood fires, the tenor of some lower-grade material was increased to that of commercial grade." (Paragraph 2, Page 95).

"By 1887 the Union and Keystone mines were held under one ownership by a group of Boston men. These properties had been idle since 1867, but during 1887 and 1888 they were unwatered. This was followed by a second period of activity, in which the Union shaft was sunk to 600 feet, a 100-ton Orford furnace was erected, and some high-grade matte was produced. The properties were shut down in 1892, and remained idle until 1901 when unwatering was again started.

The Keystone-Union mine, operated as a unit, was active in the years 1902-09, 1911-20, 1923-27, and 1929-30. During the earliest of these intervals the ore was treated by leaching and by direct smelting. Since 1911 the treatment has been either direct smelting or concentration and smelting. In August 1930, in response to a marked decrease in the price of copper, the mine was shut down; it has not reopened since that date. During 1944-46 tailings from earlier operations were reworked for their copper content." (Paragraph 5, Page 95).

"The North Keystone mine was again unwatered in 1942, and production of ore began in the fall of that year. It continued to operate until the summer of 1945, by which time it had been developed to the 1075 level. During these years it was the second-largest producer of copper in California." (Paragraph 2, Page 98).

"The most important mines and prospects at Copperopolis are, from north to south, the North Keystone mine, the Keystone-Union mine, the Empire mine, and the McCarty and Calaveras properties. Of these, the Keystone-Union and the North Keystone have been the most active mines and the major producers in the district." (Paragraph 1, Page 102).

"In recent years the North Keystone has been the only one accessible for extensive underground examination, and consequently most of the conclusions relating to the geology of the ore bodies have been based on observations made in this mine. However, to supplement the study of the ore deposits as much as possible, assay sheets and maps of other mines in the district, and several accessible shallow openings, as the Empire tunnel and the McCarty shaft, have been studied in detail." (Paragraph 1, Pages 102 and 103).

"Southeast of the Keystone-Union mine is the Empire claim, on which is the inactive Empire mine with no reported production since 1867. It consists of a vertical shaft, said to be more than 300 feet deep, and several levels of unknown extent. Near the shaft and toward the south end of the claim are many smaller openings--shafts, pits, and adits--the most important of which is the Empire tunnel. This was the only opening on the claim accessible for extensive examination." (Paragraph 2, Page 108).

"Southeast of the Keystone-Union mine the zone of intense chloritization continues without interruption, and near the Empire shaft reaches its greatest width, approximately 300 feet." (Paragraph 3, Page 108).

"About 150 feet southwest of the Empire shaft collar is an elongate serpentine body whose eastern boundary is a prominent fault line marked by talcose gouge. This is the Calaveras fault, a high-angle, east-dipping fault that can be traced along its strike for more than 2,000 feet. It is analogous in many respects to the Footwall fault of the central and northern part of the district, for here the zone of chloritization, in a general way, has followed it, and the copper mineralization is most strongly developed along this fault or in its hanging wall." (Paragraph 4, Page 108).

"The Empire tunnel is an adit about 420 feet long driven through the mineralized zone near the south end of the Empire claim. It has been mapped in detail (pl. 40), and sampled for ore." (Paragraph 5, Page 108).

"The McCarty prospect is on the Calaveras claim, immediately south of the Empire claim. It consists of two shallow shafts, the southern one 35 feet deep, the northern one partially caved and of undertermined depth. Extending northwest from the southern shaft are two short levels connected by an irregular open stope, near the north end of which is a winze that extends below water level." (Paragraph 2, Page 109).

"The accessible workings are within the oxidized zone, the base of which, at the McCarty prospect, is approximately at 50 feet depth, the position of the water table. The mineralization follows a 2- to 7-foot zone of crushing and shearing along the southwest side of a high-angle fault; this, the McCarty fault, strikes parallel to the related Calaveras fault which is 20 to 25 feet to the east. At the surface the McCarty fault dips east. In the underground workings, however, the fault swings through vertical and has a steep westward dip. It is possible that this reversal of dip has served as a locus of mineralization here." (Paragraph 3, Page 109).

"The ore consists of a mixture of malachite and cuprite in limonite, with small amounts of azurite and, in the lower portion of the workings, chalcopyrite. Encrustations of chalcanthite are not uncommon. This oxidized material is derived from a mixture of chalcopyrite and pyrite, small residual masses of which are present below 20 feet depth. No gangue minerals were observed, other than small veinlets of white quartz." (Paragraph 4, Page 109).

"The wall rocks are green spotted chlorite schist derived from volcanic rocks of intermediate composition. Within the zone of copper mineralization are thin streaks of intensely chloritized rock, similar in character to the chloritized schist present at the North Keystone and Keystone-Union mines. The chloritization is restricted to a width of 3 to 4 feet adjacent to the McCarty fault." (Paragraph 5, Page 109).

"Several of the ore bodies in the mines do not crop out, and the likelihood is strong that additional blind shoots are present in the district. Exploration for these should be restricted to the belts of strong chloritization, and particularly to ground adjacent to faults or close to the intersection of faults. Where surface exposures are poor and underground examination impractical, geophysical methods, such as dip-needle or magnetometer surveys, will probably be of considerable aid in the delineation of significant faults. Special attention should be devoted to areas in which pyritization is strong, for the known ore bodies are generally surrounded by an envelope of disseminated pyrite. The ground immediately north of the North Keystone mine, and that at the south end of the Keystone-Union mine, in light of present knowledge, are two areas that should warrant the most thorough prospecting." (Paragraph 2, Page 110).

The writer has examined the McCarty property and studied the outcropping rocks and the material taken from the three shafts on the property on several occasions. The gossan or oxidized iron outcrop is approximately 300 feet in width and is more prominent and wider than the gossan outcrop on the Union or Keystone properties. Samples of copper and iron sulphides exposed on the dump at the shafts indicate that copper sulphide ores should be encountered at or just below the water level which is approximately sixty feet below the surface at the McCarty No. 3 shafts.

There are two shafts located near the northwest corner of the property, both inaccessible. It is reported that the two shafts were connected by a drift just above the water level, or approximately 60 feet below the surface and that a winze from the drift extends below the water level, and also an open stope above the drift, from which several hundred tons of oxidized ore was extracted.

The No. 3 shaft is located approximately 250 feet easterly from the aforesaid shafts, also inaccessible. It was sunk on the Calaveras fault which dips at an angle of 83 degrees from the horizontal. This shaft is reported to be seventy-five feet deep.

It is proposed to timber the No. 3 shaft and sink it to a depth of 100 feet below the surface, then crosscut the mineralized zone to the northeast and southwest. This work should disclose copper sulfide ores below the water level, which could be extracted up to the overlying leached and oxidized zone and also furnish the data for future development. This assumption is based on the history of operations of the Empire, Union and Keystone properties, located along the same mineralized zone where commercial sulfide copper ores were encountered at and below the water level. The inside measurements of the shaft when timbered will be a 4'6" x 4'6" skip compartment and a manway 4'6" x 2'10". The inclination will be 80 degrees from the horizontal to the northeast.

A 75 horsepower electric motor driven hoist, a 3 drill electric motor driven air compressor and approximately one-fourth of a mile of electric power line will be the power requirements. A headframe skip pump, ore cars, rails and water tank, all necessary pipe and mining tools, will also be required.

With the aforesaid equipment and the crosscuts and drifts from the 100 foot level completed, it is expected that approximately 50 tons of copper sulfide ore can be extracted daily until such time as a second level has been made ready for stoping when the tonnage should be increased to 100 tons per day.

It is proposed to mill and concentrate the ore obtained from the No. 3 shaft at the Mountain King Mill, which is located in the district approximately three and one-half miles due west of the No. 3 shaft, which is reached by a surfaced road with no grades, a distance of six miles. The location of the mill and road is shown in red on Plate I.

The Mountain King Mill, consisting of 3 ball mills, flotation cells and filters completely powered with electric motors, has a maximum capacity of approximately 600 tons of ore per day. The mill was successfully operated during World War II to concentrate copper sulfide ore from the North Keystone property. The reported extraction was 95% of the copper contained in the ore. The concentrates were hauled by truck to Farmington, a distance of twenty miles from which point they were shipped by rail to the smelter at Salt Lake City, Utah. The ramp at Farmington belongs to the Mountain King Mill and is in good condition.

Negotiations are being consumated to lease the Mountain King Mill to concentrate copper sulfide ores from the McCarty property. The minimum monthly rental will be $1,000.00 per month for a maximum tonnage of 50 tons per day.

The McCarty property is owned by the McCarty Corporation and is now held by Ronnie Smith under a lease dated October 2, 1950 with five percent of the net smelter return payable to the McCarty Corporation and one percent payable to Cyril McCarty until the five percent royalty amounts to $150,000.00, the total purchase price.

It is estimated that the cost of sinking and timbering the No. 3 shaft, driving the crosscuts and the upraises preparatory to stoping operations will amount to approximately $25,000.00.

The estimated cost of the necessary machinery and its installation together with other equipment at the mine and the rearrangement of the facilities for dumping the ore at the mill will amount to approximately $25,000.00.

Mine and mill supplies, lease acquisition and working capital for preliminary exploration work prior to blocking out ore and the installation of machinery will amount to approximately $25,000.

The estimated mining, hauling and milling costs, exclusive of development costs, based on 50 tons per day, are estimated at $5.80 per ton divided as follows: Mining $3.00 per ton, trucking $0.50 per ton and milling $2.30 per ton.

It is believed that copper sulfide ore will be encountered in the workings from the McCarty shaft which will carry copper values, at least, or as high as the ore obtained from the North Keystone and Union mines. This opinion is based on the surface outcrop and the ore exposed in the old workings on the McCarty property.

On the basis of mining and milling 50 tons of ore per day carrying 5% copper, the daily profits would amount to $539.00. The net value per ton is based on the following assumption:

Mill recovery 95% - Copper recovered per ton of ore milled 95 pounds		
Value of 95 pounds of copper at 24½ cents per lb.		$23.27
Freight on concentrates and smelting charges	$ 1.80 per ton	
Royalty - 9%	1.93 " "	
Mining and Milling costs	5.80 " "	
Overhead and general expense	1.25 " "	10.78
Net Profit per ton		$12.49

Respectfully submitted,

Roy G. Mead

Roy G. Mead

December 3, 1950

920 Burchett Street
Glendale 2, California

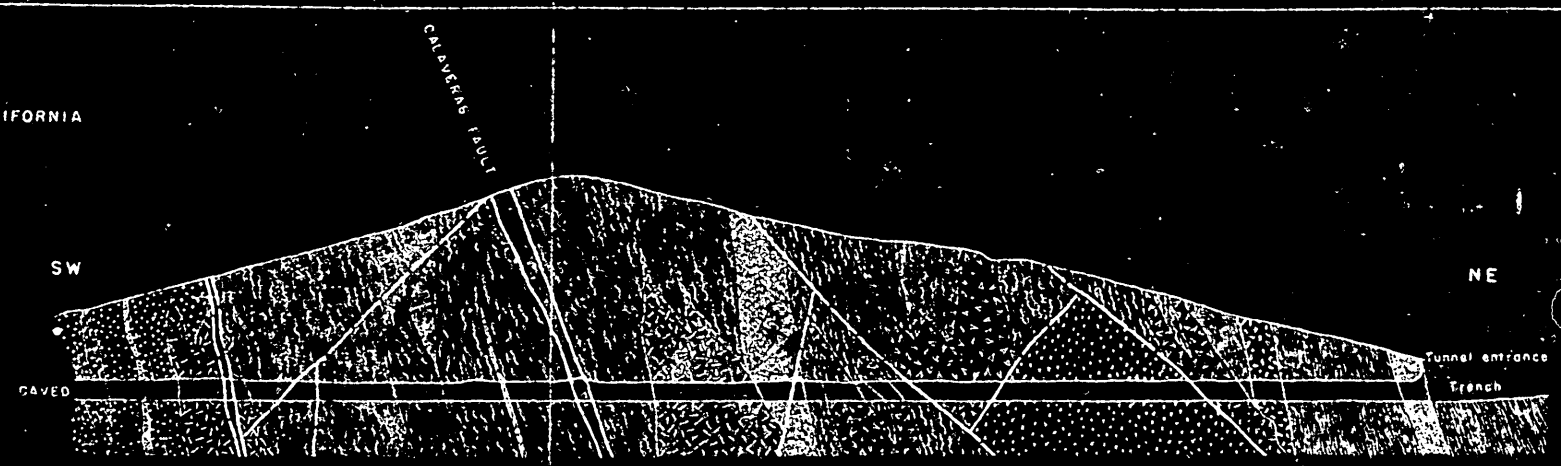
Tower Ranch
Felix
McCarty Ranch
Kuhn Ranch
Salt
Hoodsum
Dyckham Gulch
Copper Gulch
Tokingugh City
Shirley Gulch
Shirley Mtn
Thompson Flat
Quail Hill
Hog Hill
NAPOLEON MINE
Underwood
Little Creek
Sawmill
Creek
Blue
Gulch
Dry
Creek
Little Creek
Reservoir
Reservoir
VALLEY

GEOLOGIC MAP AND SECTION OF THE EMPIRE TUNNEL

COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA

BY
G. R. HEYL AND M. W. COX

NOVEMBER 1943

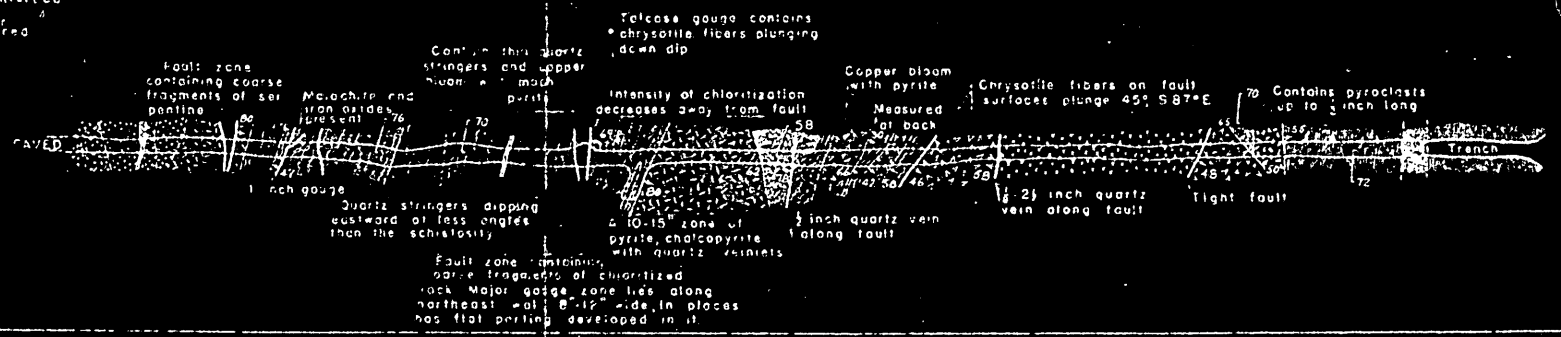


EXPLANATION

- Zone of quartz veins
- Pyritized rock
- Chloritized rock
- Granodiorite
- Hornblende diorite
- Hornblendite
- Schistose (sheared) saussurite gabbro
- Saussuritized gabbro
- Serpentine
- Felsite
- Slaty pyroclastics
- Slate
- Green schist
- Contact, showing dip, dashed where inferred
- Fault, showing dip, dashed where inferred
- Attitude of cleavage or schistosity

SCALE

0 10 30 60 90 120 150 Feet



ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

February 25, 1951

Mr. Ronnie Smith
Tower Petroleum Bldg.
Dallas, Texas

Dear Mr. Smith:

The following report is to be considered as a supplement to my report of December 3, 1950 on the McCarty property as it covers development work done on the property after that date.

In my previous report on the property it was proposed to re-timber and sink the McCarty shaft No. 3 to a depth of 100 feet and then crosscut to the east to intercept the Calaveras fault and explore and develop the sulfide ore bodies which in the district, occur on the east side of the Calaveras fault.

From all the obtainable data regarding the McCarty No. 3 shaft it was believed that it was sunk about the year 1870, to a depth of 80 feet on a fault or mineralized zone lying approximately 60 feet to the west of the Calaveras fault on what is now called the McCarty fault.

There was no indications on the surface that any ore had been encountered or stoped from the No. 3 shaft. However, after cleaning out the fill to a depth of 60 feet we encountered an open shaft with old timbers and ladders and an 8 inch Cornish pump discharge pipeline. At a depth of 100 feet a station partly caved was encountered with a crosscut running 40 feet to the northeast and a crosscut running 20 feet to the southwest. Both crosscuts were in slate impregnated with iron sulfides and small seams of chalcopyrite. Below the 100 foot station the ground to the northwest and southeast of the shaft had been stoped to a distance of more than 25 feet on either side of the shaft. The opening was full of water, but soundings indicated that the stope around the shaft was open below the 100 foot level to a depth of more than 50 feet.

Because of the dangerous condition of the opening it was decided that the shaft could not be opened and re-timbered below the 100 foot level without the expenditure of a large sum of money, and then only under rigid safety regulations imposed by the State Mine Inspector. Therefore, it was decided to abandon the shaft. It was learned afterward that several thousand tons of copper sulfide ore had been taken from around the shaft, below the 100 foot level, which was hauled by wagon to San Francisco and there loaded on a sailing vessel bound for Swansea, Wales, which sunk en route.

After the abandonment of the No. 3 shaft exploration work was started along the Calaveras fault 200 feet northeasterly from the No. 3 shaft. At the point where the exploration work was started, the oxidized zone had been eroded to the sulfide zone. Two old shafts were found about 450 feet northeasterly from the No. 3 shaft along the Calaveras fault from which high grade chalcopyrite ore had been extracted. Nine drill holes, each 15 feet deep, were drilled along the outcrop of the fault for a distance of 250 feet commencing with 200 feet from shaft No. 3. All of the drill holes encountered copper sulfides (chalcopyrite). Four openings were then made along the fault, the locations of which are shown on the accompanying map marked Exhibit A.

Opening No. 1, located on the northwest side of the creek, is a trench 4 feet by 6 feet by 4 feet deep and exposes a mineralized zone 6 feet in width with stringers of chalcopyrite from one-half to two inches in width in shale parallel to the strike of the fault.

Opening No. 2 is located along the fault 50 feet northeast of the No. 1 opening, and is a shaft 4 feet by 9 feet by 10 feet deep. A mineralized zone 9 feet in width is exposed showing chalcopyrite seams from 1/2 inch to 4 inches in width, of which 30 inches on the north side is good milling ore showing streaks and seams of chalcopyrite 2 to 4 inches in width.

Opening No. 3 is a shaft 60 feet northeast of the No. 2 shaft along the strike of the fault. This opening is a shaft 6 feet by 6 feet by 11 feet deep. The mineralized zone exposed in Shaft No. 2 has not been encountered in this shaft as the shaft is located about 10 feet north of the fault and will not be encountered until the shaft has reached a depth of about 15 feet. However, spots and stringers of chalcopyrite impregnated in the slate is exposed in the bottom of the shaft.

Opening No. 4 is located approximately 30 feet southwest of the No. 3 opening and 20 feet to the south in the footwall of the fault. This opening is a shaft 4 feet by 6 feet by 8 feet deep. A mineralized zone 4 feet by 3 inches in width is exposed which shows chalcopyrite and bornite, the primary minerals, and the secondary minerals, covellite and chalcocite. This shaft is in slate on the footwall side of the fault. The occurrence of secondary copper minerals indicates that within a few more feet in depth primary sulfide ores will be encountered. At this location it is evident that there is a deposit of copper ore on the south side of the fault. There is also an outcrop of gossan (hematite) and iron-stained slates, over 50 feet in width, to the southeast of the fault, indicating that a lens or deposit of copper sulfides may be encountered in the footwall on the south side of the fault. Shaft No. 4 is being sunk ten feet deeper on the theory that copper sulfide ores will be encountered within that depth.

Basing an opinion on the development work just completed along the fault it is believed that a prospect shaft should be sunk to a depth of 50 feet where the No. 3 opening is located, and the mineralized zone explored by crosscutting to the northeast and southwest from the prospect shaft at that depth, also that the gossan outcrop to the north and south

of the Calaveras fault be prospected by core holes drilled through the gossan into the underlying sulfide zone. A row of core holes drilled northeast and southwest of the fault spaced at 25 foot intervals would, in my opinion, determine the width of the mineralized zone and whether or not the entire ore deposit contained copper values of sufficient grade to justify shovel mining operations or selective underground mining.

I estimate that the prospect shaft and crosscutting will cost approximately $20,000.00 and that the core drilling can be contracted at a cost of approximately $6.00 per foot. A row of holes on a line extending from 50 feet south of the fault to 150 feet north of the fault spaced at 25 foot intervals would require eight holes with an average depth of 75 feet and would cost approximately $3,600.00. Six rows of holes should be drilled at an approximate cost of $21,600.00.

If the core drilling and the prospect shaft determine that the ore body can be mined by power shovel, the shovel mining work can be contracted, therefore no mining equipment would be required. If the deposit cannot be mined by shovel then selective underground mining operations will necessarily have to be employed, in which case a permanent working shaft with suitable hoisting equipment, air compressors and air drills will be required.

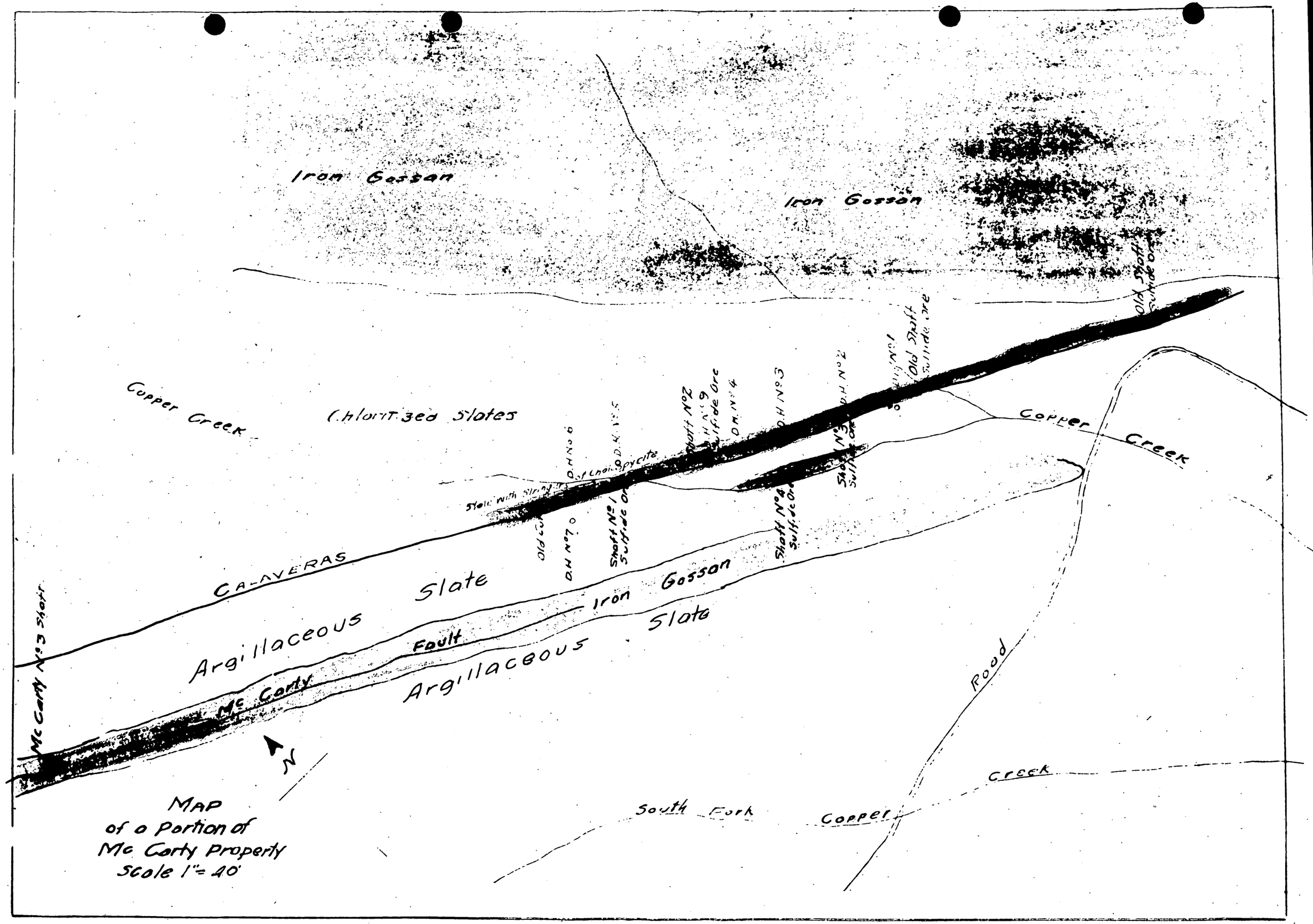
The cost of the hoisting equipment, air compressor drills, etc. is estimated at $25,000.00. The cost of sinking and timbering a permanent shaft to a depth of 100 feet is estimated at $5,000.00. Crosscutting and drifting to block out ore, 1,000 feet at $20.00 per foot, amounts to $20,000.00. The estimated cost for machinery and underground development work amounts to $50,000.00.

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm



MAP
of a Portion of
Mc Carty Property
Scale 1" = 40'

5

ED. EISENHAUER, JR.
320-322 So. San Pedro St.
Los Angeles 13, Calif.

ASSAY CERTIFICATE

PHONE VANDIKE 9328

Los Angeles, Calif. Feb 26/51 19

I hereby Certify that the samples described below, received from

Ronnie Smith(c/o Roy G.Mead) assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	OZS. PER TON	VALUE PER TON	OZS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
McCarty # 1	(Shaft No. 2, 9' across bottom of shaft)					1.1		
McCarty#2	(Sample of material from Shaft No. 2)					1.0		
McCarty # 3	(Drilling from drill hole #9, Shaft No. 2, 8' to 16' in depth)					.7		
McCarty # 4	(30" of vein material, slate with seams of Chalcopyrite)					1.6		
McCarty # 5-Sh.# 4	(4'3" oxidized zone exposed in bottom of Shaft No. 4)					1.1		

GOLD @$____PER OZ.

SILVER @ $____PER OZ.

LEAD @ ____C.

COPPER @ ____C.

CHARGES 6.25

Ed Eisenhauer Jr.
ASSAYER

ROY G. MEAD
CONSULTING ENGINEER
920 BURCHETT STREET
GLENDALE, CALIFORNIA
CHAPMAN 5-2290

February 25, 1951

Mr. Ronnie Smith
Tower Petroleum Bldg.
Dallas, Texas

RE: DONNER PROPERTY

Dear Mr. Smith:

The Donner property is located in the SW¼ of Section 33, T. 2 N., R. 11 E., M.D.B. & M., Calaveras County, California, approximately seven miles due west of Copperopolis and four and one-half miles southwest of the Mountain King Mill. The property can be reached from Copperopolis via Highway No. 4 to the junction with the Quail Hill Mine road to the Quail Hill Mine from which point approximately one mile of road will be required. The distance from the property to the Mountain King Mill is approximately eleven miles.

The Donner property embraces a mineralized vein 6 feet wide striking S. 50° E. The footwall is mainly an altered slate of Jurassic age belonging to the Meta-sediments of the foothill belt. The hanging wall is a Meta-Andesite of Jurassic age belonging to the Amador series. The vein material is quartz, iron pyrite and chalcopyrite, with occasional kidneys of manganese oxide. The surface exposure of the vein is an iron gossan.

The property has been partially developed by a shaft sixty feet deep dipping 80° to the west. A sample of ore containing chalcopyrite and pyrite taken across the vein for a width of three feet at a depth of forty feet assayed 9.97% copper, 70 cents gold and 36 cents silver per ton. A sample of the dump containing all the material from the shaft at that depth assayed 6.22% copper, $1.40 gold and $1.88 silver per ton. A sample of the dump containing material taken from the shaft at a depth of sixty feet assayed 4.75% copper.

At a depth of sixty feet the vein was five feet in width, two feet of which was high grade chalcopyrite ore on the hanging wall with three feet of low grade sulfide ore on the footwall. The assay certificate of the high grade ore, marked sample No. 1, and the three feet of vein material on the footwall is attached hereto.

It is proposed to enlarge and timber the shaft and then sink an additional forty feet, then drift one hundred feet north and south on the vein. This work should develop approximately 7,000 tons of milling ore which, according to present indication, should average at least 5% copper or $24.50 per ton.

The cost of trucking to the Mountain King Mill should not exceed $1.50 per ton, mining cost should not exceed $2.50 per ton and milling cost $2.00 per ton, a total of $6.00 per ton. The royalty on 5% ore will amount to $2.45 per ton. Freight and treatment on concentrates will amount to approximately $2.00 per ton of ore. The total operating costs, including royalty, would amount to $10.45, which would leave a net profit of $14.05 per ton.

The cost of the proposed development will amount to approximately $19,000 divided as follows:

Enlarging and timbering present shaft	$1,500
Sinking and timbering 40 feet of shaft	2,000
200 feet of drifting	4,000
Hoist	4,000
Air compressor	2,500
Air drills	1,500
Cable and skip	500
Pipe	500
One mile of road	2,500
	$19,000

Very truly yours,

Roy G. Mead

ROY G. MEAD

RGM:nm

7A

ED. EISENHAUER, JR.
320-322 So. San Pedro St.
Los Angeles 13, Calif.

ASSAY CERTIFICATE

PHONE VANDIKE 9328

Los Angeles, Calif. Feb 26/51 19

I hereby Certify that the samples described below, received from

~~Ronnie Smith(c/o Roy Moy G.Mead)~~ assay as follows:

Owner's Mark and Sample	GOLD		SILVER		TOTAL VALUE PER TON	PERCENTAGE OF		
	OZS. PER TON	VALUE PER TON	OZS. PER TON	VALUE PER TON		COPPER	LEAD	ZINC
Donner # 1	(2 ft. of Chalcopyrite and iron pyrite on hanging wall of vein)					17.6		
do # 2	(3 ft. of mineralized vein underlying 2 ft chalcopyrite) (Sample No. 1)					2.5		

GOLD @$ ____ PER OZ.

SILVER @ $ ____ PER OZ.

LEAD @ ____ c.

COPPER @ ____ c.

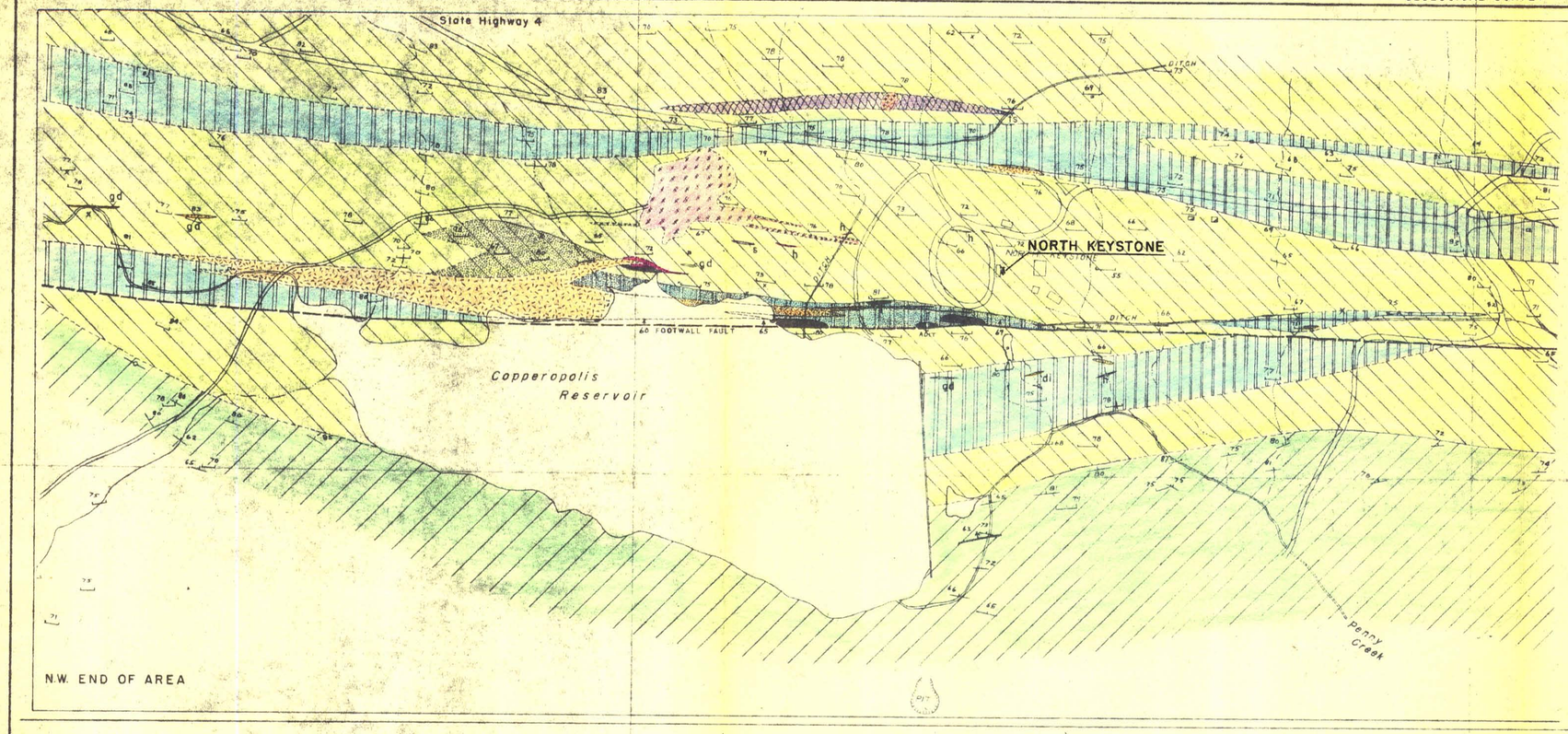
CHARGES 2.50

Ed. Eisenhauer Jr.
ASSAYER

GEOLOGIC MAP OF THE COPPEROPOLIS DISTRICT

COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA

BY
G. R. HEYL AND J. B. HADLEY

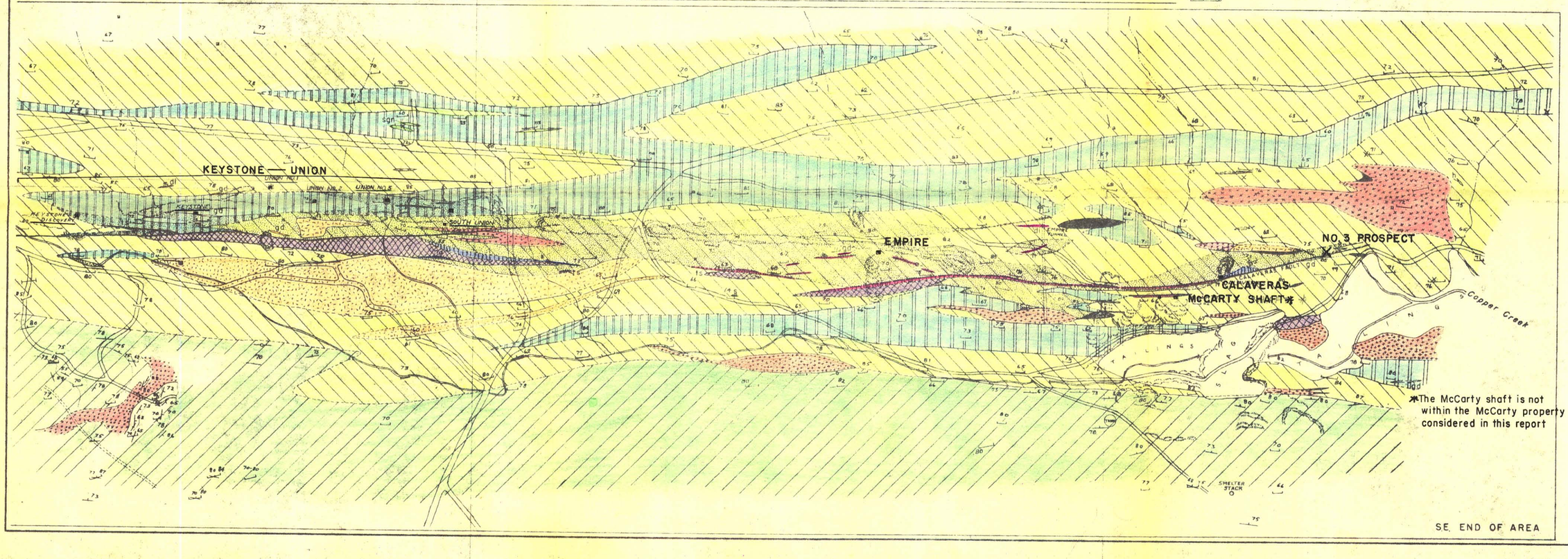


SCALE

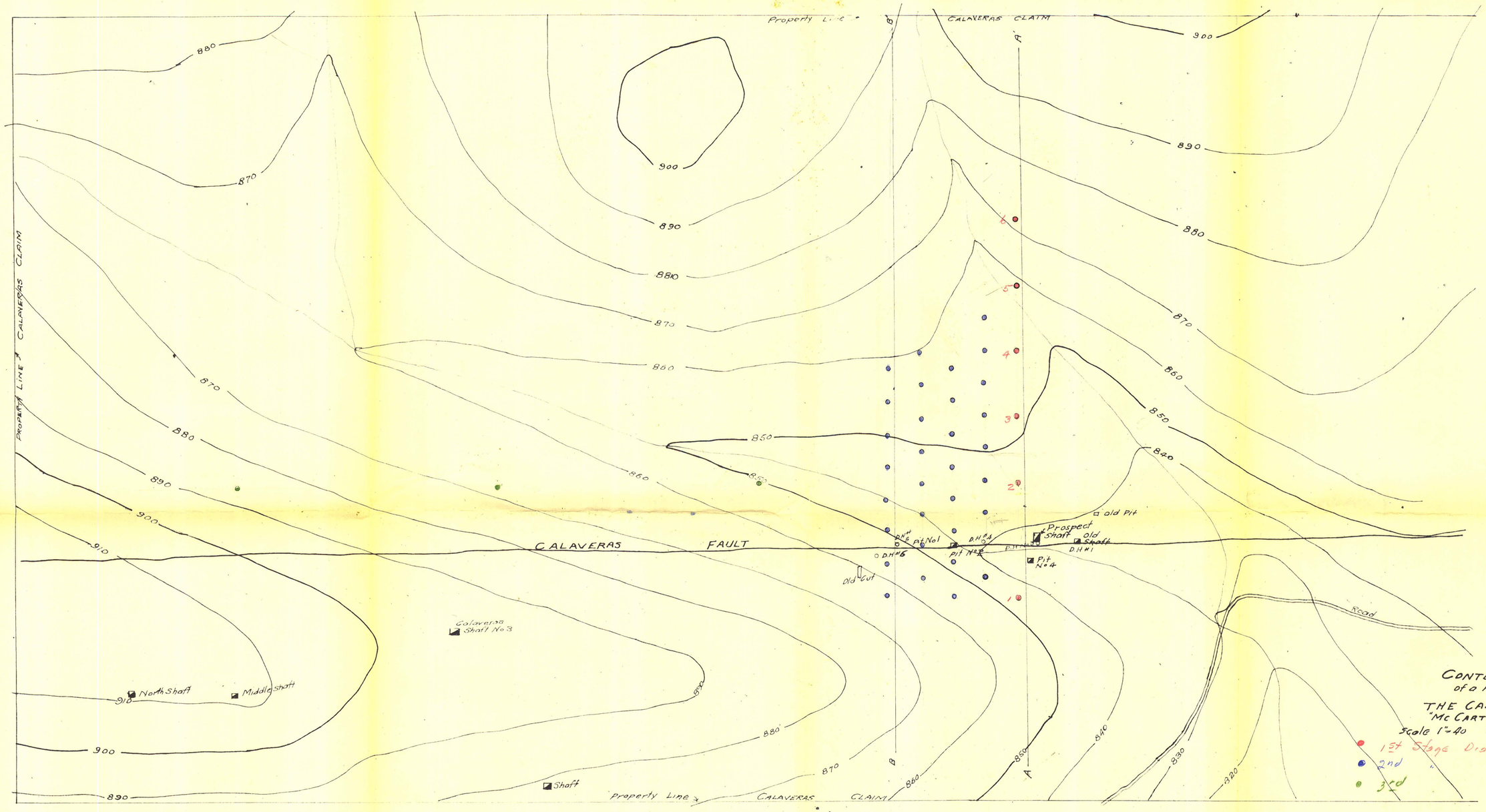
0 200 600 1000 Feet

EXPLANATION

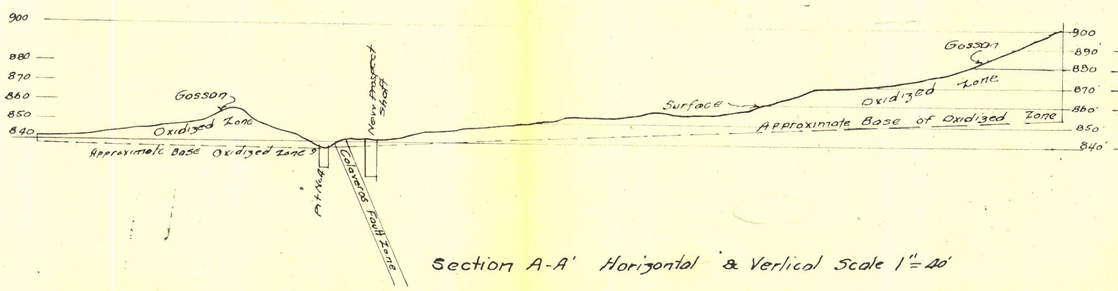
- Gossan
- Quartz vein
- Chloritized rock
- gd Granodiorite
- di Diorite and quartz diorite
- h Hornblendite
- hb Hornblendite breccia
- gb Saussuritized gabbro
- s Serpentine
- ts Talc schist
- Small dikes, type indicated by letter symbol
- sl Argillaceous slate
- sgn Schist and greenstone of volcanic origin, with slaty tuff intercalations
- htv Bedded hornstone, tuff, and volcanic breccia
- Contact, dashed where approximately located
- 65 Fault showing dip dashed where approximately located
- Trace of individual bed
- Strike and dip of beds
- Vertical beds
- Strike and dip of cleavage or schistosity
- Vertical cleavage or schistosity
- Caved shaft
- X Pit or trench
- Shaft
- Dump



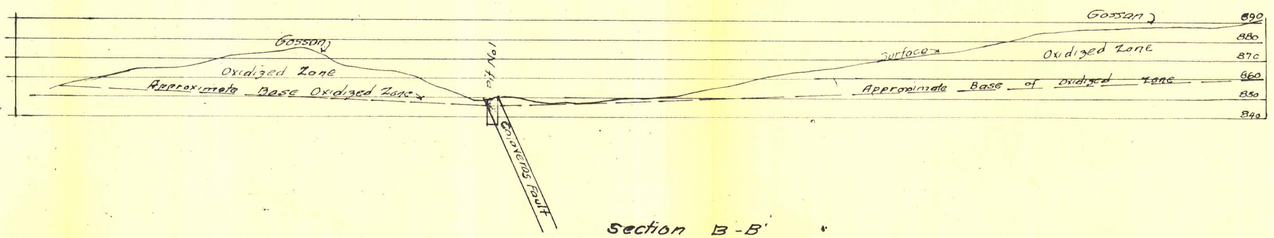
*The McCarty shaft is not within the McCarty property considered in this report



CONTOUR MAP
of a Portion of
THE CALAVERAS CLAIM
"Mc CARTY PROPERTY"
Scale 1" = 40 Contour Interval 10'



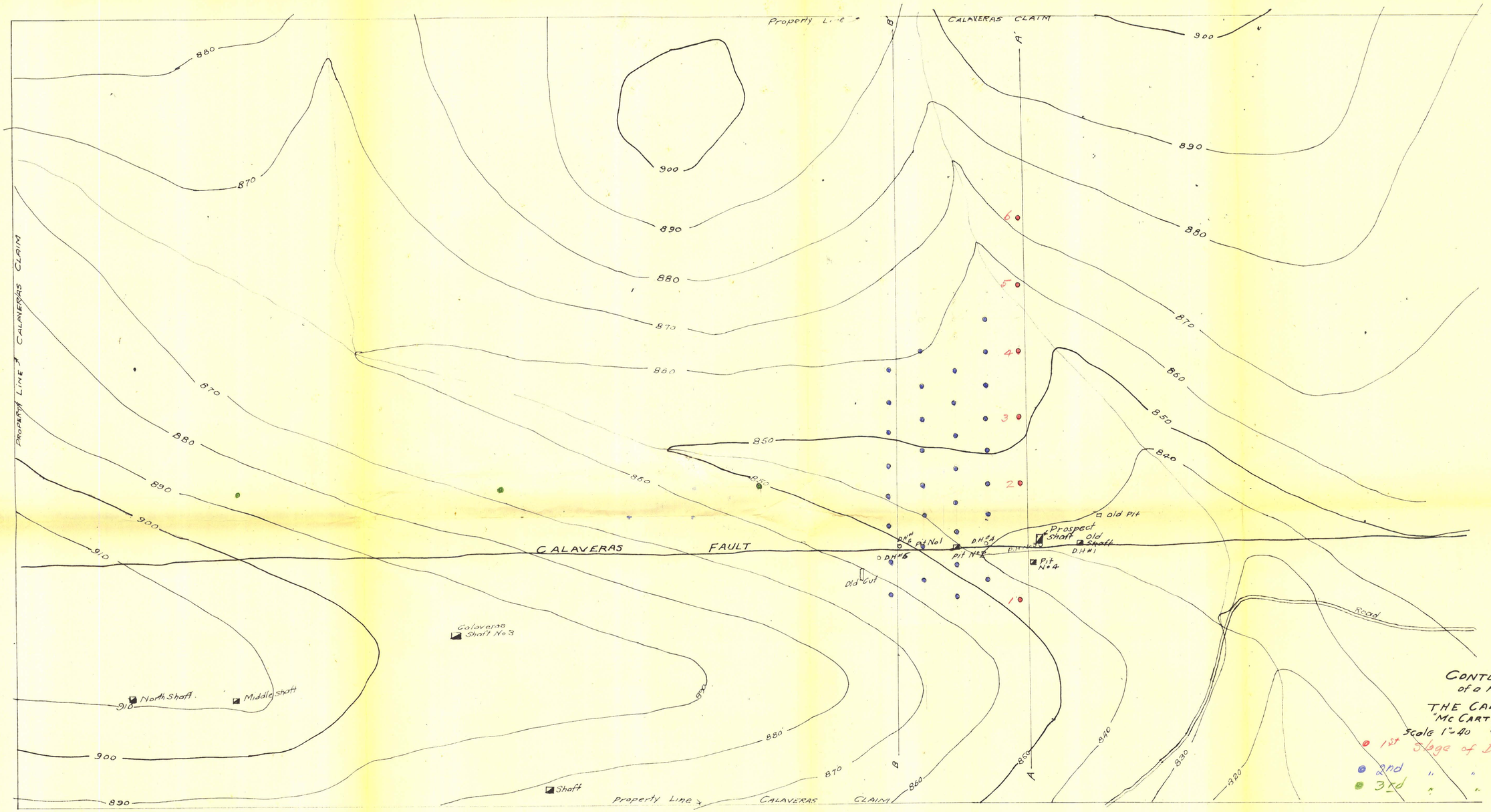
Section A-A' Horizontal & Vertical Scale 1" = 40'



Section B-B'

By G Mead 3-10-51

Exhibit A



CONTOUR MAP
of a Portion of
THE CALAVERAS CLAIM
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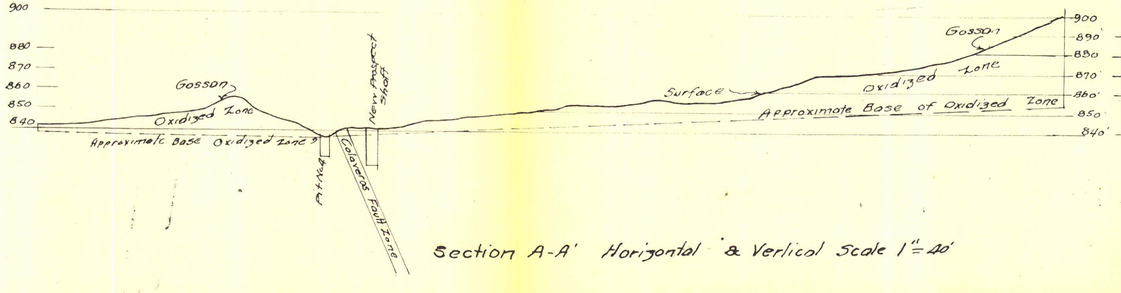
Scale 1"=40 Contour Interval 10'



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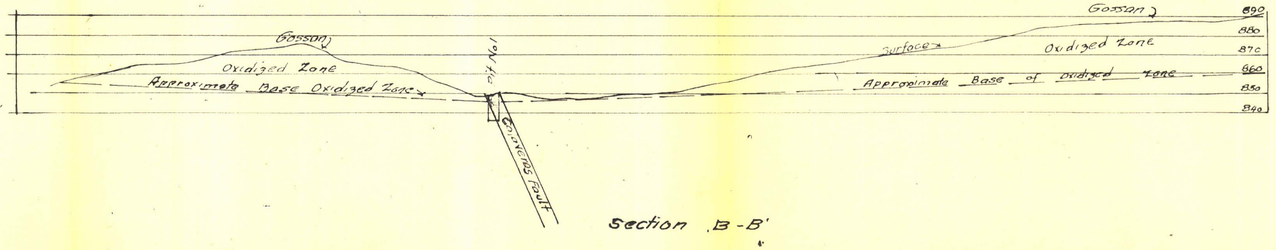


Section B-B'

By G Mead 3-10-51

Exhibit A

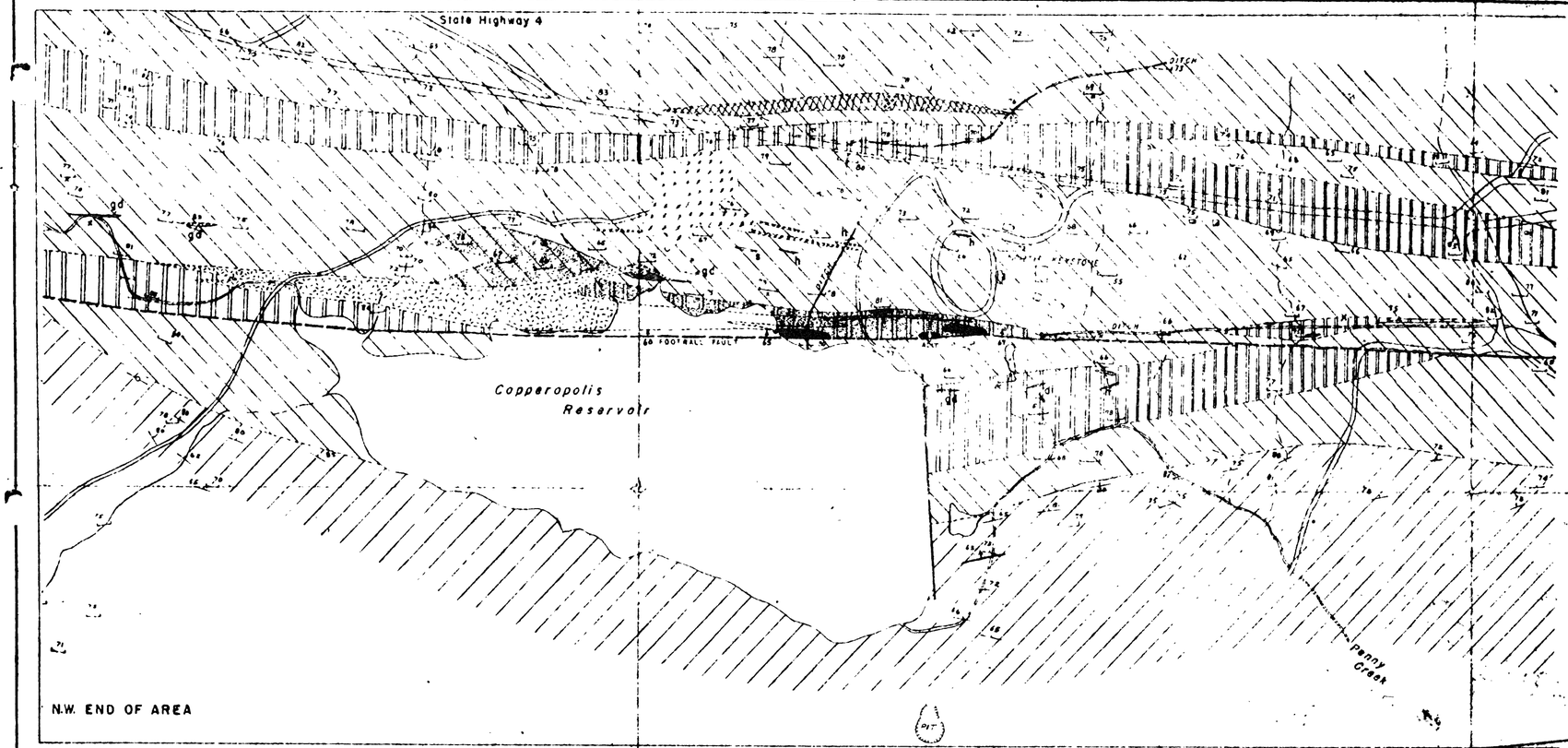
GEOLOGIC MAP OF THE COPPEROPOLIS DISTRICT

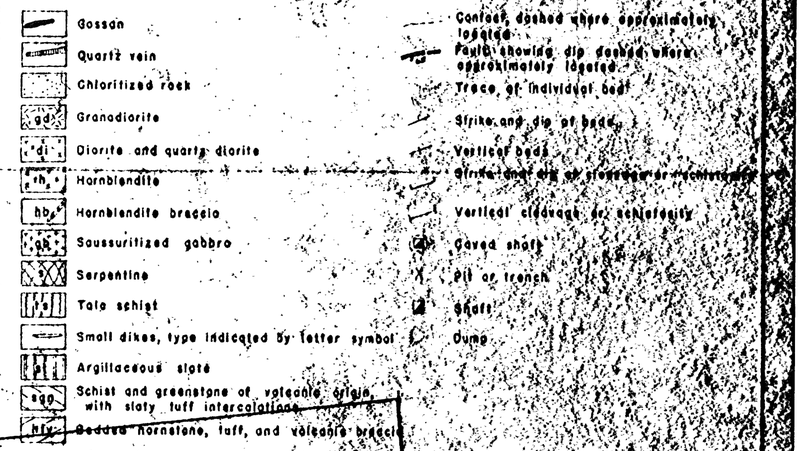
COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA

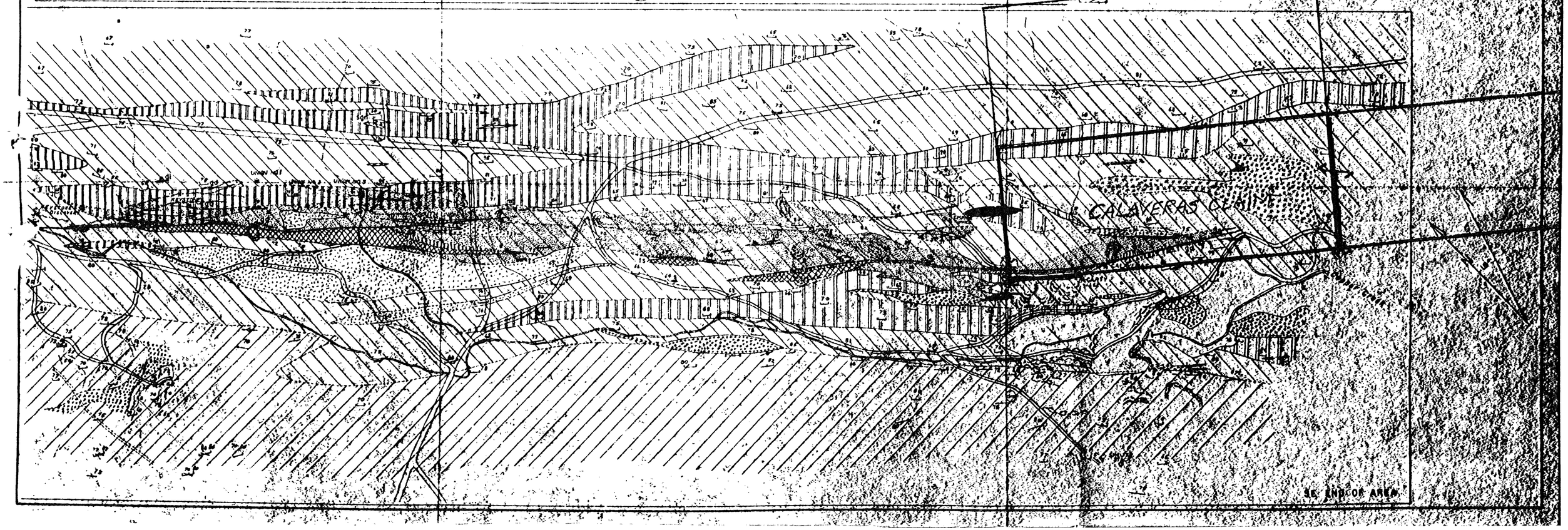
BY
G. R. HEYL AND J. B. HADLEY

SCALE

0 200 500 1000 Feet







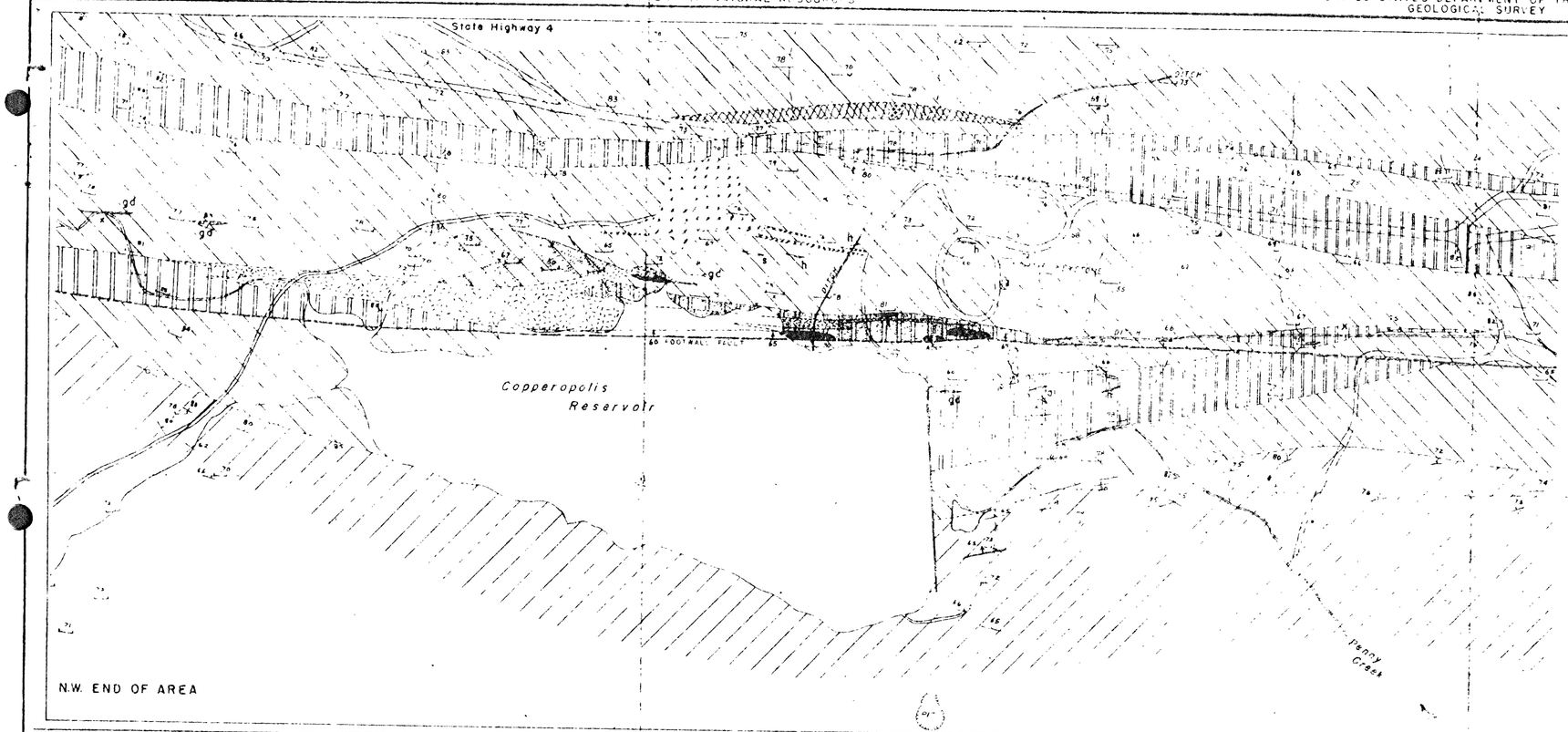
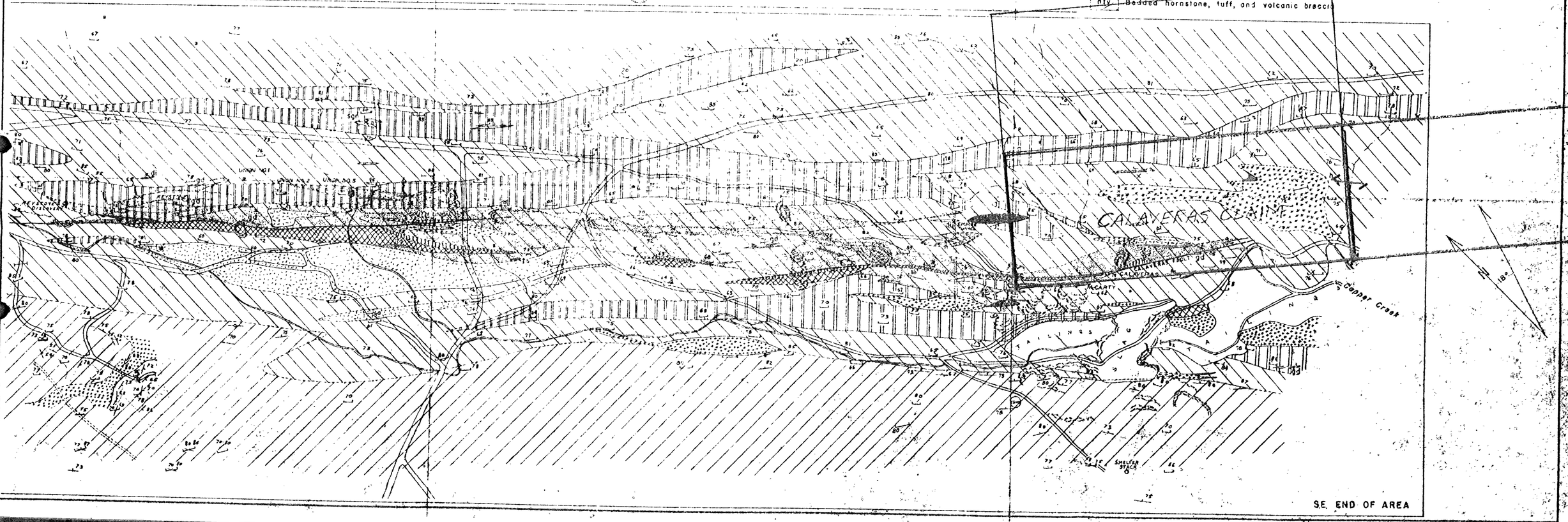
GEOLOGIC MAP OF THE COPPEROPOLIS DISTRICT

COPPEROPOLIS, CALAVERAS COUNTY, CALIFORNIA

BY
G R HEYL AND J. B. HADLEY

SCALE

0 200 600 1000 Feet

EXPLANATION

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- gb Saussuritized gabbro
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- Small dikes, type indicated by letter symbol
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- Contact, dashed where approximately located
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- Trace of individual bed
- Strike and dip of beds
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- Strike and dip of cleavage or schistosity
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- Caved shaft
- X Pit or trench
- Shaft
- Dump